Pearl TAN | LIM Chu Yeong | KUAH Ee Wen

ADVANCED FINANCIAL ACCOUNTING

AN IFRS® STANDARDS APPROACH

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4E

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Mc Graw Hill

ADVANCED FINANCIAL ACCOUNTING: AN IFRS® STANDARDS APPROACH
FOURTH EDITION

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This book is dedicated to our students, past and present.

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PREFACE

With the internationalization of accounting standards and their rapid rate of change, accounting students worldwide need to have a rigorous understanding of International Accounting Standards (IAS® Standards) and International Financial Reporting Standards (IFRS® Standards) as well as the ability to apply the recognition, measurement and disclosure requirements of these standards to complex transactions. The learning curve for aspiring accountants in today's dynamic accounting environment is steep and the challenge for accounting students is to develop expertise with insight.

As accounting educators who have taught advanced financial accounting for several years and who have worked in senior-level positions in auditing and corporate accounting, we understand the challenges that accounting students face. As a result, we have, over the years, developed approaches and explanations to help accounting students learn complex rules in a rigorous, analytical and insightful manner. In this new edition, we present the rigour of the requirements of accounting standards as applied to complex transactions, with generous explanations and many illustrations.

As accounting professors, we believe that students learn best when they understand the rationale for the accounting methods or procedures used. Hence, this textbook has many generous explanations of the accounting entries and procedures used. We also highlight the analytical relationships among complex financial statement numbers in business combinations, foreign currency translation and accounting for taxes on income. Students may use these analytical relationships to check or reconcile their calculations.

We have developed unique analytical procedures that help students to derive reported items in consolidated financial statements independently of consolidated journal entries. These analytical checks are useful in more ways than one. They develop a deeper understanding of the components that are included in the final numbers reported. They also provide an independent means of checking the results of the consolidation process.

The author team includes a co-author who is a practitioner with many years of auditing experience and who is actively engaged in technical development and training in his firm. Our practitioner co-author brings valuable new content and insights on complex accounting issues. The new content benefits both advanced accounting students at undergraduate and postgraduate levels and practitioners alike. In today's dynamic landscape, this book also serves as a useful primer for practitioners who seek clarity of principles and processes in the application of accounting standards to complex accounting issues.

As accounting standards become more comprehensive and economic transactions become more complex, it is necessary for accounting professors to equip their students to deal with these issues with confidence. Inevitably, classroom time is limited but in many senior level courses, the more complex materials in the book may be used fruitfully by adopting professors to feature the topics as part of a project assignment. Accounting professors may ask their students to analyze the basis of conclusions on which the requirements are built or apply the principles to real-life cases. Examples of complex materials include reverse acquisitions, change in ownership interests in significant influence and joint control, common control and derivatives on own equity. The text provides the critical basis for further exploratory assignments.

We highlight below some of the special features in this text.

Focus on IFRS Standards that deal with complex accounting

As with the 3rd edition, this new edition continues to provide in-depth coverage of International Financial Reporting Standards that deal with complex business phenomena. These standards include IFRS 9 *Financial Instruments,* IFRS 3 *Business Combinations*, IFRS 10 *Consolidated Financial Statements*, IAS 27 *Separate Financial Statements*, IAS 28 *Investments in Associates and Joint Ventures,* IAS 21*, The Effects of Changes in Foreign Exchange Rates,* IFRS 2 *Share-based Payment* among others. New and enhanced features relating to the application of the above standards are highlighted below.

New and Enhanced Features

Business combinations, consolidation, associates and joint arrangements

- New illustrations and challenging end-of-chapter questions (Chapters 3, 4, 5, 6 and 7)
- Expanded material and in-depth explanations on changes in ownership interests with and without change in control (Chapter 7)
- New material and in-depth discussions on accounting for changes in ownership interests in joint arrangements (Chapter 7)
- New material on business combination without transfer of consideration, deemed acquisitions and deemed disposals (Chapter 7)
- Treatment of more complex intra-group transactions, including contract accounting under IFRS 15 (Chapter 5)
- Inclusion of the most recent amendments to existing standards on related topics – Sale or Contribution of Assets or Business between Investor and its Associate (Chapter 6)

Translation of Foreign Currency Transactions and Foreign Operations (Chapter 8)

- Illustrations on intercompany upstream and downstream transfers from/to foreign subsidiary.
- New challenging end-of-chapter questions

Financial Instruments (Chapters 9 and 10)

- Enhanced explanations and illustrations on classification and measurement under IFRS 9
- Detailed explanations and in-depth illustrations on interactions between interest income and expected credit loss
- Special issues associated with issuance of convertible bonds
- Enhanced explanations and illustrations on hedge accounting under IFRS 9
- Expanded explanation of the principles of IFRIC 16 Hedges of net investment in foreign operations
- New challenging end-of-chapter questions

Operating Segments (Chapter 1)

- New illustrations and end-of-chapter questions

Derivative contracts on own equity (Chapter 15)

- New chapter that deals with an area that is traditionally complex and difficult to account for
- Explore the rationale for such transactions
- Explains the relevant consideration and the accounting treatment

Comprehensive Approach to the Learning of Accounting Standards

The text is grounded in the three "Cs" of sound accounting pedagogy:

- *Concepts:* It is principles-based to enhance students' conceptual understanding of the underlying rationale of accounting requirements. It provides generous explanations of the "why's" of specific accounting treatments right down to the most detailed journal entry.
- *Context:* It emphasizes the importance of understanding the economics of and motivations for the specific transactions that are the subject of accounting rules. It provides an operational perspective to the accounting issues to enhance students' understanding of the purpose of the accounting standards, their interpretation and analysis of the accounting procedures and the implications of different methods of accounting.
- *Competencies:* It provides a rigorous coverage of the complex requirements of IFRS® Standards and IAS® Standards has many comprehensive illustrations on their application. Challenging end-of-chapter problems provide the necessary practice that future accountants need to develop professional expertise.

Coverage of Advanced Level Topics

The topics and the IAS and IFRS Standards covered in this text include:

Accounting for Business Combinations and Consolidation

IFRS 3 *Business Combinations*
IFRS 10 *Consolidated Financial Statements*
IFRS 11 *Joint Arrangements*
IAS 27 *Separate Financial Statements*

IAS 28 *Investments in Associates and Joint Ventures*

Translation of Foreign Currency Transactions and Foreign Operations
IAS 21 *The Effects of Changes in Foreign Exchange Rates*

Accounting for Financial Instruments
IFRS 9 *Financial Instruments*
IAS 32 *Financial Instruments: Presentation*

Accounting for Income Taxes
IAS 12 *Income Taxes*

Earnings Per Share
IAS 33 *Earnings per Share*

Accounting for Executive Stock Options and Other Share-Based Payments
IFRS 2 *Share-based Payment*

Risk-Reporting Disclosures
IFRS 7 *Financial Instruments: Disclosures*
IFRS 8 *Operating Segments*
IAS 24 *Related Party Disclosures*
IFRS 13 *Fair value measurement*

Organization of This Text

Chapter 1 explains how a firm's exposure to risks and its strategies to manage risks give rise to the need to provide information to external stakeholders on risks, risk management and their effects. It explains the business context of firms that gives rise to risks and the need for firms to measure and manage risks. The rest of the book is devoted to explaining and illustrating the financial reporting effects of two major strategies that firms use to manage risks.

Businesses manage risk through operating and financial policies. This text focuses on two major risk management strategies and their impact on financial reporting. The first strategy relates to corporate acquisition policies. Businesses manage or diversify risk through inter-corporate investments. Mergers and acquisitions give rise to accounting issues with respect to the measurement of the enlarged economic entity as a reporting unit. Chapters 2 to 7, part of Chapter 8 and Chapter 14, explain and illustrate the consequential impact of a firm's merger and acquisition strategies on the reported income statement and statement of financial position of the group entity.

The other corporate strategy that is critical to risk management relates to financial policies of firms. Financial policies of firms give rise to different motivations for acquiring financial assets and incurring financial liabilities and adopting hedging strategies. Accounting for these financial assets and financial liabilities and hedging activities requires the provision of information that investors need to evaluate the risk creation or risk mitigation that arises from a firm's financial policies. The rest of Chapter 8 and Chapters 9 and 10 provide in-depth coverage of how the effects of a firm's financial policies are accounted for in the financial statements. Chapters 12 and 13 focus on the consequential impact of a firm's financial policies on earnings per share and stock compensation expense, respectively. Chapter 11 deals with tax effects in general, with special focus on the tax effects of the transactions dealt with in the earlier chapters. Chapter 15 is a new chapter that deals with derivatives issued on own equity. Derivatives such as call and/or put options written on non-controlling interests is an area that is traditionally complex and difficult to account for. In this edition, we explore the rationale for such transactions, the considerations that should be brought to bear and the eventual accounting treatment.

Instructor Supplements

For this new edition, we have provided various supplemental materials to help instructors prepare and present the material in this text more effectively. The Online Learning Centre (**www.mheducation.asia/olc/tan4e**) provides instructors with the following teaching tools:

- Instructor's Manual
- Solutions Manual
- PowerPoint Presentation Slides
- Test Bank

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Pearl TAN Hock Neo
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BRIEF CONTENTS

1	Risk Reporting	*1*
2	Group Reporting I: Concepts and Context	*29*
3	Group Reporting II: Application of the Acquisition Method under IFRS 3	*69*
4	Group Reporting III: Accounting for Business Combinations and Non-Controlling Interests under IFRS 3 in Post-Acquisition Periods	*159*
5	Group Reporting IV: Consolidation under IFRS 10	*239*
6	Group Reporting V: Equity Accounting under IAS 28 and Joint Arrangements under IFRS 11	*327*
7	Group Reporting VI: Complex Consolidation Issues	*441*

8	Accounting for the Effects of Changes in Foreign Exchange Rates	*675*
9	Financial Instruments	*789*
10	Accounting for Derivatives and Hedge Accounting	*879*
11	Accounting for Taxes on Income	*979*
12	Earnings per Share	*1061*
13	Share-based Payment	*1097*
14	Common Control	*1143*
15	Derivative Contracts on Own Equity	*1191*

CONTENTS

The Authors vi

Preface viii

1 Risk Reporting 1

Introduction 2

Uncertainty, Risk, and Exposure 2

Risk Analysis and Measurement 3

Risk Reporting 4

Summary Metrics 14

Conclusion 19

Appendix 1A: Relationship between Risk and Value 21
Concept Questions 23
Problems 25

2 Group Reporting I: Concepts and Context 29
Introduction 30
Economic Incentives for the Preparation of Consolidated Information 32
Economic Motives for Entering into Intercorporate Arrangements 34
The Concept of Control 38
Process of Assessing Control 39
Attributes of Control 40

The Concept of Significant Influence 49
Accounting for Business Combinations 51
Consolidation Theories 52
Concept Questions 61
Exercises 63
Cases 65

3 Group Reporting II: Application of the Acquisition Method under IFRS 3 69
Introduction 70
Overview of the Consolidation Process 71
Business Combinations 73
The Acquisition Method 77
Determining the Amount of Consideration Transferred 80
Recognition and Measurement of Identifiable Assets, Liabilities, and Goodwill 84
Conclusion 110
Appendix 3A: Investment Entities 111
Appendix 3B: Illustration of a Reverse Acquisition 116
Appendix 3C: Determining What is Part of the Business Combination Transaction 121
Settlement of Pre-Existing Relationships 123
Remunerating Employees for Future Services 129
Transaction for Payment of Acquisition Costs 143
Questions 146
Case 147
Concept Questions 147
Problems 148

4 Group Reporting III: Accounting for Business Combinations and Non-controlling Interests under IFRS 3 in Post-acquisition Periods 159
Introduction 160

Elimination of Investment in a Subsidiary 160
Effects of Amortization, Depreciation, and Disposal of Undervalued or Overvalued Assets and Liabilities Subsequent to Acquisition 164
Accounting for Non-Controlling Interests Under IFRS 3 165
Goodwill Impairment Tests 202
Conclusion 205
Appendix 4A: Illustrations of Non-controlling Interests Measured as a Proportion of Acquisition-date Identifiable Net Assets 207
Appendix 4B: Accounting for Other Components of Non-Controlling Interests 214
Concept Questions 217
Research Questions 218
Problems 219

5 Group Reporting IV: Consolidation under IFRS 10 239
Elimination of Intragroup Transactions and Balances 240
Elimination of Realized Intragroup Transactions 242
Elimination of Intragroup Balances 246
Adjustment of Unrealized Profit or Loss Arising from Intercompany Transfers 248

Impact on Non-Controlling Interests Arising From Adjustments of Unrealized Profit or Loss 255
Special Considerations for Intercompany Transfers of Fixed Assets 264
Special Accounting Considerations When Intragroup Transfers are Made at a Loss 287
Conclusion 294
Appendix 5A: Examples of Complex Intra-Group Transactions 295
Concept Questions 301
Problems 302

6 Group Reporting V: Equity Accounting under IAS 28 Joint Arrangements under IFRS 11 327
Equity Method Versus Cost Method 328
Equity Method Versus Consolidation 332
An Overview of the Methodology of Equity Accounting 334
Performing an Analytical Check on the Investment in Associate Balance 336
Specific Procedures Relating to the Equity Method 337
Performing an Analytical Check of Consolidated Retained Earnings with Subsidiaries and Associates 349
Special Issues Relating to the Equity Method 375
Accounting for Joint Arrangements 376
Appendix 6A: Sale or Contribution of Assets or Business Between Investor and its Associate 387
Problems 393

7 Group Reporting VI: Complex Consolidation Issues 441
Indirect Ownership Interests 442

Dual Approach to Consolidation of Indirect Non-controlling Interests in Subsidiaries 448
Indirect Holding of Associates 481
Changes in Ownership Interests 488
Business Combination Achieved in Stages 489
Loss of Control 495
Changes in Ownership Interests without Change in Control 500
No Change in Significant Influence 507
Asset Transfers in More Complex Settings 508
Impact of Consolidation and the Cost and Equity Methods on Profit upon the Disposal of Subsidiaries 515
Overview of Consolidated Cash Flow Statements 516
Appendix 7A: Self-Study Illustrations on Complex Consolidation 525
Solutions 533
Appendix 7B: Change in Significant Influence 574
Acquisition of an Associate in Stages 574
Acquisition of Additional Interests in an Associate 583
Loss of Significant Influence 586
Investment in Associate Becomes Subsidiary 586
Partial Disposal of Associate While Maintaining Significant Influence 587
Retained Interest in Former Associate is a Financial Asset 590
Full Disposal of Associate 592
Deemed Acquisition or Disposal of Associates 593
Deemed Acquisitions 593
Deemed Disposals 602

Accounting for Acquisition of Additional or Partial Disposal of Interests in the Separate Financial Statements 606
Appendix 7C: Changes in Ownership Interests for Joint Arrangements 609
Changes in Ownership Interests in Joint Operations 609
Changes in Ownership Interests for Joint Ventures 628
Appendix 7D: Deemed Acquisitions and Business Combinations Achieved Without the Transfer of Consideration 632
Appendix 7E: Consolidated Cash Flow Statement Involving a Foreign Subsidiary 642
Problems 649

8 Accounting for the Effects of Changes in Foreign Exchange Rates 675
Introduction 676
Types of Foreign Exchange Rate Management Regimes 676
How Exchange Rates are Quoted 677
Spot Rate and Forward Rate 677
Types of Foreign Exchange Rate Exposures 679

Concept of Functional Currency 682
Foreign Currency Transactions of a Stand-alone Entity (IAS 21:20–26) 687
Translation of Foreign Currency Financial Statements 691
Goodwill Arising from the Acquisition of Foreign Subsidiaries 700
Equity Accounting of Foreign Associates 708
Special Issues 712
Evaluation of Translation Approaches 724
Appendix 8A: Remeasurement from a Foreign Currency to the Functional Currency 726
Appendix 8B: Translation Using a Trial Balance Format 732
Appendix 8C: Disposal of Foreign Operations 734
Partial Disposal of Foreign Operations 743
Partial Disposals of Foreign Associates or Joint Arrangements 746
Appendix 8D: Step-by-Step Versus Direct Method of Consolidation and Its Effects on Disposals 752
Concept Questions 758
Exercises 759
Problems 761

9 Financial Instruments: Classification, Recognition and Measurement 789
Introduction 790
Overview of Standards Pertaining to Financial Instruments 791
Scope of IAS 32 and IFRS 9 792
Classification of Financial Instruments 792
Debt Versus Equity 793
Compound Financial Instruments 795
Allocation of Transaction Costs 809
Share Repurchase 809
Recognition 810
Classification of Financial Assets 811
Business Model Test 812
Contractual Cash Flow Characteristics Test 813
Measurement 817

Amortized Cost and Effective Interest Rate Calculation 820
Measurement at Fair Value through Other Comprehensive Income 826
Measurement at Fair Value through Profit or Loss 831
Derecognition 832
Reclassifications Among Categories 836
Impairment of Financial Assets 839
General Approach 841
Measurement of Expected Credit Losses 845

Interaction Between Interest Revenue Computation and Recognition of Expected Credit Losses 847
Simplified Approach 855
Offsetting Financial Assets and Financial Liabilities 855
Disclosures 856
Evaluation of Fair Value as a Basis for the Measurement of Financial Instruments 858
Appendix 9A: Fair Value Measurement 859
Appendix 9B: Loan Loss Accounting 865
Concept Questions 868
Problems 870

10 Accounting for Derivatives and Hedge Accounting 879

Derivative Financial Instruments 880
Accounting for Derivatives 895
Hedging 900
Risks that Qualify for Hedge Accounting 902
Qualifying Hedging Instruments 903
Qualifying Hedged Items 904
Criteria for Hedge Accounting 908
Rebalancing 911
Classification of Hedging Relationships 913
Fair Value Hedge Accounting 913
Accounting for Time Value of Options 916
Accounting for Forward Element of Forwards 919
Cash Flow Hedge Accounting 929
Hedging Against Interest Rate Risk 936
Hedge of a Net Investment in a Foreign Entity 951
Option to Designate a Credit Exposure at FVTPL 955
Own Use Contracts 955
Discontinuation or Termination of Hedge Accounting 956
Hedges Where Hedge Accounting is Not Required 959
Evaluation of Hedge Accounting 959
Concept Questions 961
Exercises 961
Problems 965

11 Accounting for Taxes on Income 979

Introduction 980
Deferred Tax as a Liability and an Asset 982

Tax as an Expense 983

The Asset and Liability Approach for Determining Deferred Tax Liabilities 987
Determining the Cumulative Taxable Temporary Differences of Assets 988
Determining the Cumulative Deductible Temporary Differences of Liabilities 996
Overview of the Application of IAS 12 1002
Reconciliation and Analytical Check on Tax Expense in the Income Statement 1003
Temporary Differences Arising from Initial Recognition of Assets and Liabilities 1014
Assets Carried at Fair Value 1016
Accounting for Unused Tax Losses and Unused Tax Credits 1020
Presentation and Disclosures 1025
Tax Effects of Other Comprehensive Income and Items Taken Directly to Equity 1026
Special Issues 1029
Conclusion 1035
Appendix 11A: Undistributed Profits of Subsidiaries, Branches, Associates, and Joint Arrangements 1036
Appendix 11B: Special Considerations for Compound Financial Instruments 1039
Appendix 11C: Extracts of Annual Report Disclosures 1041
Concept Questions 1046
Problems 1046

12 Earnings per Share 1061
Introduction 1062
Computation of a Weighted Average Number of Shares 1065
Diluted Earnings per Share 1074
Concept Questions 1088
Problems 1088

13 Share-based Payment 1097
Introduction 1098
Equity-settled Share-based Transactions 1100
Cash-settled Share-based Transactions 1112
Share-based Payment Arrangements with a Cash Alternative 1117
Tax Implications of Share-based Payment Transactions 1125
Accounting Issues Relating to Employee Share Options 1127
Appendix 13A: Share-based Payment Transactions Among Group Entities 1129
Appendix 13B: Using Option Valuation Models to Estimate the Fair Value of Share Options 1132
Concept Questions 1135
Exercises 1136
Problems 1137

14 Common Control 1143
Introduction 1144
Common Control Exemption Under IFRS 3 1144
Non-controlling Interests in a Business Combination of Entities Under Common Control 1149
Accounting for Business Combinations under Common Control 1149

Application of Predecessor Method of Accounting 1151
Application of Acquisition Method under IFRS 3 1155

Acquisition of Non-controlling Interests Under Common Control 1155
Financial Statement Presentation 1160
Accounting for Business Combination Under Common Control by the Selling Entity 1165
Business Combinations Under Common Control in the Separate Financial Statements 1166
Group Reorganizations 1169
Utilization of New Company for Corporate Restructurings 1171
Accounting for Group Reorganizations 1173
Utilization of New Company for Spinning off Existing Business 1176
Accounting for Group Restructuring in Separate Financial Statements 1178
Concept Questions 1184
Problems 1185

15 Derivative Contracts on Own Equity 1191

Introduction 1192
Typical Characteristics and Types of Derivatives on Shares Held by Non-Controlling Interests 1192
Accounting for Derivatives Written on Shares Held by Non-Controlling Interests 1196
Accounting When Derivatives Provide Current Access to Returns Associated with Shares Held by Non-Controlling Interests 1200
Accounting When Derivatives do Not Provide Present Access to Returns on the Shares Held by Non-Controlling Interests 1209
Other Issues 1237
Next Step Forward 1240
Concept Questions 1241
Problems 1241

Index 1245

CHAPTER

1

Risk Reporting

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

LO1 Appreciate the broader economic context in which accounting information interacts with risks, valuation, and operating and financial strategies. The contextual background is relevant to understanding the specific accounting information in subsequent chapters;

LO2 Understand the interactions between uncertainty, risks, strategy, valuation, and information;

LO3 Compare the different modes of reporting — financial statement reporting, discretionary management disclosures, and summary metrics; and

LO4 Review an example of a financial risk metric.

INTRODUCTION

Until recently, financial reporting largely focused on the financial performance and financial position of an enterprise — how well a firm is doing and how effectively the custodians (the managers) have managed the resources of the firm. In recent years, however, the scope of financial reporting has expanded to include the risks faced by business enterprises. Some of the requirements on risk reporting have been mandated in accounting standards such as International Financial Reporting Standard 7 Financial Instruments: Disclosures (hereinafter referred to as IFRS® 7)[1] while other disclosures on risk are required by regulatory bodies in each national jurisdiction.

The impetus for greater disclosure on risks is a direct response to the collapse of large and reputable companies such as Lehman Brothers (an investment bank that failed during the 2008 financial crisis), Enron (once ranked the seventh largest company among Fortune 500 companies), Barings (one of the oldest and most reputable of British banks), and Long Term Capital Management. Some of these corporate collapses had been the result of trading in financial instruments, particularly derivatives and complex financial instruments for which the disclosure of risk information had been grossly inadequate.

While risks are often associated with market forces, they also arise endogenously from a firm's choice of business strategies. The challenge facing business firms is one of balancing risks rather than eliminating risks altogether. This is because a specific business strategy may eliminate one type of risk but may give rise to another type of risk. For example, a firm tries to reduce its competitive risk in its own markets by setting up manufacturing facilities in a low-cost country. In doing so, it may face new, and different, kinds of risks such as political risk and foreign exchange risk. Thus, the focus of business firms is not so much on risk reduction as it is on risk management. Indeed, one of the themes in modern business management is integrated risk management, which takes a comprehensive view of the different sources of risks facing a business and the trade-offs in risks arising from different risk management strategies of that business.[2]

UNCERTAINTY, RISK, AND EXPOSURE

The terms "uncertainty" and "risk" are often used interchangeably, although in the strategic management literature, they refer to different phenomena. There are a few interpretations of the term "uncertainty." Uncertainty can be defined as future possible states or the occurrence or non-occurrence of future events. For example, when we refer to interest rate uncertainty, we generally mean the possibility of increases or decreases in future interest rates. Uncertainty has also been defined as the unpredictability of organizational and environmental variables that give rise to risks (as discussed in Miller, 1992).[3] In our view, uncertainties give rise to risk.

Perspectives of Risk

There are two ways of looking at risk. One perspective views risk as the probability of a loss incurred as a result of management decision-making or external conditions. This perspective is sometimes referred to as "downside risk." The other perspective, which is found in finance theory, views risk as the variability in outcomes. "Volatility risk" is a term that is sometimes used to refer to this perspective of risk. Volatility risk contains both "potential for gain and exposure to loss."[4] According to this perspective, the greater the variability of possible outcomes, the greater is the risk. Thus, excessive gains should merit investigation as should excessive losses because the gains could be due to firms taking on greater risks. IAS® 37 Provisions, Contingent Liabilities and Contingent Assets (hereinafter referred to as IAS 37)[5] adopts this perspective of risk.[6]

These two perspectives of risk can be distinguished by using the familiar bell-shaped probability distribution curve. The first perspective, which may be called a one-sided or one-tailed perspective, focuses on the left-hand tail of the distribution. The second perspective, which may be called a two-tailed perspective, focuses on the dispersion of the curve. Both perspectives have their place in the risk management strategies of firms as well as in risk reporting.

It would not be meaningful to talk about risk without also considering the concept of exposure. Even if uncertainties exist with respect to a particular factor, such as interest rate movement, risk exists only if there is exposure to the uncertainty. For example, a firm with no debt has no direct exposure to interest rate risks, although there may be high uncertainty in the interest rate environment. However, even if a firm has no interest rate obligations, it may be indirectly affected by interest rate volatility. For example, increases in interest rates raise the cost of borrowing for companies and individuals, which in turn affect the cost of doing business or the discretionary purchasing power of consumers. Hence, the ripple effect of interest rate volatility may affect the profitability of firms that do not have interest rate obligations.

RISK ANALYSIS AND MEASUREMENT

In order to have a better understanding of a firm's risks, investors require information to analyze the risks affecting a firm's business, and assess the strategies and policies that management have in place to manage risks. There are many ways of analyzing risks. Finance theory distinguishes between systematic (or market) risks and unsystematic (or unique) risks. Systematic risks affect all firms and cannot be diversified away. They are also described as "market risks" as they affect all firms that are exposed to these risks. Unsystematic risks are also described as "idiosyncratic risks" or "firm-specific risks." Examples of market risks are foreign exchange risk, interest rate risk, and the price risk of commodities. Unsystematic risks are specific to individual firms and can be reduced or eliminated by a firm's strategies. Examples of unsystematic risks include the risks of product failure, litigation risk, credit problems,[7] poor liquidity, and business cyclical risks. Poor corporate governance and quality of human capital are also sources of unsystematic risks.

A proper analysis of risks facilitates their measurement. The measurement of risks is an important part of the management process although it is recognized that this is not practical or possible for many risks. Firms often use a variety of methods to measure different types of risks. The more common measures of risks include:

1. Accounting measures, for example, contingency provisions, or probability weighted measures such as fair values;
2. Accounting ratios, for example, liquidity ratio, debt-equity ratio, and interest coverage ratio; and
3. Non-accounting measures, for example, summary metrics such as the Z-score for predicting the risk of bankruptcy or value at risk metrics.

Some of these measures are discussed in greater detail later in the chapter.

RISK REPORTING

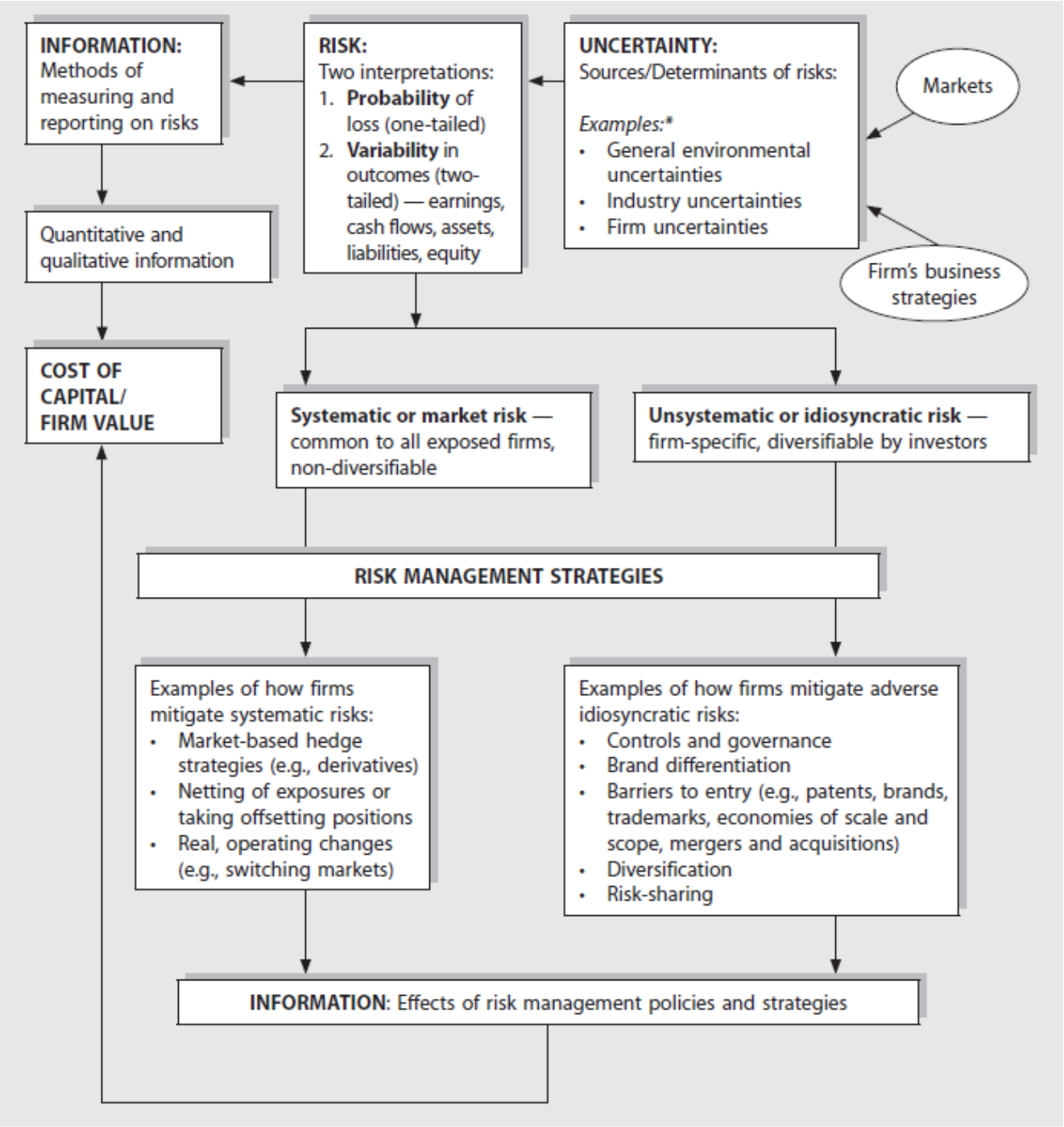
Business firms generally tend to focus on performance and business opportunities in their financial reports and are less open to discussion of their business and financial risks. However, there are a number of reasons why firms should be more transparent in their risk reporting. Those reasons are highlighted here.

1. If financial statements are to provide information that is useful and relevant to users, such information should be forward-looking and should aid users in assessing future earnings and cash flows. This includes the provision of information on a firm's risks and the effect of those risks on earnings and cash flows. Information on a firm's risks enables an investor to assess the nature, amount, and probability of the risks, and the mitigating effects of risk management strategies. This information will help the investor determine whether the firm's risk levels are tolerable, given the investor's risk appetite, and aid him or her in making a decision to buy, hold, or sell an investment.
2. The amount and quality of information on a firm's risks may have an effect on a firm's cost of capital (and ultimately a firm's value). Finance theory postulates that there is a relationship between risk and cost of capital (see Appendix 1A). This relationship is clearly reflected in the rating of corporate bonds. Corporate bonds of investment grade (grade A and above) are issued at a higher price while non-investment grade bonds (or junk bonds) are issued at a steep discount. The higher the perceived risk, the higher is the required rate of return or cost of capital. Investors' perceptions of a firm's risks may be influenced by the firm's risk disclosures. Thus, a firm that discloses inadequate information on its risks may have to pay a higher risk premium (higher cost of capital) as, in the eyes of the investors, the lack of information is a source of additional uncertainty regarding its future earnings and cash flows. On the other hand, a firm that provides adequate information on its operating and financial risks and its risk management strategies is more likely to avoid this problem. Thus, the cost of capital should be lower for a firm that provides adequate risk information compared to a firm with similar risks that provides inadequate risk information.[8] Research has examined the relationship between financial statement disclosure (including disclosure of information on risk) and the cost of capital, and there is some evidence to support such a relationship.[9]
3. Not all investors are equally informed. For example, analysts have access to key managers of the firms that they cover. From their discussions and site visits, they may be able to obtain additional information that is usually not available to other investors. This additional information is then passed on to their clients. If this additional information is provided to all investors, it should result in a "level playing field" for all types of investors.
4. Adequate risk information contributes to the protection of investors by drawing their attention to the risks that the firm is exposed to. In the process, management's accountability is enhanced.
5. Better risk disclosure may lead to better risk management. Managers are more likely to pay more attention to their risk management processes if they have to report on the risks that their firm is exposed to.

page 5

The interactions between uncertainty, risk, information, and cost of capital (and firm value) are summarized in Figure 1.1.

FIGURE 1.1 Interactions between uncertainty, risk, information, and value



* Miller (1992), as cited in footnote 2.

Risk Measurement and Reporting by Business Firms

As mentioned earlier, there are a number of ways to measure risk. Generally, firms use both accounting and non-accounting measures of risk. Accounting measures include point or range estimates, for example, provision for loss, fair values and aggregate measures such as debt-equity ratio. Non-accounting measures include summary metrics such as value at risk measures. Similarly, methods of risk reporting vary. These are generally categorized into quantitative and qualitative methods. For example, the Securities Exchange Commission (SEC) in the United States issued Financial Reporting Requirement (FRR) 48 that requires firms listed on the New York Stock Exchange to choose

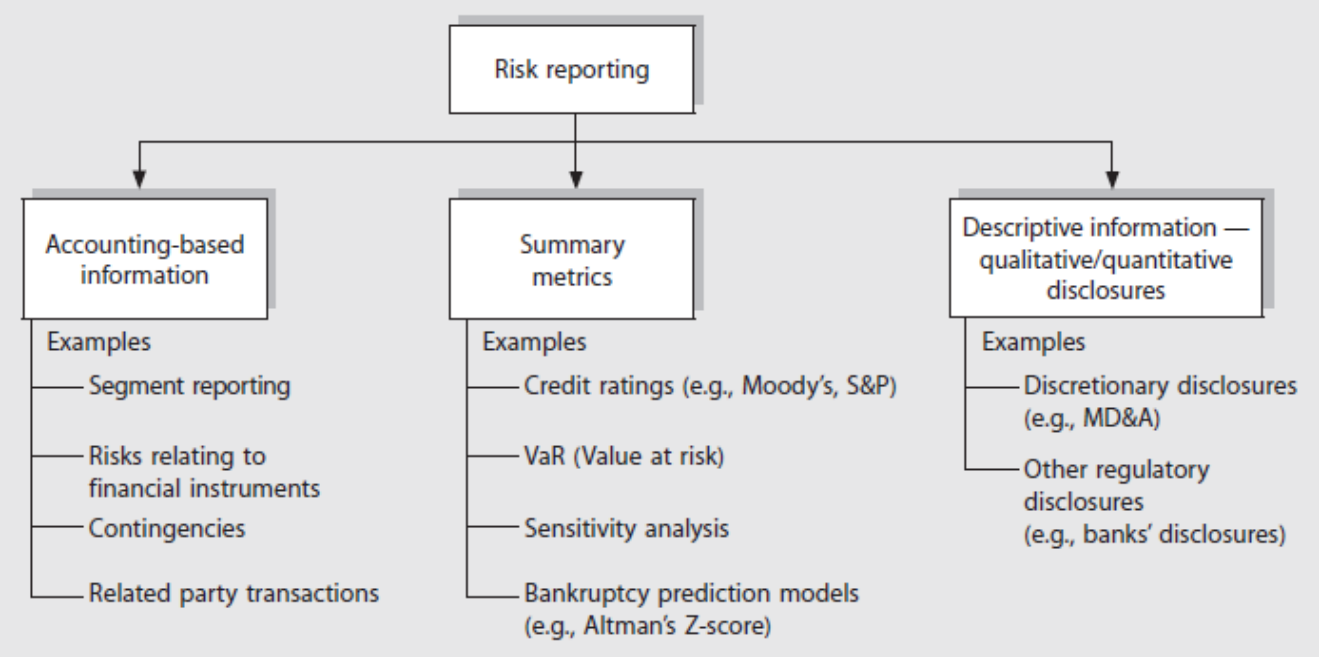
among three formats of reporting on market risks: sensitivity analysis, value at risk, and the tabular format. The first two are quantitative measures while the last is a qualitative measure.

For our purpose, we classify risk information into the following three categories (see Figure 1.2):

1. *Accounting-based information*, for example, statement of financial position disclosures, cash flow impact, and footnote disclosures;
2. *Summary metrics* such as:
   - Value at risk (VaR)
   - Sensitivity analysis
   - Financial ratios
3. *Descriptive information*, for example, Chairman's Statement and Operational Review or Management Discussion and Analysis (MD&A).

page 6

FIGURE 1.2 Modes of risk reporting



page 7

Accounting-based Measures of Risk

International Financial Reporting Standards (IFRS® Standards) and International Accounting Standards (IAS® Standards) that require information useful for risk assessment include the following:

1. IFRS 8 *Operating Segments*[10]
2. IAS 24 *Related Party Disclosures*
3. IAS 37 *Provisions, Contingent Liabilities, and Contingent Assets*
4. IFRS 7 *Financial Instruments: Disclosures*

IFRS 8: Operating Segments

Segment reporting is the presentation of disaggregated financial information by operating segments. The key principle is that an entity should disclose information so that users can evaluate the nature and effects of its business activities and its economic environment. IFRS 8 requires an entity to report financial and descriptive information about its reportable segments.

IFRS 8 Operating Segments (hereinafter referred to as IFRS 8)[11] are applicable to enterprises whose equity or debt securities are traded in a public market or an over-the-counter market, and by enterprises that are in the process of issuing equity or debt securities in the public securities market. In a group of companies, segment information needs to be presented for consolidated financial statements only. An operating segment needs to be identified, as compared with the previous standard IAS 14 *Segment Reporting* (hereinafter referred to as IAS 14),[12] which requires identification of both business and geographical segments.

page 8

What Is an Operating Segment? IFRS 8 paragraph 5 identifies the following characteristics of an operating segment:

1. It is a source of revenue and business activity. An operating segment is a business component in an entity that earns revenue and incurs expenses (including revenues and expenses relating to transactions with other components of the same entity). IFRS 8 includes "start-up" operations as operating segments;
2. It is subject to regular review by the entity's chief operating decision maker: the results and performance of the operating segment are critical to determine allocation of resources to the segment. The chief operating decision maker identifies a function to allocate resources to and assess performance of the entity's operating segments. The person could be the entity's chief executive officer, chief operating officer, or a group of executive directors; and
3. Discrete financial information on the operating segment is available.

Aggregation of Operating Segments for Reporting Purposes Operating segments that exhibit similar economic characteristics may be aggregated in accordance with IFRS 8 paragraph 12. The economic characteristics include:

1. The nature of the products and services;
2. Geographical areas;
3. The nature of the production processes;
4. Customer type or class;
5. Methods of distribution; and
6. Regulation governing that segment, for example, banking.

What Is a Reportable Operating Segment? Reportable segments are operating segments or aggregations of operating segments that meet specified criteria. Operating segments are components of an entity about which separate financial information is available, and is evaluated by the chief operating decision maker in deciding the allocations of resources and in assessing performance (IFRS Foundation IFRS 8 Technical Summary).

Once identified, an operating segment needs to be reported only if it meets any of the following quantitative thresholds (IFRS 8:13):

1. Revenue test: the revenue of the operating segment including intersegment sales is 10% or more of combined revenue, both internal and external, of all operating segments.
2. Profit or loss test: the absolute amount of its reported profit or loss is 10% or more of the greater, in absolute amount, of (a) the combined reported profit of all operating segments that did not report a loss and (b) the combined reported loss of all operating segments that reported a loss.
3. Assets test: the assets of the operating segment are 10% or more of the combined assets of all operating segments.

page 9

IFRS 8 permits management to report an operating segment that does not meet any of the quantitative thresholds if management believes that information about the segment would be useful to users of the financial statements.

Management override also extends to those segments that were identified as reportable segments in the immediately preceding period but are of a continuing significance, even if they no longer meet the quantitative criteria for reporting.

If the total external revenue reported by operating segments constitutes less than 75% of the entity's revenue, additional operating segments must be identified as reportable segments, even if they do not meet the quantitative thresholds specified above.

Not every part of an entity is necessarily an operating segment or part of an operating segment. An example is corporate headquarters that do not earn revenues (IFRS 8 paragraph 6).

Practical Limit to Number of Reportable Segments Although IFRS 8 recognizes that no precise limit can be determined on the number of reportable segments, the standard suggests that an entity should consider whether a practical limit has been reached if the number of reportable segments exceeds ten.

Disclosures The following disclosures are necessary:

1. Factors that determine the identification of reportable operating segments;
2. Segment profit or loss, including detailed disclosures on revenues and expenses, as prescribed in IFRS 8 paragraph 23;
3. Segment assets (if this information is regularly provided to the chief operating decision maker);
4. Segment liabilities (if this information is regularly provided to the chief operating decision maker);
5. Basis of measurement; and
6. Reconciliations of the totals of segment revenues, reported segment profit or loss, segment assets, segment liabilities, and other material segment items to the entity's reported amounts.

Illustration 1.1 shows how reportable segments may be identified and disclosed.

ILLUSTRATION 1.1 Operating Segments

Electronic Grocers Ltd (EGL) sells groceries to its customers through its online platform.

It also provides advertising services for some of the products that it sells. Supporting the e-commerce activities are the in-house logistics and IT support services. EGL identifies four units as its operating segments: Retail, Advertising, Logistics and IT Support. The information relating to each segment for the year ended 31 December 20x1 are shown below.

	Retail	Advertising	Logistics	IT Support	Total
External sales	1,300,000	180,000	-	-	1,480,000
Internal sales	-	-	130,000	15,900	145,900
Total sales	1,300,000	180,000	130,000	15,900	1,625,900
External assets	2,300,000	60,000	66,000	120,000	2,546,000
Intra-group assets	-	-	34,000	9,000	43,000
Total assets	2,300,000	60,000	100,000	129,000	2,589,000
External net profit/(loss)	350,000	45,000	5,000	(30,000)	370,000
Internal net profit/(loss)	(30,000)	(15,000)	25,000	20,000	-
Net profit (loss)	320,000	30,000	30,000	(10,000)	370,000
External liabilities	1,690,000	25,000	34,000	60,000	1,809,000
Intra-group liabilities	28,000	15,000	-	-	43,000
Total liabilities	1,718,000	40,000	34,000	60,000	1,852,000

Required:

(1) Identify the operating segments in accordance with the quantitative criteria of IFRS 8.
(2) Show the reconciliation of operating segment information with the reported entity totals.

Part (1): Identification of operating segments

	Retail	Advertising	Logistics	IT Support	Total
External sales	1,300,000	180,000	-	-	1,480,000
Internal sales	-	-	130,000	15,900	145,900
Total sales	1,300,000	180,000	130,000	15,900	1,625,900
% of Total sales	80%	11%	8%	1%	100%
External assets	2,300,000	60,000	66,000	120,000	2,546,000
Intra-group assets	0	-	34,000	9,000	43,000
Total assets	2,300,000	60,000	100,000	129,000	2,589,000
% of Total assets	89%	2%	4%	5%	100%
External net profit/(loss)	350,000	45,000	5,000	(30,000)	370,000
Internal net profit/(loss)	(30,000)	(15,000)	25,000	20,000	-
Net profit (loss)	320,000	30,000	30,000	(10,000)	370,000
(A)					380,000
(B)					(10,000)
Higher of (A) and (B)					380,000
% of Higher of (A) and (B)	84%	8%	8%	3%*	

(A) Combined reported profit of all operating segments that did not report a loss
(B) Combined reported loss of all operating segments that reported a loss
* In absolute terms

	Retail	Advertising	Logistics	IT Support	Total
Reportable segment	**Yes**	**Yes**	**No**	**No**	
The next test is to determine if total external revenue of reportable segments is greater than or equal to 75% of entity revenue					
External sales for reportable segments	1,300,000	180,000			1,480,000
% external sales for reportable segments					100%
Total external revenue of reportable segments greater than or equal to 75% of entity revenue					**Yes**

The information on segment liabilities is not used in identifying reportable segments but is used for disclosures.

	Retail	Advertising	Logistics	IT Support	Total
External liabilities	1,690,000	25,000	34,000	60,000	1,809,000
Intra-group liabilities	28,000	15,000	-	-	43,000
Total liabilities	1,718,000	40,000	34,000	60,000	1,852,000

Part (2): Reconciliation with entity reported figures

Segment revenues and reconciliation with entity revenues

	Retail	Advertising	Other segments	Elimination	Entity
External sales	1,300,000	180,000			1,480,000
Internal sales			145,900	(145,900)	-
Total	1,300,000	180,000	145,900	(145,900)	1,480,000

Segment assets and reconciliation with entity assets

	Retail	Advertising	Other segments	Elimination	Entity
Total assets	2,300,000	60,000	229,000	(43,000)	2,546,000

Segment profit and reconciliation with entity net profit

	Retail	Advertising	Other segments	Elimination	Entity
Net profit	320,000	30,000	20,000	-	370,000

Segment liabilities and reconciliation with entity liabilities

	Retail	Advertising	Other segments	Elimination	Entity
Total liabilities	1,718,000	40,000	94,000	(43,000)	1,809,000

IAS 24: Related Party Disclosures

The overriding principle with respect to related parties in IAS 24 *Related Party Disclosures* (hereinafter referred to as IAS 24)[13] is that an entity's financial statements should contain disclosures to highlight the existence of related parties and transactions and outstanding balances with such parties. There is the possibility that information on transactions involving related parties may not be readily available and the financial statements may not provide a reliable guide to the assessment of future earnings and cash flows. Anecdotal evidence exists of management using related parties to siphon off funds illegally or to commit fraud. IAS 24 disclosures aim to facilitate an assessment of the risks in connection with related party transactions.

Related parties are defined in terms of specific categories (IAS 24:9). IAS 24 defines related parties to include subsidiaries (presence of control), associates (presence of significant influence), joint ventures (presence of joint-control), party in a post-employment benefit plan, key management, and close family members of key management and entities in which key management or close family members of key management have control, joint-control, or significant influence.

IAS 24 defines close family members as those who may be expected to influence, or be influenced by, that related party in their dealings with the entity. Close family members may include:

1. The related party's domestic partner and children;
2. Children of the related party's domestic partner; and
3. Dependants of the related party or the related party's domestic partner.

Key management personnel refer to those individuals who have the authority and responsibility to directly or indirectly plan, direct, and control the activities of the entity. Key management personnel include any director of that entity. IAS 24 considers non-executive directors as "key management personnel."

The disclosures include related party relationships where control exists (even if no transactions exist). A related party transaction is defined as a transfer of resources, services, obligations between a reporting entity and a related party, regardless of whether a price is charged. If transactions exist, the information necessary to understand the potential effect of the relationship on the financial statements must be disclosed. Such information include the nature of the related party relationship, amount of the transactions, outstanding balances, including commitments ("arm's length" terms and conditions, including any security, nature of considerations, guarantees), provisions of doubtful debts and expenses recognized in relation to the doubtful debts of these outstanding balances, the relationships between parents and subsidiaries, name of the entity's parent and the ultimate controlling party (if any), and compensation of key management personnel (including short-term employee benefits, post-employment benefits, other long-term benefits, termination benefits, and share-based payment).

Separate disclosures are required for the parent, entities with joint control or significant influence over the entity, subsidiaries, associates, joint ventures, key management personnel of the entity, and other related parties and

provisions of key management personnel services (IFRS Foundation, IAS 24 *Related Party Disclosures*). This excludes disclosures of key management compensation paid by management entities to their own employees.

Special exemptions apply to disclosures of related party transactions, balances and commitments with a government that has control, joint control or significant influence over the reporting entity (IAS 24:25). The exemption also extends to transactions with related parties that are subject to control, joint control of significant influence of the same government. However, special disclosures apply when the exemptions are invoked (IAS 24:26).

IAS 37: Provisions, Contingent Liabilities, and Contingent Assets

Information provided under IAS 37 alerts the user to the possibility of a loss occurring in some future period as a result of some past event(s). Contingencies are characterized by a lack of a reliable estimate of the future loss. The future loss has to be assessed as to its likelihood of occurrence. If the loss is probable (highly likely), a provision should be made and a liability should be recognized in the statement of financial position. On the other hand, if the loss is considered possible but not probable nor remote, a note disclosure is required. The disclosure should estimate its financial effect after considering the inherent risks and uncertainties and indicate the uncertainties relating to the amount or timing of any outflow and the possibility of reimbursement.

IFRS 7: Financial Instruments: Disclosures

The information required to be disclosed under IFRS 7 pertains to specific risks relating to financial instruments and risk management policies and hedging activities.

For each type of risk arising from financial instruments, IFRS 7 requires the disclosure of both qualitative and quantitative information. Qualitative disclosures focus on management's objectives, policies, and strategies for managing those risks. Quantitative disclosures provide information on the entity's exposure to specific risks based on information provided internally to the entity's key management personnel. Thus, these disclosures provide an overview of the entity's use of financial instruments and the exposures to risks they create.

Qualitative Information For each type of risk, the following need to be disclosed (IFRS 7:33):

1. The entity's exposures to that particular risk and how they arise;
2. The entity's objectives, policies, and processes for managing the risk and the methods used to measure the risk; and
3. Any changes in (1) or (2) from the previous period.

Quantitative Information The quantitative information that is required to be disclosed by an entity includes the following (refer to IFRS 7 paragraphs 34 to 42 for a full list of required disclosures):

1. Summary quantitative data about its exposure to each type of risk arising from financial instruments at the reporting date. This disclosure is to be based on the information provided internally to key management personnel of the entity (as defined in IAS 24).
2. The entity's maximum exposure to credit risk, aging analysis of financial assets that are past due but not impaired, and analysis of financial assets that are individually impaired.
3. The nature and carrying amount of assets relating to collateral and other credit enhancements such as guarantee obtained.
4. A maturity analysis of the entity's financial liabilities and the liquidity risk relating to such liabilities.
5. A sensitivity analysis of each type of market risk to which the entity is exposed and the methods and assumptions in preparing the sensitivity analysis.

The information is deemed necessary to enable users of financial statements to assess the extent of risk related to financial instruments. Also important is a discussion of management's policies for controlling the risks associated with financial instruments, including policies on matters such as hedging of risk exposures, avoidance of undue concentrations of risk, and requirements for collateral to mitigate credit risk.

There are various risk types: market risk, credit risk, and liquidity risk. Market risks could be due to price (for example, equity, commodity, real estate) risks, interest rate risks, foreign exchange risks, and volatility risks. Credit risks could be due to issuer or counterparty risks. Issuer risks relate to the risks of issuers of bonds and borrowers of loans defaulting. Counterparty credit risk is the risk of one contractual party to a financial transaction defaulting prior to settling its obligations to the other contractual party. Liquidity risk is the risk arising from the inability to readily realize the value of an asset in cash.

Many of the risks interact with one another. For example, in a derivative transaction, the counterparty credit risk is a function of market risks and credit risks. A financial instrument may include a combination of different types of market risks. For example, the risk in a foreign exchange forward rate is a function of foreign exchange spot risk and interest rate risk. A foreign exchange option contains foreign exchange spot risk and volatility risk. The risk of a structured product such as an equity-linked deposit may include equity risk, interest rate risk and counterparty risk. Another structured product, dual-currency deposit, contains foreign exchange option risk, interest rate risk, and counterparty risk.

IFRS 7 requires disclosures of quantitative data of financial risk exposures based on internal management information. The above risks of financial instruments may be summarized in a number of ways.

SUMMARY METRICS

In the light of disclosure requirements of IFRS 7, accountants must be familiar with the use of off-balance-sheet summary metrics that provide a quantitative measure of risk, usually presented in a single composite figure.

Examples of summary metrics include:

1. Value at risk;
2. Sensitivity analysis;
3. Credit risk;
4. Liquidity risk; and
5. Multivariate models such as bankruptcy prediction models.

A detailed discussion of summary metrics is outside the scope of this book. However, this chapter provides a discussion of the essence of each of the above five metrics.

Value at Risk

Originally developed by JPMorgan,[14] VaR is a probabilistic measure of the potential loss that could be incurred by a firm's portfolio as a result of market risk. Risk is measured in terms of volatility of variables such as interest rate, foreign exchange rate, stock market indices, or the prices of commodities. VaR estimates the maximum loss that can be suffered on a portfolio under *normal* market conditions over a specified time interval and within a given confidence level. For example, at a 95% confidence level, a portfolio of $100 million has monthly returns with a maximum loss of 2.0%. Hence, the worst-case monthly loss in absolute terms suffered by the portfolio at a 95% confidence level under normal market conditions is $2 million. There is a 5% probability that the loss will exceed the VaR.

VaR provides an estimate of potential losses on a portfolio of assets that are marked-to-market. It does not provide information on the composition of the portfolio or the potential maximum loss on the individual components of the portfolio. However, it takes into account the diversification effect of different assets. Losses that are greater than that indicated by VaR are considered to be due to extraordinary events that have a very low probability of occurrence. Information required to determine VaR includes:

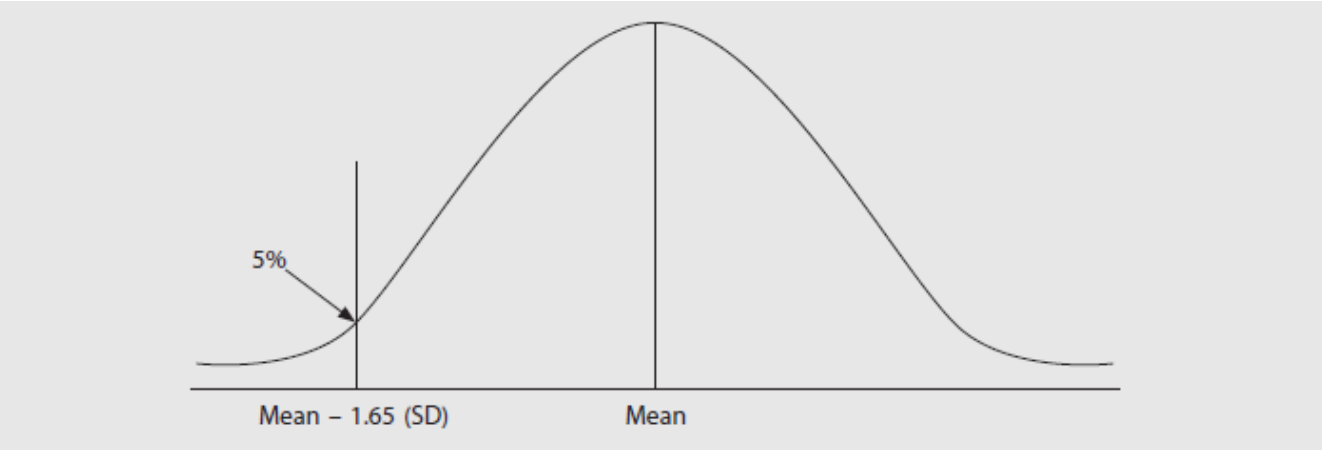
1. Expected mean change in portfolio value, defined as
$$\frac{\text{Expected portfolio value} - \text{Current portfolio value}}{\text{Current portfolio value}}$$
2. Distribution of portfolio values — this can be determined from historical simulation, assumed normal distribution or Monte Carlo simulation.[15]
3. Expected standard deviation (or variance) of change in portfolio value.

Assuming a normal distribution shown in Figure 1.3, VaR, as a measure of loss in portfolio returns or portfolio value, can be computed using the expected mean change and expected standard deviation.

$$\text{VaR} = \left[\begin{matrix}\text{Expected mean} \\ \text{return in a portfolio}\end{matrix} - \left(Z \times \begin{matrix}\text{Standard deviation of} \\ \text{change in portfolio returns}\end{matrix}\right)\right]$$

$$\text{VaR} = \left[\begin{matrix}\text{Expected mean change} \\ \text{in portfolio value}\end{matrix} - \left(Z \times \begin{matrix}\text{Standard deviation of} \\ \text{change in portfolio value}\end{matrix}\right)\right]$$

FIGURE 1.3 Standard normal distribution



where Z is the number of standard deviations below the mean in a normal distribution, given a certain probability. Changes in portfolio values less than or equal to 1.65 (2.33) standard deviations below the mean has 5% (1%) probability of occurring. In other words, 95% (99%) of the time, the changes in portfolio values are likely to exceed the VaR cutoff.

To illustrate, we have a one-asset portfolio (current market value is $10 million) that has an expected return of 18% and a standard deviation of 15%. Assume that the returns follow a normal distribution. At 95% confidence level, the VaR is 1.65 standard deviation from the expected value or 24.75% away from the expected value. The VaR at 95% confidence level is 18% − 24.75% = −6.75%. There is a 5% chance that the portfolio will lose more than 6.75% of its value. In dollar terms, the VaR is $675,000.[16]

Most portfolios have more than one asset. When two or more assets are present in a portfolio, the VaR of the portfolio is affected by the variances of the individual assets and the covariance among the assets. Portfolio risk can be reduced through combining assets with a low covariance (or correlations) or by having a large number of assets (because of the diversification effect). The following example illustrates the calculation of VaR of a two-asset portfolio. The main parameters of the portfolio are as follows:

	Market value	Expected return	Variance
Asset A	$60 million	13%	0.025
Asset B	$40 million	18%	0.035

The covariance of asset A and asset B is 0.03.

First, calculate the expected return of the portfolio, which is the sum of individual returns weighted by the proportion of total market value.

$$\text{Expected return (\%)} = (0.6 \times 0.13) + (0.4 \times 0.18) = 0.15$$

Next, calculate the standard deviation (SD) of the portfolio.[17]

$$\begin{aligned}\text{Variance of portfolio} &= [(0.025 \times 0.6^2) + (0.035 \times 0.4^2) + (2 \times 0.6 \times 0.4 \times 0.03)] \\ &= 0.029\end{aligned}$$

$$\text{Standard deviation of portfolio} = \sqrt{0.029} = 0.170294$$

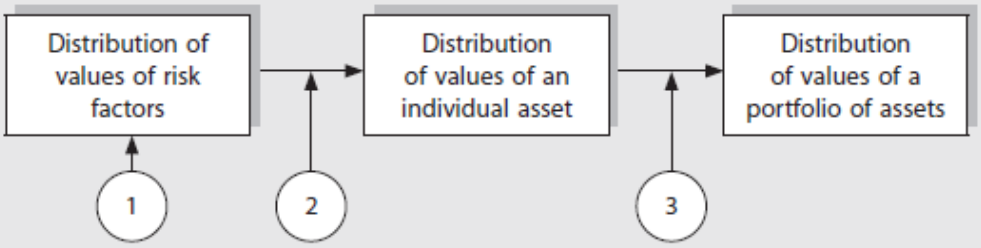
At the 95% confidence level, the VaR of the portfolio is

$$[0.15 - (1.65 \times 0.170294)] = -0.131$$

There is a 5% probability that the portfolio will lose more than 13.1% of its value. In dollar terms, the VaR loss is $13.1 million.

VaR Framework in a Nutshell Figure 1.4 summarizes the framework in determining the VaR.

FIGURE 1.4 VaR Framework



1. The distribution of values of risk factors can be derived using one of three methods:
   (a) Historical simulation
      - Assumes the same distribution as reflected in historical data sets.
   (b) Normal distribution (Parameter-based model)
      - Assumes a symmetrical distribution of the values.
      - Only the mean and standard deviation of the distribution need to be known.
      - Allows prediction of distance from mean (e.g., 5% at the tail end is 1.65 standard deviations away from mean).
   (c) Monte Carlo simulation
      - A mixture of real and random numbers is used to estimate values.
2. The process of interpreting the effects of risk factors on individual values may be through an asset valuation model or a combination of models, or through the use of judgment.
3. The combination of individual values into a portfolio of asset values will require weights for each individual asset. Expected portfolio returns are the sum of the expected weighted returns of each individual asset. Expected portfolio variance is determined mathematically using the variance of each individual asset and weights for each asset.

Variants of VaR VaR was originally developed by JPMorgan for its internal risk reporting and risk management use. It quickly became popular and is now extensively used by financial institutions. The main reason for its popularity among financial institutions is that the assets of these institutions are mostly market-to-market, which makes them highly "VaR-friendly." The use of VaR among non-financial institutions is less common because the bulk of their assets are carried at historical cost and are used for productive purposes rather than trading. However, variants of VaR, namely earnings at risk and cash flow at risk, are often used. The difference between VaR and cash flow at risk is that while VaR measures loss based on the present value of all future cash flows, cash flow at risk measures the undiscounted cash flows. Earnings at risk, as the term implies, measures loss in a company's earnings arising from changes in a market variable.

A Note of Caution Regarding VaR Care should be exercised when using and interpreting VaR measures. The use of a highly aggregated measure to report risks results in a loss of critical information that is necessary to evaluate risks. Different methodologies for estimating VaR and different assumptions relating to time horizon and confidence level can result in highly different VaR estimates. Finally, VaR is generally based on normal market conditions and does not address the risk of extreme market conditions.[18] For example, in the credit crisis of 2007 and 2008, VaR failed to predict the loss suffered by financial institutions in extreme market conditions, which may be several standard deviations from the mean.

Sensitivity Analysis

Sensitivity analysis is a method of measuring exposures to market risks. Sensitivity analysis measures the potential loss (or gain) in future earnings, fair values, or cash flows of market-sensitive instruments resulting from hypothetical changes in interest rates, foreign exchange rates, commodity prices, and other market rates or prices over a specified time period (FRR 48:31). The sensitivity of net interest income to interest rate movements is an example. However,

sensitivity analysis does not provide information as to the level of probability of the loss (or gain). If the number of assets (or variables) is very large, it may not be practical to provide information on each and every asset (or variable). Another shortcoming of sensitivity analysis is that it is essentially a point estimate, and provides no information on the variance of the distribution.

Credit risk

While VaR is a summarized measure of market risk, the credit risk to borrowers can be summarized into loan provisions and impaired loans by types of customers (e.g., wholesale versus retail), countries, industries, or single-name groups. The debt management process can be described (e.g., watchlist process — reflecting different levels of credit conditions) and the problem loans can be summarized by arrear provision status and the period when the loan has been in arrears. The credit risk management organization, in terms of credit risk policies, risk appetite, credit risk control, responsibilities, and credit risk frameworks to monitor concentration risks by single name, product/asset class, sector, and country are also disclosed.

Liquidity risk

The assets and liabilities can be tabulated by contractual cash flow maturity bands. This reflects the funding gaps by maturity bands. The funding sources such as short-term funding, long-term debt issuance, and secured (i.e., collateralized) funding are disclosed. These information provide indicators on the liquidity risk of the firm.

Multivariate Models

The ultimate risk a business could face is, of course, bankruptcy. In recent years, a number of researchers have come up with models using financial ratios to predict bankruptcy. These models typically compare the profiles of actual bankrupt and non-bankrupt firms to determine a critical value of a financial attribute/ratio (e.g., debt-equity ratio) that clearly separates bankrupt from non-bankrupt firms. The objective is to use these critical values to predict which firms are at higher risk of becoming bankrupt. When multiple financial attributes/ratios are included in the model, weights are assigned to each attribute through a statistical process called multiple discriminant analysis. An example is Altman's original Z-score[19] formulated for publicly listed manufacturing firms as follows:

$$\begin{aligned}\text{Z-score} = {} & 1.2\ (\text{Working capital/Total assets}) + 1.4\ (\text{Retained earnings/Total assets}) \\ & + 3.3\ (\text{Earnings before interest and taxes/Total assets}) \\ & + 0.6\ (\text{Market value of equity/Book value of liabilities}) + 1.0\ (\text{Sales/Total assets})\end{aligned}$$

Z-score	Diagnosis
<1.81	"Bankrupt"
1.81 ≤ Z-score ≤ 2.99	"Grey area"
>2.99	"Non-bankrupt"

One criticism of bankruptcy prediction models is that they generally lack a conceptual underpinning. They do not provide a theory that explains why firms go bankrupt. Another weakness of the models is that they are based on a sample of firms from a particular time period and industry. As such, the applicability of the models to other time periods and industries is questionable.

CONCLUSION

It is appropriate to conclude this chapter with a discussion on the issues that firms should consider with regard to risk reporting. The issues are:

1. What definition of risk should a firm adopt? Should it focus on risk of loss or volatility risk?
2. Should sensitive information be disclosed?
3. What role does judgment play in risk reporting?

In reporting risks, a firm has to decide whether to focus on adverse outcomes or the possible variations in its earnings or cash flows. Admittedly, this is a judgmental issue, although regulatory agencies may provide some guidance. For example, the SEC requires US listed firms to report on the risk of loss but not the possibility of gain.[20] Even financial reporting standards tend to focus on loss; for example, IAS 37 requires the recognition of probable losses but not gains. In our view, if investors are to properly assess a firm's risks, they should be provided information on the potential for gains as well as losses. Investors may get a misleading impression if a firm reports only the downside risks and ignores the upside potential.

Business firms generally are reluctant to disclose information that is considered commercially sensitive. For example, disclosing sensitive information on the potential loss from an ongoing litigation case might compromise the outcome of the case. By not disclosing the potential loss, the firm is effectively leaving it to the investors to make their own estimates, which could also lead to equally damaging consequences. Investors often tend to overreact in a knee-jerk fashion on bad news. Thus, management has to weigh the costs of greater disclosure (which could adversely affect a firm's competitive advantage and earnings) against the benefits of reduced uncertainty to investors (in the form of a lower risk premium and a lower cost of capital).

Last, but not least, in its risk reporting, a firm has to give proper recognition to the role of judgment in some of the disclosures. Risk metrics such as VaR (or its equivalent, earnings at risk) are not substitutes for good management, experience, and judgment. These metrics provide the methodology for measuring risks but the outcome is flawed if the underlying assumptions are flawed.

Generally, the provision of information on risks involves the judgments of regulators, companies, and market participants. Regulators such as the IASB or the SEC determine the critical information that needs to be disclosed on risks. For example, the financial risk disclosures in IFRS 7 are based on what the IASB perceives as being important to users' decision-making. Companies apply their judgment to implement the disclosure requirements as prescribed by the accounting standards. For example, the level of detail in disclosing financial risks is discretionary; firms may choose to withhold more detailed information than they deem as proprietary. Market participants apply judgment in their selection of information sources and place more weight on information that they deem credible and independent.

APPENDIX 1A

Relationship between Risk and Value

The relationship between risk and value of equity can be expressed in the form of a valuation model as follows:

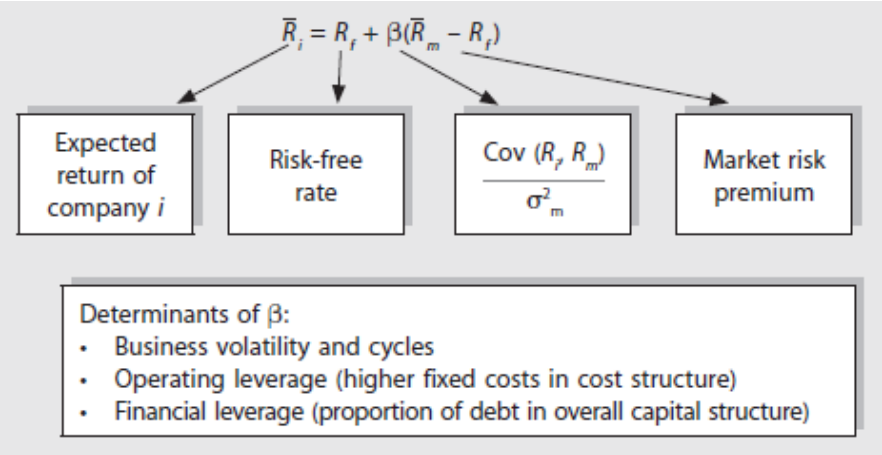
$$\text{Value of equity}^{21} = \text{Book value of net assets} + \text{Present value of future residual income discounted at cost of equity capital}$$

$$\text{Residual income} = \text{Net income} - (\text{Cost of equity capital} \times \text{Beginning book value of net assets})$$

Risk affects equity value in the following ways:

1. Higher risk will result in higher cost of capital or returns expected by investors. As the cost of capital is used to discount future streams of residual income, value of equity falls when risk is higher.
2. Higher risk also gives rise to variability in predicted future net earnings. The variance relating to the value of equity determined under riskier conditions will be higher under these circumstances. For example, a technology firm will be exposed to greater uncertainty with respect to the outcome of its research and development efforts, and value predictions will be subject to large margins of error. Higher variance in future net earnings is not necessarily an unfavorable situation for a firm. A project with high variance may lead to windfall gains for a company. However, the information on the outcomes of such projects will be "noisier" than those of other projects that have more predictable outcomes, and the margin of error with respect to predicted profit and cash flows will be greater.
3. When firm-specific risks are high (i.e., the unsystematic risks are high), there is greater information asymmetry and a likelihood of a higher variance relating to the determination of carrying amounts of book value of net assets. Highly specialized assets, by definition, are unique to their firms, and there is no market equivalent to validate the value that a firm places on that asset. Hence, a higher measurement error is expected when determining the book value of net assets of a highly specialized asset. Consider goodwill or internally-generated intangibles. In the absence of an exchange transaction, the carrying amounts of these highly firm-specific assets are subject to greater risk of measurement error than market-specific assets such as investment property.

The expected return of a company is the cost of equity capital. Theoretically, there are several ways of determining the cost of equity capital. Using the Capital Asset Pricing Model,[22] the expected return is as follows:



Using the Arbitrage Pricing Theory (APT) model,[23] the expected return is:

$$\bar{R}_i = R_f + \beta_1 f_1 + \beta_2 f_2 + \ldots \beta_n f_n$$

where f_1 = Systematic risk factor$_1$ − Risk free rate (i.e., risk premium associated with a particular systematic risk factor, e.g., inflation) and β_1 = sensitivity of the security's return to movements of f_1.

Other models include the three-factor model,[24] where size and book to market factors are included, in addition to a market index, as explanatory variables of the cost of capital.

Each of these valuation models has its own conceptual merits. However, it is beyond the scope of this book to discuss them. Suffice to say that both the CAPM, APT and three-factor models include both market-based factors and the unique sensitivity of the firm to risk factors (i.e., the beta coefficients) and firm-specific variables (e.g., the size of the firm and its sensitivity to market-based factors). While market-based information is available to investors, firm-specific factors are not. Hence, financial reporting must provide sufficient information to enable external constituents to evaluate the sensitivities of firms to changes in market factors. A primary source of information of firms' risk profiles are the financial statements.

CONCEPT QUESTIONS

CQ1.1 Management Discussion and Analysis

Check out an online annual report of a selected financial institution and review the Management Discussion and Analysis (MD&A) section or Operating Review.

1. Critically assess the risk disclosure of the chosen company. How are risks measured and reported?
2. What risk inferences can you make from the other information in the MD&A disclosures?

CQ1.2 Value at Risk

A firm uses historical simulation to calculate its Value at Risk (VaR), using daily horizons and a 99% confidence level. In its annual report, it discloses the limitations of the VaR but explains that the VaR involves fewer assumptions than parameter-based risk measures. The firm also applies stress testing in risk measurement and control. Use your library databases to research "parameter-based risk measures" and "stress testing."

Required:

1. Under what condition(s) would historical simulation be more appropriate than parameter-based measures?
2. How many days in a year would the firm expect to incur losses greater than that predicted by VaR estimates?
3. Explain how stress testing may be carried out.

CQ1.3 Article-based Discussion

Read the article "Value at Risk" by T.J. Linsmeier and N.D. Pearson, *Financial Analysts Journal*, March/April 2000.

Required:

1. Compare the advantages and limitations of VaR with other forms of risk reporting.
2. Analyze the differences in quality and cost of information among the three VaR methodologies.

3. How does VaR combine different risk factors in one summary measure?
4. What information does stress testing provide?
5. How does sensitivity analysis differ from VaR?

CQ1.4 Article-based Discussion

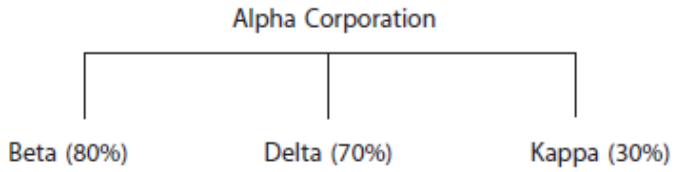
Read the article "Z Scores — A Guide to Failure Prediction," by G.J. Eidleman, *The CPA Journal*, February 1995.

Required:

1. What judgments are involved in the Z-score?
2. What are the limitations of a measure such as the Z-score?

CQ1.5 Related party disclosures

The following diagram shows the corporate structure of Alpha Corporation and three other companies.



Alpha exercises control over both Beta's and Delta's policy decisions since it has majority voting rights and it appoints the majority of the directors of Beta and Delta. Kappa, a listed company, has a five-director board of which two directors are appointed by Alpha and the remaining three are appointed by another company, Omega, which owns 49% of the share capital. The remaining 21% of the share capital of Kappa are owned by the public. One of the independent directors of Beta owns the entire share capital of another company, Phi Corporation, which has regular commercial dealings with Beta.

Required:

1. Discuss, from a risk reporting perspective, why it is important to disclose related party transactions.
2. Based on the information given, discuss the related party relationships that exist among the companies under IFRS 8 or IAS 24.

CQ1.6

An accountant of entity K is tasked with classifications of business segments for the purpose of meeting IFRS 8 disclosure requirements. The accountant considers classifying the activities of entity K, which is in the telecommunications sector as follows: consumer, enterprise, digital, and corporate.

Advise the accountant on the considerations to meet IFRS 8 disclosure requirements.

CQ1.7

An entity P has entered into the following transactions for the financial year. Entity P is wholly owned by entity Z. Advise the accountant of entity P which are the related party transactions that should be disclosed under IFRS 8:

1. Loans and advances granted by entity P to P's subsidiary Q;

2. Guarantees granted by entity P to P's joint venture R;
3. Commitments of entity P to grant entity S loans. The first son of entity P's CEO has 80% shareholding in entity S;
4. Loans granted by entity P to entity T. The second son of entity P's CFO has 40% shareholding in entity T. Entity T is not an associate of entity Z;
5. Purchase of goods by entity P from entity U. A non-executive director of entity P has 50% shareholding in entity U.
6. Sale of goods by entity P to entity V. Entity V is an associate of entity Z;

PROBLEMS

P1.1 Sensitivity analysis

The following table summarizes the financial assets and financial liabilities of PL Banking Corporation in a tabular format.

Assets	Maturing in 20x1	Maturing in 20x2	Maturing in 20x3	Total book value	Fair value
Assets:					
Fixed rate loans	$1,280,000	$890,000	$560,000	$2,730,000	$2,838,000
Average interest rate	7.5%	7.8%	8.02%	7.7%	
Variable rate loans	990,000	480,000	250,000	1,720,000	1,720,000
Average interest rate	8.28%	8.50%	8.6%	8.38%	
Liabilities:					
Savings (fixed rate)	1,800,000	0	0	1,800,000	1,800,000
Average interest rate	2.5%			2.5%	
Time deposits (fixed rate)	2,080,000	290,000	80,000	2,450,000	2,380,000
Average interest rate	4.5%	4.8%	5.0%		
Time deposits (variable rate) ...	300,000	180,000	0	480,000	
Average interest rate	6.5%	6.7%			
Long-term debt (variable rate) ..		500,000		500,000	500,000
Average interest rate		5.4%		5.4%	

Required:

1. Discuss the nature of the interest rate risks facing PL Banking Corporation.
2. Based on the information given, calculate, using sensitivity analysis, the effect of (a) a 50 basis-point increase in interest rate and (b) a 100 basis-point increase in interest rate on the earnings of the institution.

P1.2 Value at Risk

The following table shows the investments of SP Ltd, which are classified into three sub-categories.

Market Expected annual Variance of

	value	return (%)	expected return
Long-term investment:			
Quoted bonds	$ 51,552	5.5%	0.02
Quoted equities	337,514	13.8%	0.05
Short-term investment:			
Quoted bonds	225,637	2.4%	0.005
Quoted equities	70,033	12%	0.025
Funds under external management:			
Quoted bonds	242,766	4.8%	0.03
Quoted equities	117,210	15.2%	0.04

Assumptions:

(a) Returns are independently and normally distributed.

(b) Each category is treated as a two-asset portfolio.

(c) Time horizon is as follows:

Long-term investment: one year

Short-term investment: one month

Managed funds: six months

Required:

1. Calculate the VaR for each category at 95% and 99% confidence levels assuming that the covariance of the returns is zero.
2. Ignore (1). The covariance of the portfolios are as follows:

   Short-term investments: 0.01

   Long-term investments: 0.02

   Managed funds: 0.03

   Calculate the VaR for each category at 95% and 99% confidence levels. Compare your answers with those in (1). What conclusion can you draw? (Adjust annual returns proportionately for time horizons of less than a year, e.g., monthly return is assumed to be $\frac{1}{12}$ of annual return.)

P1.3 Operating segments

Public Corporation, a listed company, has five segments: logistics, warehousing, engineering, manufacturing, and consultancy. The following information for the year ended 31 December 20x9 is available, and there are no significant intercompany balances in the segment assets and liabilities.

	Sales		Segment results $m	Segment assets $m	Segment liabilities $m
	External $m	Internal $m			
Operating segments:					
Logistics	110	10	14	60	26
Warehousing	100	110	20	200	20
Engineering	60	8	(16)	40	16
Manufacturing	80	10	12	100	10
Consultancy	10	4	4	2	0
	360	142	34	402	72

Required:

1. Which segments would constitute a "reportable" segment under IFRS 8 as at 31 December 20x9?
2. How is segment reporting useful for risk assessment?

P1.4 Operating Segments

Electronic Grocers Ltd (EGL) sells groceries to its customers through its online platform.
It also provides advertising services for some of the products that it sells.
Supporting the e-commerce activities are the in-house logistics and IT support services.
EGL identifies four units as its operating segments: Retail, Advertising, Logistics and IT Support.
The information relating to each segment for the year ended 31 December 20x1 are shown below.

	Retail	Advertising	Logistics	IT Support	Total
External sales	500,000	40,000	-	-	540,000
Internal sales	-	-	150,000	50,000	200,000
Total sales	500,000	40,000	150,000	50,000	740,000
External assets	1,000,000	50,000	50,000	9,000	1,109,000
Intra-group assets	-	-	10,000	120,000	130,000
Total assets	1,000,000	50,000	60,000	129,000	1,239,000
External net profit/(loss)	130,000	6,000	(12,000)	(25,000)	99,000
Internal net profit/(loss)	(45,000)	(15,000)	34,000	26,000	-
Net profit (loss)	85,000	(9,000)	22,000	1,000	99,000
External liabilities	340,000	27,000	39,000	15,000	421,000
Intra-group liabilities	110,000	20,000	-	-	130,000
Total liabilities	450,000	47,000	39,000	15,000	551,000

Required:

1. Identify the operating segments in accordance with the quantitative criteria of IFRS 8.
2. Show the reconciliation of operating segment information with the reported entity totals.

P1.5 Operating Segments

Electronic Grocers Ltd (EGL) provides purely intermediary services for grocery sales on behalf of its suppliers through its online platform. It provides IT services to facilitate e-commerce sales and advises its suppliers on e-commerce strategies and charges consultancy fees for the advice.

It also provides advertising services for some of the products that it sells and logistical services.

EGL identifies four units as its operating segments: Consultancy, Advertising, Logistics and IT Services.

The information relating to each segment for the year ended 31 December 20x1 are shown below.

	Consultancy	Advertising	Logistics	IT Services	Total
External sales	40,000	25,000	60,000	200,000	325,000
Internal sales	-	-	-	120,000	120,000
Total sales	40,000	25,000	60,000	320,000	445,000
External assets	25,000	15,000	130,000	129,000	299,000
Intra-group assets	-	-	-	13,000	13,000
Total assets	25,000	15,000	130,000	142,000	312,000
External net profit/(loss)	15,000	13,000	28,000	130,000	186,000
Internal net profit/(loss)	-	-	-	-	-
Net profit (loss)	15,000	13,000	28,000	130,000	186,000
External liabilities	10,000	5,000	59,000	87,000	161,000
Intra-group liabilities	5,000	8,000	-	-	13,000
Total liabilities	15,000	13,000	59,000	87,000	174,000

Required:

1. Identify the operating segments in accordance with the quantitative criteria of IFRS 8.
2. Show the reconciliation of operating segment information with the reported entity totals.

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[1] International Accounting Standards Board, 2005. *International Financial Reporting Standard 7, Financial Instruments: Disclosures*. IASC Foundation, London, United Kingdom.

[2] Miller, K.D., 1992. "Framework for Integrated Risk Management in International Business," *Journal of International Business Studies*, 23(2), pp. 311–332.

[3] As cited in footnote 2.

[4] Accounting Standards Board (UK), 1994. *FRS 5 Reporting the Substance of Transactions*.

[5] International Accounting Standards Board, 2005. *International Accounting Standard 37: Provisions, Contingent Liabilities and Contingent Assets*, IASC Foundation, London, United Kingdom.

[6] IAS 37 paragraph 43 relates risk with the variability of outcome.

[7] Credit problems may be caused as much by market liquidity problems (systematic risk) as with firm-specific credit control policies (unsystematic risk).

[8] On the other hand, it may be possible that the cost of capital for some companies will go up because investors find that they have underestimated their risks.

[9] See for example, Botosan, C.A., 1997. "Disclosure Level and the Cost of Equity Capital," *The Accounting Review*, July. 72(3), pp. 323–350.

[10] IFRS 8 is effective for financial periods commencing 1 January 2009.

[11] International Accounting Standards Board, 2006. *International Financial Reporting Standard 8: Operating Segments*, IASC Foundation, London, United Kingdom.

[12] International Accounting Standards Committee, 1998. *International Accounting Standard 14: Segment Reporting*, IASC Foundation, London, United Kingdom.

[13] International Accounting Standards Board, 2003. *International Accounting Standard 24: Related Party Disclosures*, IASC Foundation, London, United Kingdom.

[14] JPMorgan, 1994. RiskMetrics Technical Document. New York, Morgan Guarantee Trust Company.

[15] For a concise discussion, refer to Linsmeier, T.J., and N.D. Pearson. 2000. "Value at Risk." *Financial Analysts Journal*, March/April, 56(2), pp. 47–67. For a more detailed review, refer to Jorion, Phillipe. 2001. *Value at Risk: The New Benchmark for Managing Financial Risk*, McGraw-Hill.

[16] The negative sign is omitted as it is understood that VaR measures the potential maximum loss within the confidence limit.

[17] The standard deviation is the square root of the variance of portfolio returns. Variance of portfolio = $W_1^2Var_1 + W_2^2Var_2 + 2W_1W_2Cov_{12}$, where W_1 is the weightage of asset 1 and W_2 is the weightage of asset 2, Var_1 is the variance of the returns of asset 1, Var_2 is the variance of the returns of asset 2 and Cov_{12} is the covariance of the returns on the two assets.

[18] Stress testing may be used to determine an entity's ability to withstand losses under extreme market conditions.

[19] Altman, E.I., 1968. "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy," *Journal of Finance*, 23(4), pp. 589–609.

[20] Securities Exchange Commission, 1997, Financial Reporting Release (FRR) 48. Disclosure of Accounting Policies for Derivative Financial Instruments, and Derivative Commodity Instruments (Release No. 33-7386) and Disclosure of Quantitative and Qualitative Information about Market Risk Inherent in Derivative Financial Instruments, Other Financial Instruments, and Derivative Commodity Instruments (Release No 34-38223). IC-22487, FRR 48, International Series No. 1047, File No. 27-35-95 (Washington, DC: SEC).

[21] This valuation model is generally known as a residual income model. See Penman, S.H., 2007. *Financial Analysis and Security Valuation*, Third Edition, McGraw-Hill. The abnormal earnings model is another comparable earnings-based valuation model. See Ohlson, J.A. 1995. "Earnings, Book Values and Dividends in Equity Valuation," *Contemporary Accounting Research*, 11, pp. 661–687.

[22] Sharpe, W. 1964. "Capital Asset Prices: A Theory of Market Equilibrium under Condition of Risk," *Journal of Finance*, 19(3), pp. 425–442.

[23] Ross, S. 1976. "The Arbitrage Pricing Theory of Capital Asset Pricing," *Journal of Economic Theory*, 13, pp. 341–360.

[24] Fama, E. and K. French, 1992. "The Cross-section of Expected Stock Returns," *Journal of Finance*, June, pp. 427–465.

CHAPTER

2

Group Reporting I

Concepts and Context

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

LO1 Understand the rationale for group reporting and the complementarity of reporting by legal and economic entities, and business units;

LO2 Understand the economic incentives for the provision of consolidated financial information;

LO3 Understand the economic context of group reporting — mergers and acquisitions as risk management strategy and the impact on financial reporting;

LO4 Understand the concept of “control” and the determination of the parent-subsidiary relationship;

LO5 Understand the concept of “significant influence” and the notion of “associate”;

LO6 Understand the concept of a “business combination” and the scope of IFRS 3;

LO7 Know the theories relating to consolidation; and

LO8 Understand the effects of parent versus entity theories of consolidation.

INTRODUCTION

A primary issue that underpins financial reporting is the identification of the reporting entity. Users of financial information may need more than one set of financial statements to make decisions about the viability of their investments. Financial information may be reported at three levels:

1. Separate financial statements for the legal entity;
2. Aggregated reporting for the economic entity; or
3. Disaggregated reporting for business units within a legal or economic entity.

Corporate regulation may require separate financial statements to be prepared for each legal entity. The separate financial statements provide information for legal and taxation purposes as well as a basis to determine the financial solvency of individual entities. If taxation is assessed on a legal entity basis, the audited financial statements of each entity are also used as a basis to assess corporate taxation. Dividends are also declared out of the profits and retained earnings of a legal entity; hence, the financial statements are used as a basis to determine the sufficiency of reserves for the declaration of dividends. Furthermore, the financial solvency and health of companies as stand-alone entities are assessed from separate financial statements. With aggregated reporting, the weaknesses of individual companies are masked by the strengths of other group companies.

A legal entity may exercise control over other legal entities through share ownership, or contractual or statutory arrangements. Applying the principle of *substance over form*, the notion of a reporting entity extends beyond the legal entity to that of an economic group of related companies. If the legal entity's separate financial statements are the only source of information, users will not be able to properly assess the extent of the size, profitability, cash flows and risks of the larger economic entity. For example, assume that AA Corporation has controlling interests over 20 subsidiaries and provides separate financial statements for all of them. Investors of AA Corporation may have detailed information on individual companies but may not be able to obtain a clear picture of the group's performance as a whole, analogous to a case of not seeing the forest for the trees.

The power to control other entities creates an effective relationship between the controlling entity and the controlled entities. An entity has incentives to extend its economic boundaries over other entities. These incentives include increasing market share, reaping economies of scale and scope among companies, reducing risks through the diversification of operations, tapping on future growth opportunities not available through organic growth and capitalizing on the slack debt or operating capacity available in other companies. Synergies are often created through an internal market place or through generating economies of scale and scope through vertical or horizontal integration. A group of companies may be able to deal better with economic risks than an individual entity. The risks arise at three levels: macro-economic risks, for example, changes in government policies and political instability; industry risks, for example, competition and technological risks; and firm-specific or idiosyncratic risks, for example, reliance of a company on specific human capital or intellectual property. Diversification through mergers and acquisitions may lead to risk mitigation within the economic entity. However, diversification through mergers and acquisitions is a double-edged sword. Studies have also shown that many corporate acquisitions and diversification programs are sub-optimal and value-destroying.

Corporate acquisitions may be motivated by managers' self-interest to invest in size rather than value (Jensen, 1986;[1] Shleifer and Vishny, 1990[2]). Under the managerial entrenchment hypothesis, managers have incentives to opportunistically expand their span of control as they enjoy greater perks, power, and job security in larger companies (Example, Fung, Jo and Tsai, 2009[3]). Self-interested managers may pursue unrelated diversification to reduce risks to themselves, even when the diversification is value-destroying to shareholders (Amihud and Lev, 1981[4]). There are costs and risks that arise from acquisition strategies, particularly in relation to unrelated diversification. The complexity of the combined entity increases in unrelated diversification and so does the likelihood of agency problems. As controlled entities have greater firm-specific knowledge about their operations, the controlling entity is exposed to agency problems arising from information asymmetry between parent and

subsidiaries. Integrating another entity into a larger group also entails direct costs such as restructuring costs, and indirect costs such as the loss of motivation of affected human capital. Hence, monitoring and information costs increase with the size and complexity of the economic entity. Synergistic benefits from acquisition strategies are potentially reduced by direct and indirect costs arising from these strategies.

Therefore, investors need to assess if an acquisition decision is value maximizing *ex-post*. They should have information to determine if the individual entities are better off as stand-alone or as combined entities. Hence, investors need information to assess the new risks of the enlarged entity and the effectiveness of the acquisition strategy. As discussed above, companies undertake mergers and acquisitions for different reasons, some of which relate to the promotion of managerial self-interest. Market participants need to assess the impact of mergers and acquisitions on risks, value and future cash flows. Through the process of consolidation, total liabilities, assets, profit, cash flows, and post-acquisition retained earnings are aggregated for the economic entity so that investors can assess the risk-return profile of the combined entity.

Conversely, if only aggregated information is provided about the larger economic entity, there will be loss of information about the performance and risk-return profile of individual units within the economic entity. Therefore, users of financial information will also require disaggregated information on business units that share similar risk and return characteristics within the larger economic entity. One source of disaggregated information is the separate legal entity's financial statements. Another source of disaggregated information is *operating segment information*. Business units within a larger economic entity may be divided along operational or geographical lines. The process of reporting the financial performance and position of each operating segment is called *segment reporting*. Since aggregation masks the trade-offs among business units, segment reporting allows users to determine the risk-return profile of each operating segment within an economic entity and to identify particular strengths and weaknesses relating to specific operations or geographical concentrations.

Hence, to meet investor information needs, both aggregated information in the form of consolidated financial statements and disaggregated information in the form of segment reporting or provision of individual financial statements are necessary. The focus of this chapter is the provision of aggregated information. The process of providing aggregated information for an economic entity is called *consolidation*. A controlling entity is called the *parent company*. Controlled entities are called *subsidiaries*. An economic entity comprising the parent company and the subsidiaries is called a *group*. *Consolidation* is the process of preparing and presenting the financial statements of the parent company and the subsidiaries as if they are one economic entity. The financial statements are called group or consolidated financial statements. Consolidated statements are artificial "creations" as there is no such thing as books of accounts for the economic entity. Consolidation involves reconstructing combined financial statements from the separate financial statements of individual entities through a series of consolidation journal entries and use of consolidation worksheets that lie outside the formal books of accounts of the legal entity. As such, the consolidation process has to be repeated every year for as long as the group exists.

page 32

Although consolidated financial statements entail additional preparation costs for the controlling entity, research has shown that companies have economic incentives to provide consolidated financial statements voluntarily.

ECONOMIC INCENTIVES FOR THE PREPARATION OF CONSOLIDATED INFORMATION

We can analyze the incentives to provide consolidated financial statements from three perspectives using the framework from Holthausen (1990).[5]

Information Perspective

If consolidated financial statements convey more superior information about future cash flows than a company's separate financial statements, an economic entity has incentives to provide the information to external constituents (Holthausen, 1990). Under the information perspective, managers with a comparative advantage on information about

their firms are compensated for their ability to provide information on the future cash flows of these firms (Holthausen and Leftwich, 1983).[6]

However, there is no consensus that consolidated financial statements are more informative than separate financial statements. One view is that consolidated financial statements actually hide, rather than reveal, proprietary information. This view proposes that the greater the loss of competitive advantage, the more likely is the provision of consolidated financial statements in place of individual financial statements (Mian and Smith, 1990).[7] Mian and Smith propose that unconsolidated financial statements are generally more informative than consolidated financial statements. They explain that investors can try to replicate the consolidation process and achieve "homemade" consolidated financial statements from individual financial statements but the reverse is not possible. Their observation is true if intragroup transactions are either reported or are small in effect. The ability to replicate "homemade" consolidated financial statements from individual statements gives investors the benefit of both aggregated and disaggregated information. However, if only consolidated financial statements are provided, the investor is not able to undo the effects of consolidation to arrive at the individual financial statements. Hence, overall, there is a loss of information from providing only a combined set of financial statements. Mian and Smith examine voluntary consolidation decisions in the period prior to the issuance of the Statement of Financial Accounting Standard (SFAS) 94,[8] which requires mandatory consolidated financial statements. They find that a firm is more likely to choose consolidated reporting when (1) there are greater operating, financial and informational interdependencies between parent and subsidiaries, (2) there are foreign rather than domestic subsidiaries, (3) the parent provides a direct guarantee of the subsidiary's debt rather than an indirect guarantee, and (4) the parent is in the financial services industry. They infer that interdependencies and the close integration between parent and subsidiary (e.g. through giving a direct rather than an indirect guarantee) indicate a strong internal marketplace (as proposed by Klein, Crawford and Alchian, 1978),[9] and these companies may be less inclined to be more transparent about their unique firm-specific activities from which they may enjoy quasi-rents. Hence, aggregation is the preferred mode of reporting for these firms.

Holthausen (1990) provides an alternative (although not mutually exclusive) explanation to the view that consolidation is used to conceal proprietary information of a group of firms with high interdependencies. He proposes that the greater the interdependencies among group companies, the more informative is the combined earnings about future cash flows of the combined entity than the earnings of the separate entity's financial statements. Can the market replicate the consolidation process? The greater the operational and financial interdependencies among the group companies, the higher is the likelihood of intragroup transactions, and the more difficult it is for external users to replicate the consolidation process. Hence, managers will have incentives to voluntarily provide the consolidated financial statements that will enable the investors to better predict the future cash flows of the group.

Efficient Contracting

Do consolidated financial statements maximize wealth for firms through reducing agency costs? Does the information enhance incentives for managers to perform better? Whittred (1987)[10] suggests that consolidated information improves wealth for firms as a whole by reducing the information asymmetry between lenders and borrowers. Lenders fear that borrowers will transfer assets to related companies leaving nothing but a "shell" company for lenders to claim from. As borrowers are protected by limited liability, they may expropriate a considerably larger sum from lenders than what they stand to lose in the form of their residual interests. Hence, lenders require cross-guarantees issued by parent companies to "undo" the "negative" effects that limited liability has on creditors. Whittred suggests that a set of consolidated financial statements performs the same function as a "cross-guarantee" issued by a parent company. Such a state of financial statements effectively "undoes" the effect of separately incorporated companies within the group. For example, if Subsidiary A is not able to pay its debts as a legal entity, its shortfall is compensated by the net assets of other related entities within the group. This is also known as the "co-insurance" effect (Seth, 1990),[11] which makes available excess debt capacity to other group companies that would otherwise have no access to the debt. The "co-insurance" effect potentially reduces the cost of debt for individual companies. Effectively, a set of consolidated financial statements provides an implicit assurance to lenders that the debt of a subsidiary is financially backed by the assets of the combined entity.

Opportunism

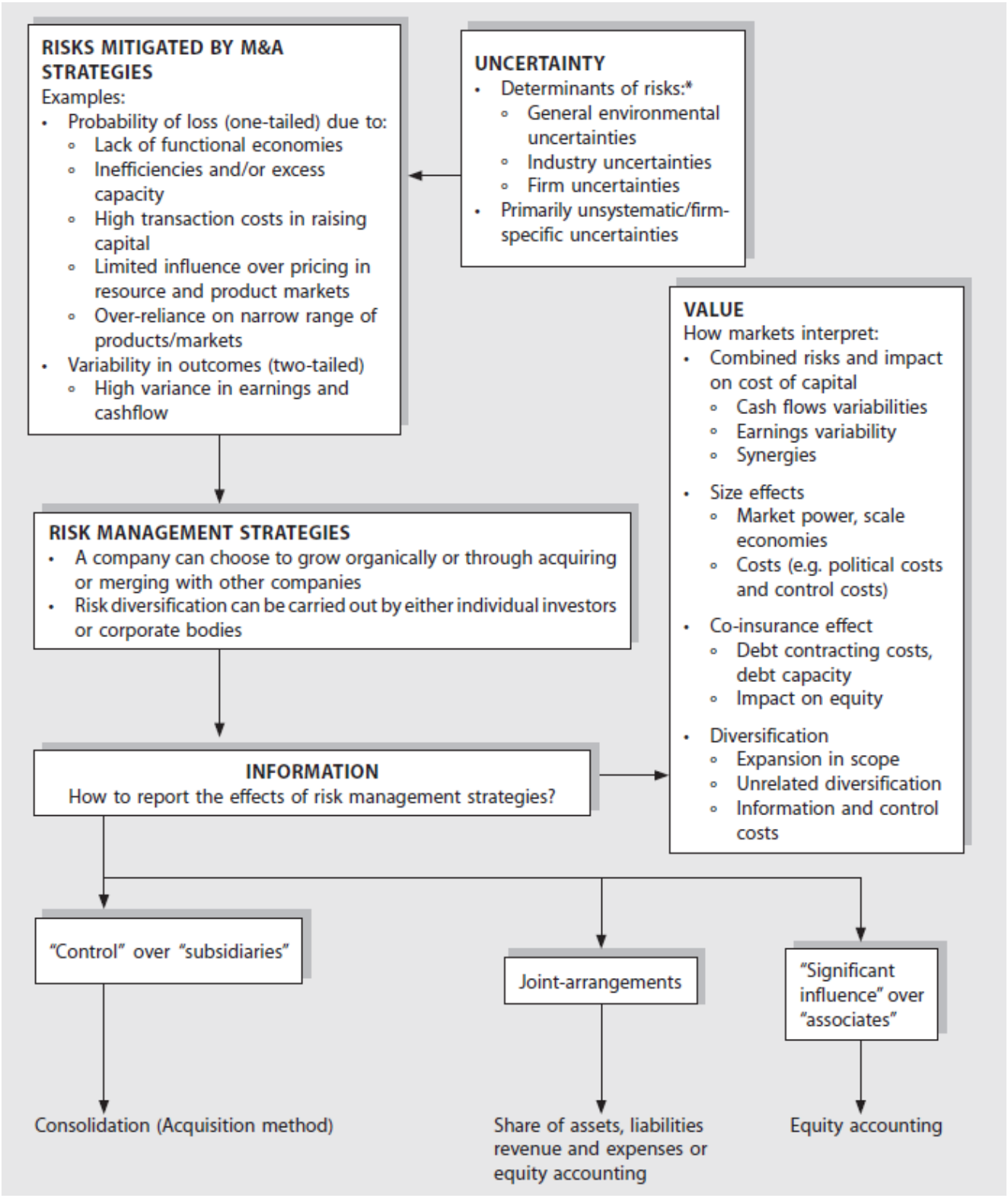
Do consolidated financial statements lead to wealth transfers to managers at the expense of other contracting parties? The answer is "yes," if the motive for undertaking the acquisition in the first place is motivated by managerial self-interest. The issue of managerial entrenchment as discussed above suggests that managers enjoy higher compensation, perks, and power through managing a larger group of companies. If managerial compensation is pegged to reported profit or other financial statement numbers, the sheer increase in size will result in higher payout for managers, notwithstanding their managerial competence. The larger asset base as reported in consolidated financial statements also enhances the reputation of managers in the labor market and reduces managerial risks. Investment in size and growth may be sub-optimal if these are not accompanied by an increase in value for shareholders. Shleifer and Vishny (1990)[12] suggest that managers are more likely to over-invest in companies that are specific and complementary to the managers' skills. Such an investment strategy is motivated by managers' risk aversion, but is not necessarily value-enhancing to external investors.

The presentation of combined positions and financial performance potentially gives rise to information asymmetry between managers and external stakeholders by masking the financial problems of individual companies within the group. Without segment information or other forms of disaggregated information, detailed evaluation of the effectiveness of corporate acquisition strategies is not possible. Hence, both aggregated (consolidated) and disaggregated (segment) information are required.

ECONOMIC MOTIVES FOR ENTERING INTO INTERCORPORATE ARRANGEMENTS

Mergers and acquisitions are entered into by companies as an alternative strategy to organic growth in order to deal with certain risks such as the lack of economies of scale and scope, production inefficiencies, low market share, limited bargaining power in resource and product markets, limited debt capacity, and high dependence on a narrow range of products and markets. Acquiring companies with negatively correlated earnings or cash flows to one's own also minimizes the likelihood of wide swings in combined earnings and cash flows (refer to Figure 2.1.) However, the use of mergers and acquisitions as a risk management strategy may be sub-optimal if individual investors are able to diversify risks in a more efficient manner than companies. Hence, finance theory postulates that the market will not reward a firm's diversification efforts by paying a higher price for its shares if investors themselves can diversify their personal portfolios to replicate the firm's diversification strategies. So, why do firms still engage in mergers and acquisitions? There may be a number of answers to this question. First, individuals may not be able to diversify as efficiently as a firm because of indivisibility of assets and high transaction costs. Acquiring firms have the advantage of economies of scale to invest in other firms. Second, a firm engaging in mergers and acquisitions has stakeholders other than the shareholders (investors), for example, the managers and the employees, who are not able to diversify their risks as well as the shareholders.[13] The managers' human capital is tied to the risks of the firm. To manage their risks, risk-averse managers may under-invest in risky projects with positive net present value.[14] Hence, page 35 corporate diversification of risks may mitigate the problem of under-investment by risk-averse managers.

FIGURE 2.1 Economic context of group reporting



*** Miller (1992), as cited in Chapter 1.**

Therefore, consolidation or group reporting is brought about by strategic corporate decisions to extend corporate boundaries through mergers and acquisitions. These strategic decisions may be motivated by efficiency reasons (for example, when market participants are not able to replicate the diversification decision or when the acquiring and acquired companies are highly interdependent and are uniquely complementary) or for opportunistic reasons (for example, when acquisitions are motivated by managerial self-interest).

Broadly speaking, mergers and acquisitions can assume the following arrangements:

1. The acquirer gains "control" over the acquiree. In such an instance, the acquirer is described as the "parent" and the acquiree is deemed a "subsidiary" for accounting purposes. The acquisition method should be applied to consolidate the subsidiary. The term "consolidation" is used with reference to this particular scenario.
2. Reciprocal investments are held by each of the two firms. In this situation, there is neither an acquirer nor an acquiree, as both are deemed to be equally dominant. It is a "marriage of equals." In this situation, the "uniting of interests" or "pooling of interests" is conceptually the right method to use. However, accounting standards have deemed it highly unlikely that there is no one dominant party in a business combination. The option to apply "pooling of interests" allows companies to avoid charging impairment write-downs to the income statement. (In "pooling of interests," no goodwill arises as there is no "acquirer," and hence no "acquisition" of a subsidiary.)
3. Two or more acquirers gain "joint control" over the acquiree. This is deemed a joint arrangement and accounting for share of assets, liabilities, revenues and expenses or the equity method may be used depending on the rights and obligations of each party to the joint arrangement.
4. The investor has "significant influence" (but not "control") over the operating and financial policies of the investee. The investor can participate in but not determine the outcome of the policy making process. In this situation, the investee is deemed an "associate" of the investor, and equity accounting must be applied to measure the investment in the group accounts.

Figure 2.1 summarizes the economic context and the issues relating to group reporting.

Accounting for Intercorporate Investments

From the introductory sections, we note that companies have economic incentives to change their economic boundaries through intercorporate investments.

Investment Strategies, Ownership Levels and the Impact on Financial Reporting

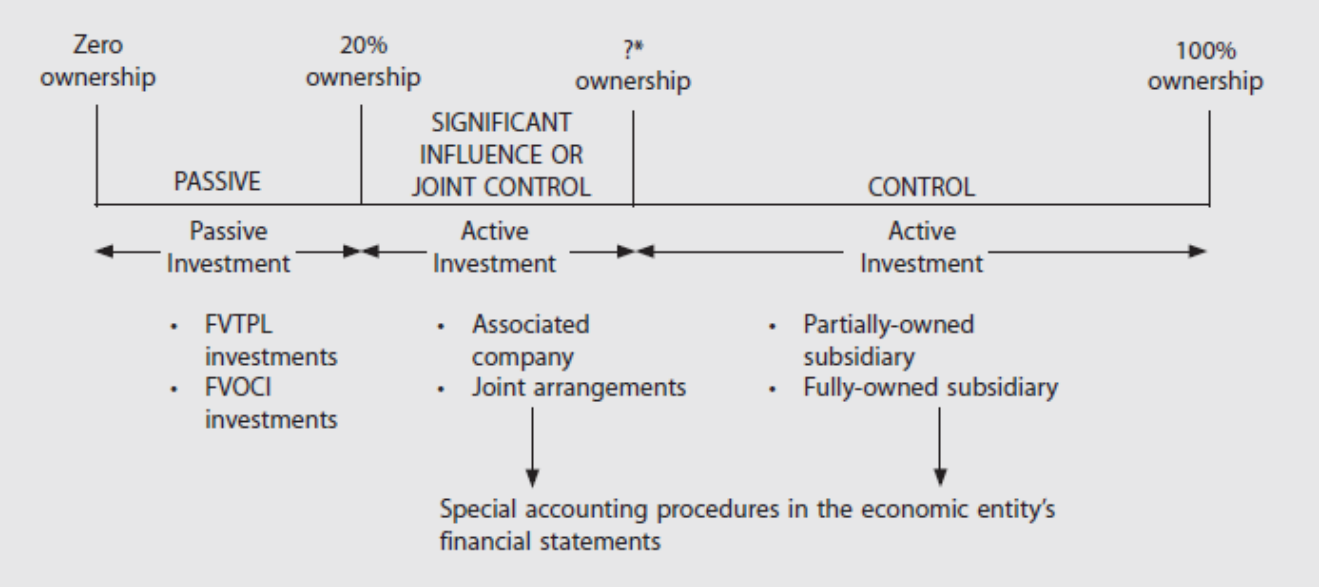
An investing firm could be a passive investor owning an insignificant ownership stake with no influence whatsoever over the investee's operations. The main purpose for undertaking the investment is often to invest funds in excess of its internal requirements to earn dividend income or make a capital gain. Alternatively, a firm could be an active investor with a significant ownership interest that enables it to exert significant influence or control over the investee's operations. The degree of operational and financial interdependencies between investee and investor may be such that dividend income does not reflect the true measure of earnings that the investor enjoys from the relationship. For example, a firm may acquire another firm in order to gain entry into a new market or to achieve synergistic benefits from complementary strengths within the same industry or to gain market dominance. The acquisition of WhatsApp by Facebook is a good example. In such a combination, the economic boundaries are extended such that the benefit to the investor is the stream of the investee's earnings rather than dividend income.

From a financial reporting perspective, it is important to classify these intercorporate investments to reflect the intention of the investment, the ownership level, and the extent of decision rights that the investor has over the investee's strategic policies. The International Financial Reporting Standard (IFRS® Standards) Conceptual Framework explains that an asset embodies a right that has the potential to produce economic benefits. Since the economic benefits vary in accordance with the different motives for investment holdings, the carrying amount of the asset would differ accordingly.

Figure 2.2 reflects the relationship between ownership levels and investment strategies. These percentage holdings, if any, are only default assumptions to impute the underlying "intention" for holding an investment. The

prevailing accounting standards emphasize principles rather than bright lines or quantitative thresholds.

FIGURE 2.2 Continuum of intercorporate ownership



*** Quantitative thresholds do not apply in IFRS 10 but ownership of more than 50% voting rights is often used as a rule of thumb measure in straightforward situations.**

The prevailing accounting standards are IFRS 10 *Consolidated Financial Statements*, revised IAS 27 *Separate Financial Statements,* IAS 28 *Investments in Associates and Joint Ventures* and IFRS 11 *Joint Arrangements*

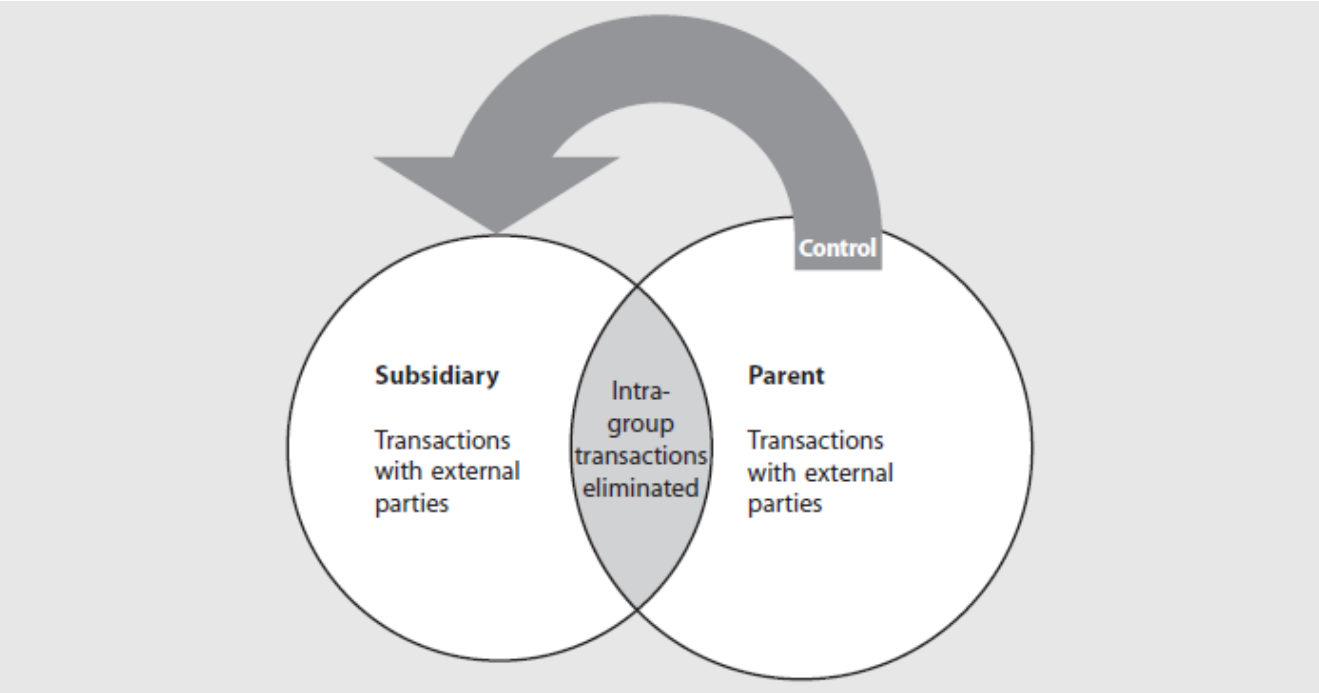
The previous consolidation standard IAS 27 *Consolidated and Separate Financial Statements* specifies the power to govern financial and operating policies and the benefits derived therein, or risk and rewards as indicators of control. In contrast, IFRS 10 sets principles and qualitative criteria to establish if the investor controls the investee, and hence if the investee should be consolidated. Control exists when the investor "is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee". Facts and circumstances relating to variable returns, ability and power need to be evaluated to determine if control exists.

Equity investments classified as fair value through profit or loss (FVTPL) or by election, fair value through other comprehensive income (FVOCI) are discussed in detail in Chapter 9. Chapters 3 to 7 explain how the economic entity should account for intercorporate investments in which the investor is able to either exert "control" or "significant influence" over the investee. The concepts of "control" and "significant influence" are discussed in the following sections. The concept of "joint control" is also explained through contrasting "joint control" with "significant influence".

THE CONCEPT OF CONTROL

Consolidation is the process of combining the assets, liabilities, earnings, and cash flows of a parent and its subsidiaries as if they were one economic entity. Since an economic, and not legal, perspective is adopted, transactions between companies within this economic entity and their resultant balances must be eliminated (see Figure 2.3).

FIGURE 2.3 Boundary of the economic entity determined by the control relationship



Economic Boundaries as Defined by IFRS 10

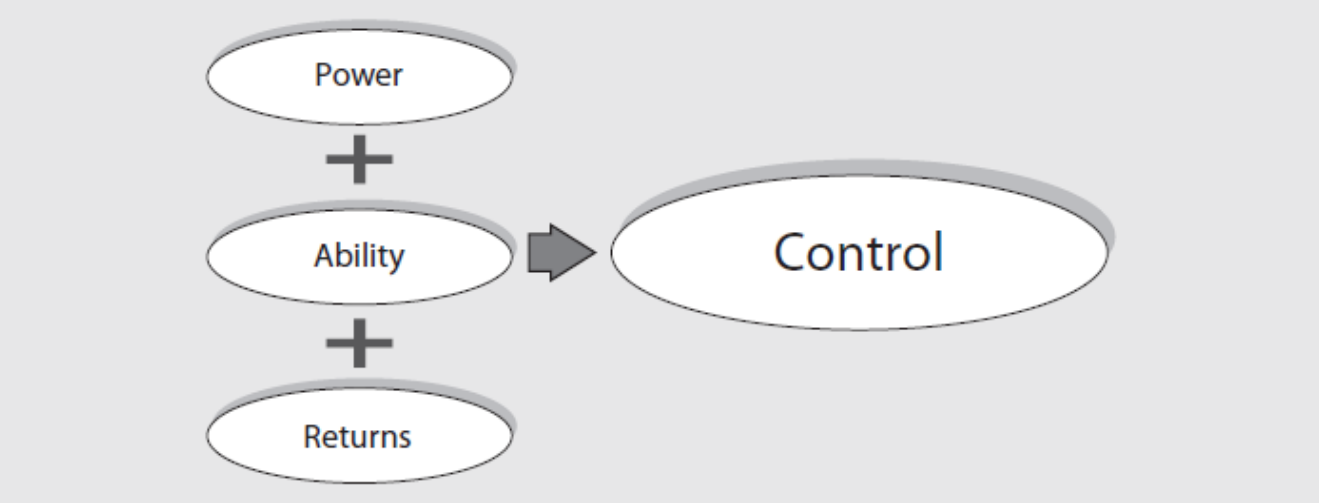
Before consolidation is carried out, it is important to determine whether a parent-subsidiary relationship exists. We need to consider the attributes of control in IFRS 10 *Consolidated Financial Statement*s.

An investor controls[15] an investee if and only if the investor has all of the following:

(a) power over the investee;
(b) exposure, or rights, to variable returns from its involvement with the investee, and
(c) the ability to use its power over the investee to affect the amount of the investor's returns.

Figure 2.4 shows the attributes of control.

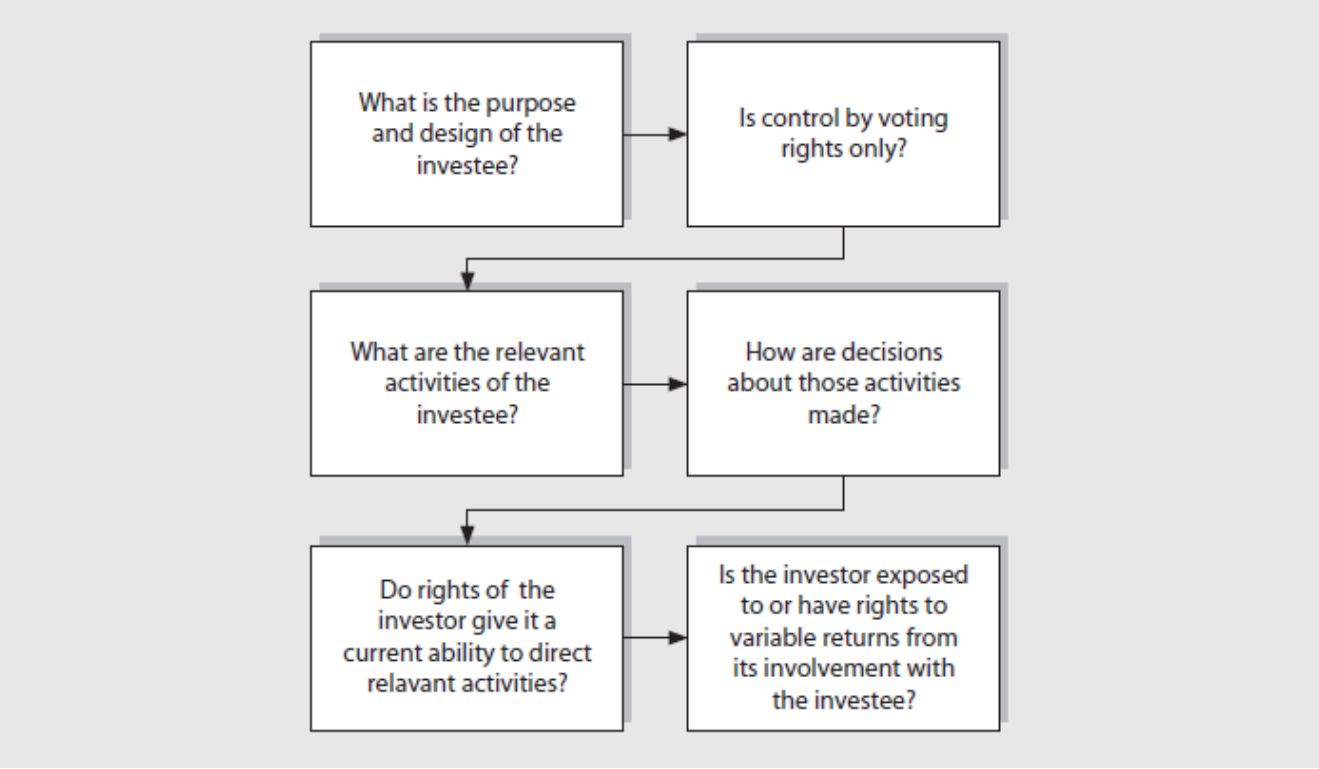
FIGURE 2.4 Attributes of control



PROCESS OF ASSESSING CONTROL

A step-by-step process to assess control under IFRS 10 is presented in Figure 2.5.

FIGURE 2.5 Process of determining control



The process of determining control considers all three attributes of control: Power, Ability and Returns.

In assessing control over an investee, the purpose and design of the investee should be considered to determine how decisions about relevant activities are made. If decisions are made through exercise of voting rights to appoint key management personnel that makes decisions about relevant activities, voting rights is the primary source of power to determine control. In some cases, voting rights may not be the dominant factor that empowers decision-making. For example, if decisions are made through exercise of rights arising from contracts, those contracts would be a source of power. In other cases, even informal relationships may be an overriding source of power.

Hence, the process considers how decision-making over the relevant activities is empowered and which party has the power to make those decisions. It is important to identify the "relevant activities" of the investee. These activities are those that have the most significant effect on the returns of the investee. The party that has the power and ability to make decisions about these activities, and therefore are able to affect the returns of the investee that consequentially flow to the party, has control over the investee.

The relevant activities may be one or more from the normal range of activities that an entity would engage in. These may include operating and financing activities such as selling and purchasing of goods and services, acquisition and disposal of assets, financial management, research and development and raising of capital among others. Examples of decisions over the relevant activities are operating and capital decisions of the investee and appointment and remuneration of key management personnel.

If more than one investor has decision-making rights over activities of the investee, it is necessary to determine which activity has a more significant effect on the returns of the investee. For example, if Investor A has the power and ability to decide on research and development activities of Company C and Investor B has the power and ability to decide on marketing activities of Company C, Investor A has control if research and development is deemed to have a greater effect on returns of Company C at that point in time. The arrangement does not characterize a joint arrangement where both investors are equally involved in the decision-making of the same relevant activities. IFRS 10 requires a dynamic assessment as the most relevant activities of an entity may change over time.

The process considers if the rights enables an investor to have a *current* ability to direct the most relevant activities of an investee. The investor must be practically able to make decisions on these activities without any restriction. Finally, the process evaluates if the investor is exposed to or have rights to variable returns from its involvement with the investee.

IFRS 10 requires the investor to consider all facts and circumstances to establish if control exists. There are no bright lines or prescriptive quantitative thresholds. Unlike the previous standard, IFRS 10 requires consideration of all available evidence, including fact patterns to determine if control exists. An example of a fact pattern is the past voting pattern in general meetings. Another is the dispersion and number of investors to determine if relative voting rights are concentrated in one or more investors. The spirit of IFRS 10 is intended to capture the primary essence of control, which previously was simplistically depicted through quantitative thresholds. The three variables, Power, Ability and Returns are discussed in greater depth below.

ATTRIBUTES OF CONTROL

Power

Power arises from many sources. These sources include voting rights, potential voting rights, control over the investee's key management, control over another entity that directs relevant activities, contractual arrangements, statutory provisions, and rights to direct investee to enter into or veto transactions and special relationships. These sources of power are not mutually exclusive. However, each source of power should be considered in combination with other sources of power. In most cases, they reinforce each other. In other cases, they supplement other existing sources of power. IFRS 10 requires us to consider all sources of power in combination to arrive at a realistic assessment of who has power to control an entity.

page 41

We discuss some of these sources of power below.

Voting rights The most common source of power is voting rights. In a straightforward case (i.e. no other competing sources of power), voting rights remain as the most important source of power. However, even if voting rights is the most persuasive source of power, we have to consider evidence beyond absolute voting rights. The principles in IFRS 10 require us to consider relative voting rights, dispersion of voting rights, the number and likelihood of parties that may act together to outvote the investor, potential voting rights and voting patterns, and other facts and circumstances.

ILLUSTRATION 2.1 Relative voting rights

In this scenario, three investors collectively have more than 50% ownership interests. The remaining 43% ownership interests are dispersed over 100 investors, each not owning more than 0.5% interest. The Annual General Meeting (AGM) is attended by investors A, B, and C and about a third of other investors.

	Voting rights	Voting at AGM	Relative voting rights
Investor A	40%	40%	57%
Investor B	10%	10%	14%
Investor C	7%	7%	10%
Other investors	43%	13%	19%
	100%	70%	100%

In this scenario, Investor A has relative interest that is greater than 50%. The number and dispersion of other investors are high, indicating that it is difficult to outvote Investor A in general meetings. The voting and fact pattern in this situation would support Investor A as being a *de facto* parent. The evidence of control arises from relative voting rights and not absolute voting rights in this situation.

Potential voting rights In addition to actual voting rights, control can arise from potential voting rights. Potential voting rights are rights to obtain voting rights of an investee from potential ordinary shares.[16] These shares include options, convertible instruments and forward or futures contracts that enable the holder to acquire actual voting rights. Paragraph B47 of IFRS 10 requires potential voting rights to be considered only if the rights are substantive. We will discuss substantive rights in the segment below.

When assessing this source of power, we should consider the purpose and design of these instruments. Why were they issued in the first place? Is the primary reason to vest power in the holder of the potential ordinary shares? It is necessary to consider the terms and conditions attached to the potential ordinary shares, the motives for the issue and the intent (if any) to vest control in the holder of the potential ordinary shares.

ILLUSTRATION 2.2 Potential voting rights

In this scenario, Investor A, the founding investor, invited Investor B and Investor C to purchase shares in Entity X. Investor B is a strategic investor who has knowledge of Entity X's business. Investor A is a financial investor. Investor C is a related party of Investor A. Investor B was issued options that would allow B to be issued with 40,000 ordinary shares.

	Voting rights	Percentage ownership	Potential voting rights (if exercised)	Combination	Percentage ownership
Investor A	30,000	67%	–	30,000	35%
Investor B	10,000	22%	40,000	50,000	59%
Investor C	5,000	11%	–	5,000	6%
	45,000	100%	40,000	85,000	100%

Consider the following variations:

(a) The options are exercisable at current date.

In this scenario, Investor B has control with 59% ownership, if the options are exercised.

(b) The options are exercisable in Year 3.

In this scenario, Investor A has control as the options are not currently exercisable and the intent is for Investor B to continue to "grow" the business of Entity X.

In the discussion below under "Ability," we consider how the state of the options, that is, whether the options are profitable or not, affect control.

Power over key management personnel As discussed earlier, control arises when an entity is able to make decisions on the activities that most significantly impact returns. Decisions on these activities are made by key management personnel. The entity that is able to appoint, remove and remunerate these personnel effectively has the power over these personnel. IAS 24 *Related Parties* defines key management personnel as those "persons having authority and responsibility for planning, directing, and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of that entity." IAS 24 cautions that key management personnel are not necessarily appointed directors or managers of an entity but they may include "shadow directors" or people who control key management personnel of that entity.

Control over another entity that directs relevant activities Control may be direct or indirect. Power may arise from voting rights held by an intermediate subsidiary. In other situations, power may arise from management contracts and other arrangements. For example, Investor A has control over Entity X. Even though Entity X has only 20% interest in Entity Y, it is able to direct the relevant activities of Entity Y because Entity Y is dependent on Entity X for its technical know-how. Through Entity X, Investor A has control of Entity Y. Direct and indirect control is discussed in a subsequent section of this chapter.

Statutory and contractual provisions, rights to veto or enter into transactions Power may also arise from statute, contracts, or arrangements that give rise to rights to veto or enter into transactions. As discussed below, we explain that the power must give rise to "substantive rights" and not "protective rights." For example, if a franchising contract allows the franchisor to intervene to protect the franchise brand name, the power is protective and is not a page 43 sufficient basis to give rise to power to direct the most relevant activities of the entity.

Hence, these other sources of power must give rise to pro-active rights to direct most relevant activities and not applied only to isolated or rare situations.

Special relationships IFRS 10's holistic approach toward assessing control requires considerations of qualitative sources of power. In what is termed as "special relationships," these sources of power may arise from interpersonal or operational links between the investor and the investee. Indications may exist to suggest that an investor is more than a passive investor in another entity. For example, special relationships may arise from the following situations:

- The key management personnel of the investee are current or previous employees of the investor;

- The investee's operations are dependent on the investor (for example, provision of critical services or specialized knowledge);
- A significant portion of the investee's activities are conducted on behalf of or may significantly involve the investor; or
- The investor's exposure or rights to returns is proportionately higher than its ownership interests in the investee.

These indicators are subjective and are often difficult to establish. However, the spirit of IFRS 10 requires consideration of all sources of power including interpersonal and operational relationships between an investor and the investee.

Ability

Having power alone is not a sufficient basis to determine if control exists if the investor is not able to use the power to affect the investor's returns from its involvement with the investee. In the framework of control in IFRS 10, ability is made an explicit attribute in assessing control and is the link between power and returns. In past standards, ability is implied when power exists. In IFRS 10, an investor must demonstrate the ability to use the power to affect the returns to the investor from its involvement with the investee. In order to have power, and the ability to use that power, the rights that the investor (and others) has (have) must be substantive in nature.

Substantive rights An investor must have substantive rights, that is, the practical ability to exercise the rights that it is empowered with. The existence of substantive rights is subjective but it requires consideration of whether there are barriers that prevent the use of the rights. Examples of barriers include financial barriers, operational barriers, or legal and regulatory barriers.

An example of a financial barrier is the state of an option that an investor holds. We look again at the previous illustration (Illustration 2.2).

Assuming that the options are immediately exercisable, consider the following variations:

(a) The options are profitable (in the money).

In this scenario, Investor B has control with 59% ownership, as there is no financial barrier to Investor B to exercise the options.

(b) The options are clearly not profitable (deeply out of the money).

In this scenario, Investor A has control as the options are clearly not profitable, and there is a financial barrier to Investor B in the form of a financial disincentive to exercise the options.

(c) The options are out of the money but not deeply so.

This is an area of subjective evaluation and it is not clear if there is a sufficient barrier to prevent the exercise of the options. Other evidence may be required to assess if control exists.

We must also consider the effectiveness of contractual agreements.

For example, Investor A, a foreign investor, enters into an agreement with Investor B, a local investor that B will hold controlling shares in Entity X, on behalf of A. The local laws require a local investor to be the legal owner of the shares.

In this situation, Investor A must consider if the agreement with Investor B is a source of power that enables A to be able to make decisions about the relevant activities of Entity X. If the agreement is not effective and A faces substantial barriers in making decisions relating to Entity X, A would not have control over X.

Protective rights Rights must be substantive and not merely protective. Substantive rights, as explained, relate to rights to make decisions on the most significant activity (or activities) that affect an entity's returns. Protective rights on the other hand are decision-making rights on fundamental changes to an investee's activities and are often relating to exceptional events. An example of a protective right was given earlier when we discussed the rights of a franchisor.

Another example is the right of a lender to restrict the payment of dividends by the borrower when lending covenants are breached.

Unilateral ability An investor has ability if it is able to exercise its power on another entity without restrictions from other parties. The investor must have unilateral ability to direct the most significant activities that impact returns. Often, the decisions are made through a Board of Directors or management body. If an investor is able to effectively appoint, remove and remunerate members on the Board, it would have control over the entity that the Board governs.

Control is therefore different from joint control, which requires the sharing of control. Under IFRS 11 *Joint Arrangements*, joint control through a contract requires unanimous consent from parties to a joint arrangement on decisions involving the most relevant activities of that joint arrangement.

Currently exercisable The ability to use the power to affect returns must be currently exercisable. In the situations with potential ordinary shares, the rights must be exercisable in a timely manner to enable the holder to direct relevant activities to make returns. When one or more investors have rights over different activities, it is necessary to consider the activities that are most significant in impacting returns at the current point in time.

ILLUSTRATION 2.3 Decision making rights over different activities

Investor A and Investor B own 50% interest each in Entity X. Through contractual agreement, Investor A has power to make decisions on strategic policies relating to research and development while Investor B has power to make decisions on strategic policies relating to marketing.

This arrangement is not a joint arrangement as there is no requirement for unanimous consent on decisions relating to the most relevant activity of Entity X. It is necessary to determine the most relevant activity of Entity X. The following scenarios arise.

Scenario A: A has control if research and development is the most relevant activity of X.

Scenario B: B has control if marketing is the most relevant activity of X.

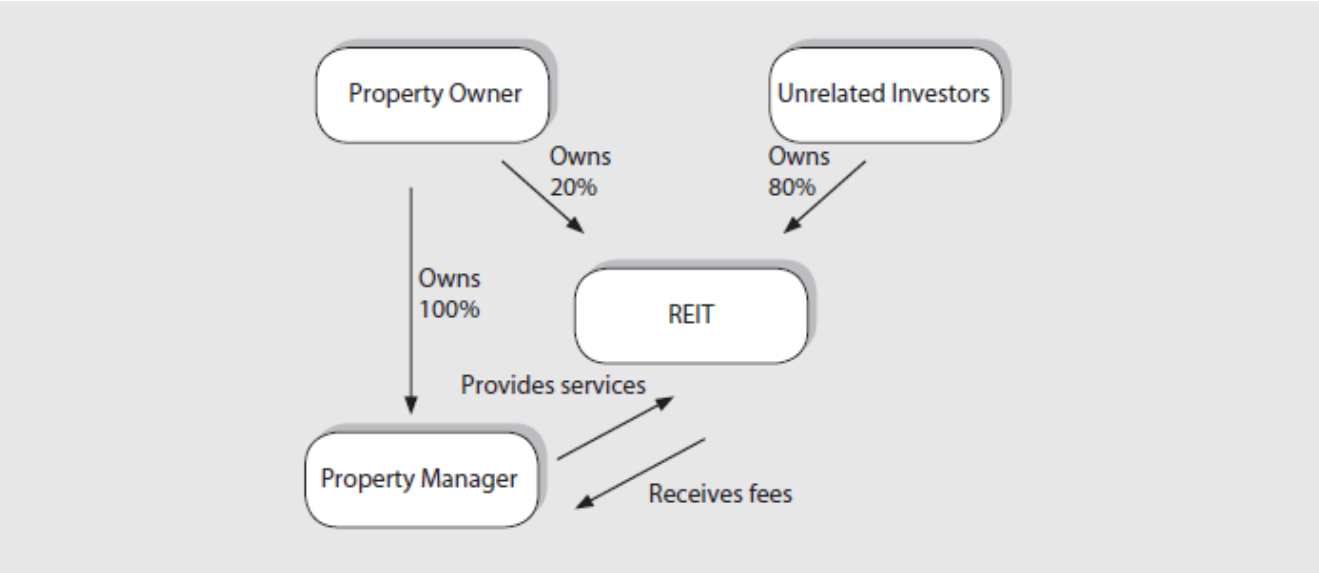
Scenario C: Neither A nor B has control if both activities are equally important. This is also not a situation of joint control as unanimous consent is not required from both investors on the most relevant activity. This situation is likely to lead to significant influence for each investor under IAS 28 *Investments in Associates and Joint Ventures*. Significant influence is discussed in greater detail in a subsequent section of this chapter.

Delegated Power In some situations, the "decision maker" (the party who is able to direct the most relevant activity that affects returns) acts on delegated power and is an agent. An agent is "a party primarily engaged to act on behalf and for the benefit of another party or parties (the principal(s)), and therefore, not control the investee when it exercises its decision-making authority."[17]

To control an investee, the decision maker must act for own interests and must be a principal and not an agent for other investors. In some situations, it may not be clear whether the decision maker is an agent or principal. This situation arises when the decision maker is also an investor. Consider the situation of a Real Estate Investment Trust (REIT), depicted in Figure 2.6. A property owner sets up a REIT and transfers property assets to the REIT. The property owner invests partially in the REIT (say 20% of the initial issued units). The remaining 80% units are issued to unrelated investors. Under a management agreement between the property owner and the REIT, a wholly owned subsidiary of the property owner manages the transferred property.[18] The management fees are variable and pegged to

3% of profits in line with industry practices. Hence, the property owner is both an investor and a manager and is exposed to returns from dividends and management fees. Does the property owner have control of the REIT?

FIGURE 2.6 Principal or Agent?



IFRS 10[19] provides factors to evaluate whether the decision maker is acting as an agent (for the interests of others) or acting as a principal (for own interests).

(a) *The scope of the decision-making authority*. We consider if the decision maker was significantly involved in the design of the investee. For example, in the REIT situation, the property owner is wholly involved in the set-up of the REIT and in determining the terms of the management contract. This involvement suggests that the property owner has the power and ability to determine an arrangement that would give it control. For example, the property owner may set up attractive remuneration terms for the property manager; or the property owner may make it more difficult for the property manager to be removed by other investors.

(b) *Rights held by other parties*. We consider the substantive rights held by other investors to remove and replace the decision maker. The subsidiary acting as the property manager of the REIT is also a "decision maker." Here, we consider the relative power of the investor who controls the decision maker and the other investors. Relative power of the other investors increases when it is easier for the other investors to remove the decision maker. It is easier to remove the decision maker when other investors are able to vote out the decision maker without cause. The relative power of other investors also increase when the likelihood and ability of other investors acting together to oust the decision maker is higher. For example, in the above illustration, if a 75% vote is required to remove the property manager, it may be difficult to remove the manager if 80% of votes held by other investors are distributed among many investors. The greater the number of investors, the more difficult it is for the other investors to act in concert to outvote the property owner who controls the property manager.

(c) *Remuneration*. A decision maker is more likely to be an agent if the remuneration (e.g. management fees) is commensurate with the services provided (e.g. management services) and the terms, conditions, or amounts are in line with those customarily provided for in a similar contract negotiated on an arms-length basis. In the example above, the fees of 3% are commensurate with property management fees charged by other property management companies on an arms-length basis.

(d) *Exposure to variability in returns from other interests*. In addition to remuneration for management services, a decision maker may have exposure to variable returns of an entity from ownership interests, guarantees provided and other arrangements. The greater the magnitude and variability of its aggregate returns, the more

likely it is that the decision maker is a principal. In comparing variability, the decision maker considers its exposure relative to total variability of returns of the investee. In our example above, exposure to variability in returns arises from the investment holding of 20% and the variable management fees of 3%. Even though the management fees reflect arms-length pricing for property management, they have to be included in determining the magnitude and variability of aggregate returns of the decision maker. The total exposure of 23% may not be considered sufficiently high to lead to control of the REIT.

Exposure and Rights to Variability of Returns from Involvement with an Investee

An investor has to consider total variable returns[20] that it is exposed to or have a right to as a result of its involvement with an investee. Variable returns, by definition are not fixed and may be only positive, only negative, or may be both positive and negative. Only positive returns may arise when an investor holds an option on another entity. Only negative returns may arise when an investor writes an option on another entity. In more typical cases, the investor is exposed to both positive and negative returns in the course of holding the investment (for example, when the investor has interests in issued ordinary shares). Returns do not simply include dividends or other profit distributions, which arise from passive holding. Returns also include changes in fair value, remuneration for servicing an investee's assets or liabilities, and typically returns that do not flow to other investors such as synergies and operational advantages to the investor.

Continuous Assessment of Control

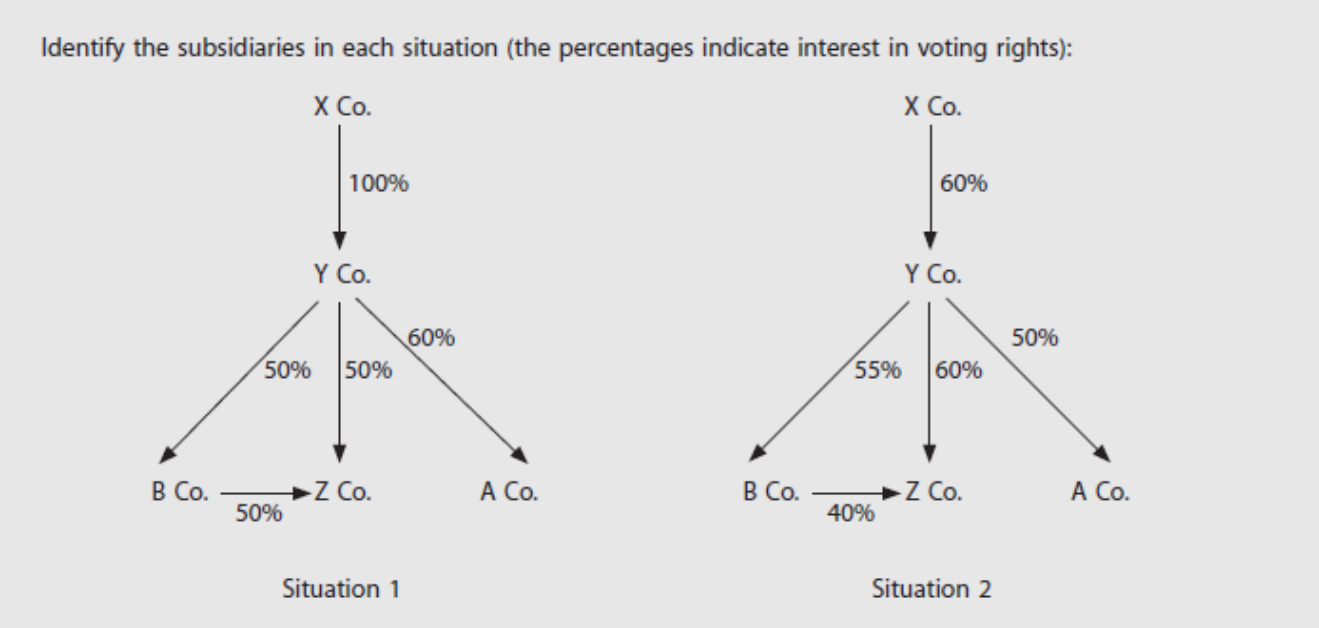
IFRS 10[21] requires an investor to re-assess control when facts and circumstances change with respect to the three elements of control (i.e. Power, Ability and Returns). Hence, IFRS 10 is not only holistic in its consideration of attributes of control but it is also dynamic. Power may be lost through subsequent events, for example, divestment of shares. However, power may also be gained or lost through events that do not involve the investor. For example, an investor may lose power when a management contract that gave the investor power has lapsed.

Direct and Indirect Control

An entity may invest directly in the shares of another entity or indirectly in the shares of other entities through intermediaries. For the test of control, IFRS 10 requires consideration of control from rights held directly or indirectly through subsidiaries. Hence, in a multi-level structure, control must be demonstrated at each intermediate level before the ultimate holding company is said to have control over the lowest-level company. If an entity is able to control the intermediary, the first entity is deemed to have control over all entities over which the intermediary has control. If the indirect holdings are through two or more intermediaries, the voting rights through each intermediary can be added together only if the ultimate investor controls the intermediaries. If there is a break in the line of control, the ultimate investor is not able to control the percentage of voting rights that the intermediary has in the lower-tier investee.

In Figure 2.7, assume X has control over Y if X's voting rights exceed 50%. Consider Situation 1, where X has control over Y (100% ownership) and A (X has indirect ownership of 60% in A through Y) but no control over B or Z. Although the indirect ownership that X has in Z is 75% (it has an indirect ownership of 25% through B and 50% through Y), X does not have any control over Z because there is a break in the control chain at B. Because X (through Y) does not control B, X also does not control the ownership interest that B has in Z. Hence, in this situation, the two percentages from the two linkages are not additive to determine control.

FIGURE 2.7 Affiliation structures



In Situation 2, X does not have control over A because the intermediate entity Y has only 50% interest in A. In this situation, A is an associate of Y and X (the concept of an associate is discussed in the next section). However, X has control over Y, B, and Z. The control over Y is clear since X has 60% interest in Y. Furthermore, X has indirect control of B through Y. Since X has indirect control of B, it also has indirect control of the 40% that B has in Z. Since X controls Y, it also controls the 60% that Y has in Z (even though the indirect interest in Z is only 36%). Thus, through the controlled intermediaries, X has control of 100% ownership interest of Z even though, arithmetically, the indirect ownership that X has in Z is only 49.2%. (While the effective percentage is not used for purposes of determining control, it is important for purposes of determining the majority and non-controlling share of profit.)

Assessing Control versus Allocation of Profit

In the previous section, we noted that IFRS 10 requires an investor to consider all facts and circumstances to determine if control exists. If control is deemed to exist, profit has to be allocated between controlling and non-controlling interests.

Impact of Potential Voting Rights on the Allocation of Profit

Potential voting rights that are currently exercisable or convertible are considered in determining control. However, they are excluded in the determination of allocation of profit between parent and non-controlling interests. IFRS 10 paragraph B89 states that the proportion of profit or loss and changes in equity allocated to the parent and non-controlling interests is determined on the basis of present ownership interests and does not reflect the possible exercise or conversion of potential voting rights. However, if the potential voting rights, in substance, give the holder access at present to the returns associated with an ownership interest, those rights should be considered (IFRS 10:B90).

Generally, the holding of an option, warrant, debt, or equity instrument that is potentially exercisable or convertible into ordinary shares does not give the holder a present right to the economic benefits arising from actual ownership of shares. For example, an option holder does not have residual risks in the net assets of a company or a right to dividends. However, if a special arrangement arises that such a right accrues to the holder of a derivative, the proportion of profit allocated to the parent and non-controlling interests should take into account such holdings.

ILLUSTRATION 2.4 Potential voting rights

Company A owns ten million ordinary shares and five million share warrants in Company B. Each share warrant is exchangeable for two ordinary shares. The share warrants are exercisable currently. The total number of issued ordinary shares is 20 million and the total number of shares potentially exchangeable from outstanding issued share warrants is 12 million. Although Company A owns only 50% of the total issued ordinary shares, its holding of the share warrants gives it *de facto* control over Company B, all things being equal. If Company A wishes, it can exercise its share warrants immediately and assume 62.5% ownership over Company B.

	Issued ordinary shares	Percentage of ordinary shares	Issued share warrants	Potential shares from warrants	Total shares (issued and potential)	Percentage of total shares
Company A.	10,000,000	50%	5,000,000	10,000,000	20,000,000	62.50%
Other investors . .	10,000,000	50%	1,000,000	2,000,000	12,000,000	37.50%
Total	20,000,000	100%	6,000,000	12,000,000	32,000,000	100.00%

Other examples where potential voting rights may determine control:

1. Share options that are currently exercisable are sources of potential voting rights, even if they are currently "out of the money," that is, when the exercise price exceeds the current market price. The fact that the share options are "out of the money" does not render them not currently exercisable. However, the "out of the money" condition must be evaluated further to determine if the potential rights are substantive.
2. When one investor has the right to increase its voting power or reduce other investors' voting power — and the investor can benefit from exercising the rights — the source of such rights should be considered as potential voting rights. For example, when an investor has an option to buy shares from other investors and this option is marginally out of money, such rights must be considered in determining the existence of control.

page 49

THE CONCEPT OF SIGNIFICANT INFLUENCE

The presence of control determines the existence of a parent-subsidiary relationship between two entities. We now consider a different type of relationship that is determined by "significant influence." In this relationship, the investor does not have control over the investee but has power to participate in the financial and operating policy decisions of the investee. The investor may participate in the policy-making processes of an investee (for example, through representation on the board of directors of the investee), although the investor may not have the power to govern the final outcome of the decision-making process. In this situation, the investor has more power than that of a passive investor (who has only voting rights at shareholders' meetings), but less power than that of a parent. IAS 28 *Investments in Associates and Joint Ventures* (hereinafter referred to as IAS 28)[22] describes such an investor as having "significant influence," and the investee is deemed an "associate" of the investor. Special accounting procedures described as the "equity method" are applied to determine the carrying amount of the investment in the investor's consolidated financial statements.

What Is Significant Influence?

Significant influence is the power to participate in the financial and operating policy decisions of the investee but is less than control and is not equivalent to joint control over those policies (IAS 28:3). Contrast this with control, which is the power that gives rise to the current ability to direct relevant activities. Joint control is the contractually agreed sharing of control over an arrangement and requires the unanimous consent of the parties sharing control over the strategic decisions relating to the relevant activities (IFRS 11).[23]

As with the definition of "control," "significant influence" is not defined in a deterministic manner but requires all evidence to be considered. The presumption is that an investor has significant influence over an investee, if the investor holds directly or indirectly (e.g. through subsidiaries), 20% or more of the voting power of the investee. However, this presumption need not hold if the investor can demonstrate clearly that the voting power does not give rise to significant influence for the investor. Conversely, an investor who holds directly or indirectly less than 20% of voting power in an investee is presumed not to have significant influence, unless the investor can clearly demonstrate evidence to the contrary. Hence, *prima facie*, significant influence is deemed to exist when an investor has ownership of 20% or more of the voting power and equal to or less than 50% of the voting power in an investee (ownership above the 50% threshold constitutes control). As with determination of control, "potential voting rights" page 50 should also be considered when determining the existence of significant influence.

We describe this as the default presumption for ease of reference. However, these numbers are by no means cast in stone. Whether an ownership interest is sufficient to lead to a position to exercise significant influence is quite subjective at times. There may be other evidence of significant influence such as the number of directors representing the investor on the investee's board, participation in policy-making processes and operational interdependencies between the investor and the associate (IAS 28:6). Thus, it is possible for an investee to be classified as an associate even if the investor holds slightly less than 20% ownership but is able to exercise influence at the board level. On the other hand, it is also possible that ownership even in excess of 20% may not lead to any significant influence. As with consolidation, an investor must disclose in the financial statements the reasons for not complying with the default assumption (IFRS 12 paragraphs 9(d) and 9(e)).

Hence, the quantitative thresholds may be overridden if evidence to the contrary exists to indicate that significant influence does or does not exist. The degree of ownership generally dictates the extent of influence over policy decision-making in the investee company.

What Is An Associate?

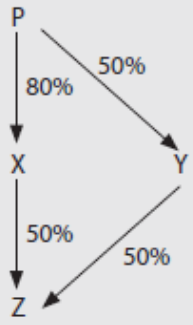
An associate is an entity in which the investor has **significant influence** and which is neither a subsidiary nor a joint arrangement of the investor (IAS 28:3). If the investee is an associate, the investor is not referred to as the "parent." As defined in IFRS 10, the term "parent" applies only to relationships where the investor has control over the investee.

Direct and Indirect Significant Influence

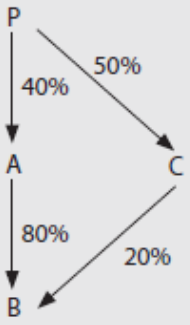
A previous version of IAS 28 states clearly that indirect holdings must be held through subsidiaries for the default assumption to hold. However, the current version of IAS 28 implies that subsidiary holding is an example (but not the only situation) whereby an ultimate investor may have significant influence indirectly over other entities. Hence, other evidence of significant influence must be taken into account when determining if an investee at the lower tier of the hierarchy is an indirect associate of an investor.

Consider the following multi-level arrangements (percentages indicating the voting rights held by the higher-level company) shown in Figure 2.8.

FIGURE 2.8 Multi-level structures



Situation 1



Situation 2

Using the percentage criterion of ≥ 20% and ≤ 50% of the investee's voting rights as evidence of significant influence, P, in Situation 1, has significant influence directly over Y (50% direct interest in Y) and significant influence indirectly over Z. Although the indirect interest that P has in Z is 65% (40% through X and another 25% through Y), P has no control over Y, and hence does not have control over Z. In this scenario, Z is an associate and not a subsidiary of P.

In Situation 2, P has significant influence directly over A (40% voting rights) and C (50% voting rights). P has an indirect interest in 42% of B (32% through A and 10% through C). However, P has no control over A or C; whether P has significant influence over B must take into account all other evidence to determine whether P is able to effectively influence B through A and C. The current version of IAS 28 does not imply that indirect holdings of associates must be held through a subsidiary. Hence, P must demonstrate that its significant influence over B is not diminished by the fact that P has only significant influence and not control over the intermediate investors, A and C.

ACCOUNTING FOR BUSINESS COMBINATIONS

After determining if a parent-subsidiary relationship exists with respect to the "control" test of IFRS 10, one can proceed to consolidate the financial statements of the subsidiaries together with the parent. Consolidation is a line-by-line combination of the financial statement items of a parent and its subsidiaries. The accounting standards that are relevant to the preparation and presentation of consolidated financial statements are:

1. IFRS 3 *Business Combinations;* and
2. IFRS 10 *Consolidated Financial Statements.*

Overview of the Scope of IFRS 3

International Financial Reporting Standard (IFRS) 3 *Business Combinations* (hereinafter referred to as IFRS 3)[24] supersedes IAS 22 *Business Combinations.*[25] The objective of IFRS 3 is to specify the requirements governing the method of accounting, disclosure, and presentation of the financial statements of a reporting entity comprising one or more separate entities that are brought together in a business combination. IFRS 3 deals with business combinations generally, of which a parent-subsidiary relationship is an example. IFRS 10 *Consolidated Financial Statements* applies specifically to the preparation and presentation of consolidated financial statements for parent-subsidiary combinations.

A business combination is the bringing together of one or more combining entities into a reporting entity (IFRS 3). Business combinations for example, result from one entity:

1. Purchasing the equity of another entity;
2. Purchasing the net assets of another entity;
3. Transferring its net assets, together with the net assets of other combining entities to a newly formed entity; or page 52
4. Purchasing some of the net assets of another entity that together form one or more businesses.

Purchase of Net Assets versus Purchase of Equity

Conceptually, a "group," which comprises a parent and its subsidiaries, is a type of "business combination." A group is a business combination in which the acquirer is a "parent" and the acquiree is a "subsidiary," and the business combination results from the parent acquiring a controlling interest in the equity (not net assets) of the subsidiary. In this business combination, both parent and subsidiary retain their status as separate legal entities. However, from an economic perspective, they are a single reporting entity. Two sets of financial statements must be prepared — separate financial statements for the legal entity and consolidated financial statements for the group.

Contrast this with a business combination whereby an acquirer buys over the net assets of another entity. A business combination such as this, which is brought about by the purchase of net assets (not equity) of the other entity, does *not* result in a parent-subsidiary relationship. In this case, the net assets of the other entity were assessed to have met the definition of business[26] under IFRS 3. In this business combination, the legal and economic entity are one. The separate financial statements of the acquirer provide information about the enlarged entity. In such a business combination, a set of consolidated financial statements is not required. In the event that the net assets do not constitute a business under IFRS 3, the transaction will not qualify as a business combination and this transaction is an acquisition of assets or a group of assets. Accordingly, the acquisition method of accounting under IFRS 3 does not apply. In this situation, there is only one set of financial statements, that is, the standalone financial statements of the purchaser of the assets. The assets acquired are subsumed within the standalone financial statements of the purchaser. The focus of this chapter is on the business combination that results in a parent-subsidiary relationship.

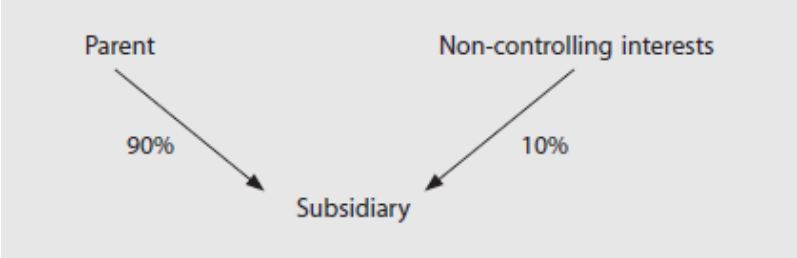
IFRS 3 presumes that there is a dominant party in a business combination, which may be identified as an "acquirer." Hence, IFRS 3 does not apply to business combinations that (1) bring together separate entities to form a joint arrangement, or (2) involve entities under common control. Accounting for entities under common control is explained in greater detail in a later chapter.

CONSOLIDATION THEORIES

Theories of consolidation are critical when the percentage of ownership in a subsidiary by a parent is less than 100%. Such a subsidiary is described as a "partially-owned subsidiary," where the remaining percentage not owned by the parent company is owned by shareholders, who are collectively referred to as "non-controlling interests." The identities of these other shareholders are not important as they do not have any controlling interest in the subsidiary. They are also referred to as "outside interests" of subsidiary companies, suggesting that they are not within the "group" comprising a parent and its subsidiaries.

For example, in Figure 2.9, a parent owns 90% in a subsidiary while other shareholders (collectively known as non-controlling interests) own 10% of the shares of the subsidiary.

FIGURE 2.9 Non-controlling interests in a partially owned subsidiary



The economic reality is that both the parent and the non-controlling interests have a proportionate share of the subsidiary's:

1. Net profit;
2. Dividend distribution;
3. Share capital; and
4. Retained profits and other changes in equity.

Non-controlling interests in a partially owned subsidiary arise when:

1. A parent company sells part of its stake in a subsidiary to external shareholders. These sales are often termed "equity carve-outs";[27]
2. A parent company buys a majority stake in a subsidiary from existing owners who eventually become non-controlling shareholders of the subsidiary;
3. A parent company and non-controlling shareholders are the founding shareholders of a newly incorporated entity.

In contrast, a subsidiary whose shares are owned completely by its parent company is termed a "wholly owned subsidiary." To understand the impact of consolidation theories on the practice of consolidation, consider the two situations below.

Figure 2.10 shows the ownership structure of a wholly owned subsidiary. The combined entity comprising the parent company and its subsidiary is wholly owned by the parent company's shareholders.

FIGURE 2.10 Ownership of the combined entity involving a wholly owned subsidiary

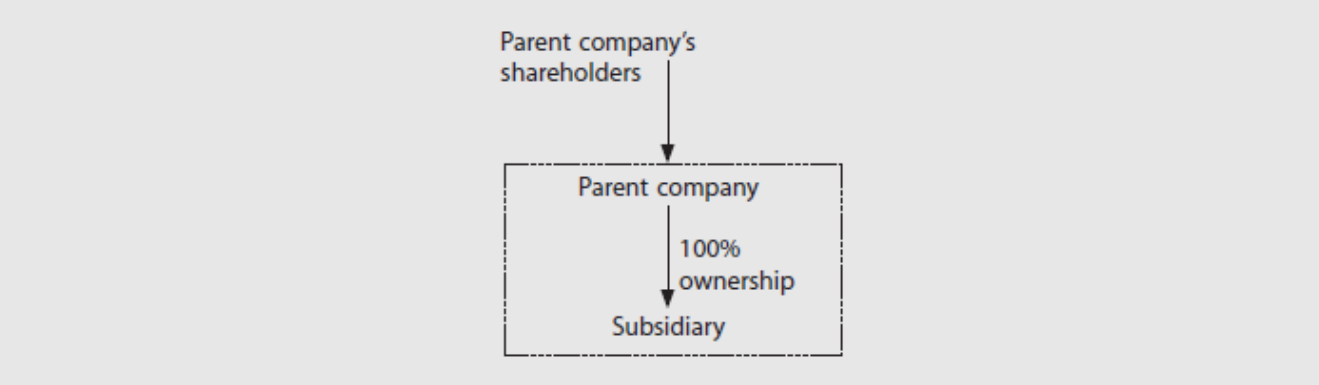
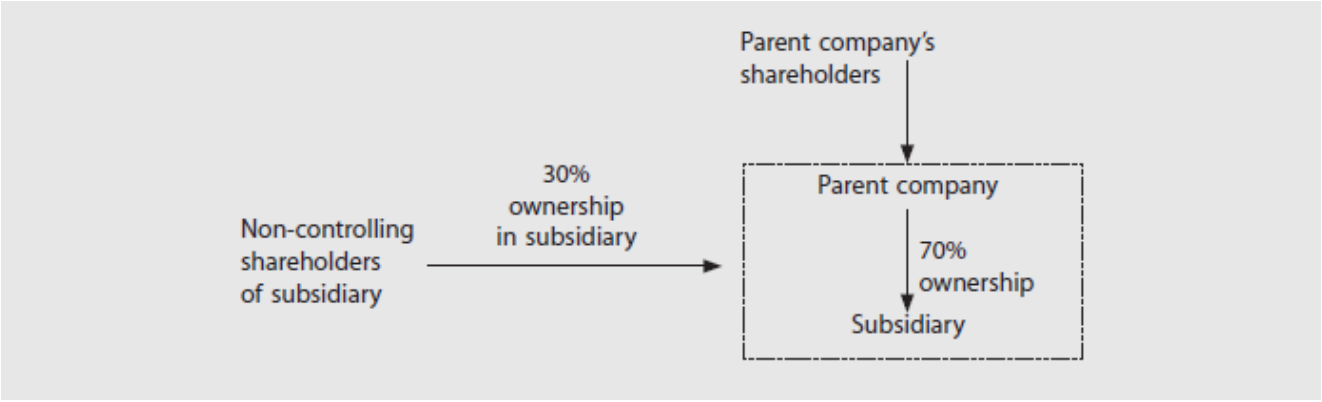


Figure 2.11 shows the ownership structure involving a partially owned subsidiary. In this example, the parent company owns 70% of the subsidiary and the remaining 30% are owned by non-controlling shareholders.

FIGURE 2.11 Ownership of the combined entity involving a partially owned subsidiary



From Figure 2.11, we can see two groups of shareholders of the combining entity emerge:

1. The parent company's shareholders; and
2. The non-controlling shareholders of the subsidiary.

The parent company's shareholders own the parent company and indirectly own 70% of the ownership interest of the subsidiary. Non-controlling shareholders directly own 30% of the subsidiary.

When the consolidated financial statements are prepared, which combine the financial statements of the parent company and its subsidiary, the following issues arise:

1. Who are the primary users of the consolidated financial statements? Are the consolidated financial statements prepared primarily for the parent company shareholders or for all shareholders of the combining entities?
2. How should non-controlling interests be reported in the consolidated statement of financial position? Should they be reported as equity, debt, or an unspecified mezzanine category (neither equity nor debt) in the statement of financial position?
3. When a subsidiary is acquired by a parent company, an exchange transaction is deemed to have occurred, justifying the use of fair values to measure the assets of the subsidiary at the date of acquisition. Should net assets of the subsidiary acquired be shown at full fair values or at the parent's share of the fair values? In other words, should the non-controlling interests also have a share of the fair value increment recognized at the date of acquisition?
4. Do non-controlling shareholders have a share of goodwill?
5. How should the net profit of a partially owned subsidiary be reported in the consolidated income statement? Should the total profit of the subsidiary be reported to show the profit that is retained by both controlling and non-controlling shareholders? Or should a deduction be shown for non-controlling interests' share of the current profit, leaving the balance that is retained by only the majority shareholders?

Standard setters have had to deal with the above issues for as long as consolidated financial statements existed. How each question is answered reflects one of two underlying theories in consolidation: the economic unit (entity) theory and the parent theory.[28] A discussion on the different theories goes back some 70 years when Maurice Moonitz issued his monograph on the entity theory of consolidated financial reporting.[29] Under the entity theory, the primary reporting objective is to present the financial performance and financial position of the combined entity from the perspective of both the parent company shareholders and the non-controlling shareholders of subsidiaries. Hence, the combined entity is seen as one economic unit (thus, the term "entity" or "economic unit" theory), which is owned by the two groups of shareholders. Contrast this with the parent theory, where the reporting

objective of consolidated financial statements is to provide information primarily for the shareholders of the parent company. Under the parent theory, the information needs of non-controlling interests are deemed as secondary, and non-controlling interests are not regarded as equity holders of the combined entity.

Entity (Economic Unit) Theory

Under the entity theory, non-controlling interests are deemed to be as important a stakeholder of the combined entity as are the majority shareholders. The distinction between the parent and the non- controlling interests is unimportant — both are included in equity. Hence, the entity theory requires a consistent accounting treatment for both parent and non-controlling interests. This perspective is reflected in the following statement in the FASB Discussion Memorandum (1991, p. 24):[30]

> Both the controlling and the non-controlling interests are part of the proprietary group of the consolidated entity, even though the non-controlling stockholders' ownership interests relate only to the affiliates whose shares they own.

Under the entity theory, the responses to the questions on the previous page are as follows:

1. The consolidated financial statements should be prepared and presented for the benefit of both groups of equity holders.
2. Non-controlling interests are shown as equity in the statement of financial position. The accounting equation will be as follows:

$$\begin{matrix}\text{Consolidated equity} \\ \text{(Controlling and non-controlling interests)}\end{matrix} = \begin{matrix}\text{Consolidated} \\ \text{assets}\end{matrix} - \begin{matrix}\text{Consolidated} \\ \text{liabilities}\end{matrix}$$

3. The fair values of assets and liabilities of subsidiaries at the date of acquisition should be reported in full to reflect the stakes of both parent company and non-controlling shareholders in the net assets of the subsidiaries. A consistent accounting treatment is applied to both parent's and non-controlling shareholders' interests in the net assets of a subsidiary. Hence, if the assets and liabilities of an acquired subsidiary are shown at fair values at the date of acquisition, non-controlling interests are also deemed to have a share of the fair value increment arising from the revaluation of net assets to fair value.
4. Goodwill is an asset of the economic unit, and should be reflected in full. Hence, internally generated goodwill that is not evidenced by an exchange transaction is recognized in full as at the date of acquisition.
5. Net profit of the subsidiary should be reported in full as accruing to both majority and non-controlling shareholders. Non-controlling interests' share of current profit is not shown as a deduction of profit.

Parent Theory

The parent theory focuses on the information needs of the parent company shareholders. Features of the parent theory are as follows:

1. The consolidated financial statements are prepared and presented primarily for the benefit of the parent company shareholders. The informational needs of the non-controlling interests are better served by the separate financial statements of the subsidiary than the consolidated financial statements.
2. Claims by non-controlling interests in the net assets of a subsidiary are shown as a separate component in the statement of financial position. They are presented in a category that is neither debt nor equity in the consolidated statement of financial position. The accounting equation in the consolidated statement of financial position is presented as follows:

$$\begin{matrix}\text{Consolidated equity} \\ + \\ \text{Non-controlling interests}\end{matrix} = \begin{matrix}\text{Consolidated} \\ \text{assets}\end{matrix} - \begin{matrix}\text{Consolidated} \\ \text{liabilities}\end{matrix}$$

3. Since the focus is on the parent's perspective, only the parent's share of the fair values of the assets and liabilities of subsidiaries at the date of acquisition should be reported. There is no "acquisition" of the subsidiary by the non-controlling interests. Hence, the non-controlling interests in the assets and liabilities of a subsidiary at the date of acquisition are shown at book (not fair) value.
4. Goodwill is an asset of the parent (not the economic unit) and should be restricted to the parent's share. Hence, the internally generated goodwill of a subsidiary that belongs to the non-controlling shareholders of a subsidiary is not recognized.
5. Non-controlling interests' share of current profit is shown as a deduction from profit to show the final profit that is attributable to parent company shareholders.

The differences between the two theories are summarized in Table 2.1.

TABLE 2.1 Summary of differences between the parent theory and the entity theory

Attributes	Parent theory	Entity theory
Fair value differences in relation to identifiable assets and liabilities at date of acquisition	Recognized only in respect of parent's share	Recognized in full, reflecting both parent's and non-controlling interests' share of fair value adjustments
Presentation of non-controlling interests	Neither equity nor debt	As part of equity
Goodwill	Goodwill is parent's asset	Goodwill is an entity asset and should be recognized in full as at date of acquisition

Proprietary Theory

The proprietary theory is more remote with respect to consolidation practices. However, the theory is relevant to accounting for joint ventures, which are characterized by an arrangement of joint control between two venturers. Under the proprietary theory, the parent is seen as having a direct interest in a subsidiary's assets and liabilities. This perspective results in *pro-rata* or *proportional consolidation*, whereby the parent's interest is directly multiplied by each individual asset or liability of the subsidiary and combined with the parent's assets and liabilities.

The Implicit Consolidation Theory Underlying IFRS 3

Developments in accounting standards underscore an evolutionary shift toward the entity theory. IFRS 3 (2008) permits the recognition of non-controlling interests' share of goodwill. For each business combination, an acquirer may choose to recognize, or not recognize, non-controlling interests' share of goodwill. IFRS 3 (2004) falls short of recognizing the non-controlling interests' share of goodwill on the consolidated statement of financial position, although it recognizes fair value adjustments of identifiable assets in full, for both majority and non-controlling interests in subsidiaries. The previous standard that governs accounting business combinations, IAS 22, was a mixture of both the parent and entity theories. IAS 22 allowed an acquirer to either recognize or ignore non-controlling interests' share of fair value adjustments of a subsidiary's identifiable assets and liabilities. Further, the companion standard, IFRS 10 *Consolidated Financial Statements* requires non-controlling interests to be presented in equity separately from the equity of the owners of the parent. The requirement to show non-controlling interests as equity is consistent with the entity theory. However, the separation of non-controlling interests from the equity of the owners of the parent reflects a perspective that is more consonant with the parent theory.

Nonetheless, the movement toward applying the full entity theory is clearly underway. As a result of the convergence movement, IFRS 3 (2008), applicable to periods beginning 1 July 2009, permits the inclusion of the non-

controlling interests' share of goodwill as at the date of acquisition. The Financial Accounting Standards Board (FASB) in the United States released the revised Statement of Financial Accounting Standard (SFAS) 141, now known as Codification Topic No. 805 *Business Combinations*, applicable for fiscal years beginning 15 December 2008, which requires the recognition of the non-controlling interests' share of goodwill. The changes are part of an ongoing effort to improve international comparability with proposed changes in the IAS® Standards. Goodwill attributable to non-controlling interests in a partially owned subsidiary would be recognized under SFAS 141.[31] The FASB did not permit a choice on the initial measurement of non-controlling interests. Non-controlling interests are to be measured at full fair value (i.e. including goodwill). Hence, full convergence is not fully achieved as the Board permits a choice for acquirers not to recognize non-controlling interests' share of goodwill at initial recognition.

Illustration 2.2 shows the differences in effects on the consolidated statements prepared under the parent and entity theories. Accounting for business combinations in accordance with IFRS 3 and the consolidation process in IFRS 10 are explained in subsequent chapters. Hence, this illustration is an introduction to the more intricate processes of consolidation.

In particular, the differential effects relating to the following are shown:

1. Measurement of the fair value of the net assets of the acquired subsidiary at the date of acquisition;
2. Determination of goodwill of the acquired subsidiary;
3. Determination of non-controlling interests (NCI) at the date of acquisition.

Review Illustration 2.5 to appreciate the conceptual flavor of the two theories and revisit this chapter after you have understood the technical process of consolidation. In Illustration 2.5, the financial statements are shown with a full entity theory interpretation.

In Illustration 2.5, the financial statements are shown with a full entity theory interpretation.

ILLUSTRATION 2.5 Parent versus entity theory

P Co purchased an 80% interest in S Co on 1 January 20x1 for $1,200,000. At the date of acquisition, S Co showed the following balances:

Share capital of S	$ 800,000
Retained earnings of S	400,000
Book value of equity	$1,200,000

Book value of property was undervalued by $100,000 as at 1 January 20x1. The fair value adjustment was not recognized by S at the date of acquisition. For simplicity, ignore the effects of tax and depreciation of the fair value adjustment. (In subsequent chapters, the effects of tax and depreciation and amortization of fair value adjustments are explained.) The fair value of non-controlling interests as at 1 January 20x1 was $300,000. The consolidated financial statements are shown below in abridged form.

Income Statement For the Year Ended 31 December 20x1						
			Consolidated financial statements			
				Entity theory		
(All figures are in $'000)	P Co	S Co	Parent theory	Parent's share	NCI's share	Total
Net profit after tax (Note 1)	$ 350	$ 70	$ 420	$ 406	$ 14	$ 420
Non-controlling interests (Note 1)			(14)			
Net profit after non-controlling interests			$ 406			
Retained earnings, 1 January	3,000	400	3,000	3,000	80	3,080
Retained earnings, 31 December	$3,350	$470	$ 3,406	$ 3,406	$ 94	$3,500

Statement of Financial Position As at 31 December 20x1						
			Consolidated financial statements			
				Entity theory		
(All figures are in $'000)	P Co	S Co	Parent theory	Parent's share	NCI's share	Total
Fixed assets (Note 2)	$3,000	$1,000	$4,080			$4,100
Investment in S Co	$1,200					
Inventory	500	200	700			700
Cash	500	150	650			650
Goodwill on consolidation (Note 2)			160			200
Liabilities	(450)	(80)	(530)			(530)
Net assets	$4,750	$1,270	$5,060			$5,120
Share capital	$1,400	$ 800	$1,400	$1,400	$160	$1,560
Retained earnings	3,350	470	3,406	3,406	94	3,500
Non-controlling interests share of fair value adjustments and goodwill (Note 3)					60	60
Equity (Note 3)	$4,750	$1,270	$4,806	$4,806	$314	$5,120
Non-controlling interests (Note 3)			254			
Equity and non-controlling interests	$4,750	$1,270	$5,060			$5,120

Explanatory notes (all figures are in $'000):

1. Net profit after tax and non-controlling interests.

Parent theory. Non-controlling interests' share of net profit after tax is computed as follows:

$$\begin{aligned} 20\% \times \text{S's net profit after tax} &= 20\% \times \$70 \\ &= \$14 \end{aligned}$$

Entity theory. Non-controlling interests are not shown as a deduction but are included in entity-wide net profit after tax. Disclosure is made of the amount of net profit after tax that relates to non-controlling interests.

$$\begin{aligned}\text{Parent's share of net profit after tax} &= (100\% \times \text{P's net profit after tax}) \\ &\quad + (80\% \times \text{S's net profit after tax}) \\ &= (100\% \times \$350) + (80\% \times \$70) \\ &= \$350 + \$56 \\ &= \$406\end{aligned}$$

2. Asset substitution: Elimination of investment in S and substitution with identifiable net assets of S and goodwill. Share capital and retained earnings of S at date of acquisition have to be eliminated against investment in S.

Parent theory. Goodwill is an asset of the parent; non-controlling interests have no share of goodwill.

$$\begin{aligned}\text{Goodwill} &= \text{Investment in S} - \text{P's ownership \%} \\ &\quad \times (\text{Fair value of S's identifiable net assets at date of acquisition}) \\ &= \$1{,}200 - (80\% \times \$1{,}300) \\ &= \$160\end{aligned}$$

Similarly, fair value adjustment of property is recognized only with respect to P's share.

Carrying amount of S's fixed assets	$1,000	
P's share of fair value increment of S's property at date of acquisition	80	(80% × $100)
Carrying amount of P's fixed assets	3,000	
Consolidated fixed assets	$4,080	

Entity theory. Goodwill is an asset of the entity; non-controlling interests have a share of the goodwill. Total goodwill of $200 comprises the following:

$$\begin{aligned}\text{Parent's share of goodwill} &= \$160 \\ \text{Non-controlling interests' share of goodwill} &= \text{Fair value of NCI} \\ &\quad - \text{Share of fair value of identifiable net assets} \\ &= \$300 - (20\% \times \$1{,}300) \\ &= \$300 - \$260 \\ &= \$40\end{aligned}$$

Similarly, fair value adjustment of property is recognized in total for the entity and non-controlling interests are credited with their share of the fair value adjustment.

Carrying amount of S's fixed assets	$1,000
Fair value increment for entity	100
Carrying amount P's fixed assets	3,000
Consolidated fixed assets	$4,100

3. Equity.

Parent theory. Non-controlling interests are shown separately from equity.

$$\begin{aligned}\text{Non-controlling interests} &= \text{Non-controlling interests \%} \times \text{Book value of S's equity} \\ &= 20\% \times \$1{,}270 \\ &= \$254\end{aligned}$$

Entity theory. Non-controlling interests are deemed to have an equity interest and are thus presented as a component in equity. As with the income statement, details of the non-controlling interests are shown as a component within equity. This presentation reflects a purist interpretation of the entity theory. However, as indicated earlier, IFRS 10 requires the non-controlling interests to be presented separately from the equity components of the owners of the parent. Hence, this pure form of presenting non-controlling interests as part of the combined equity component is not done in practice.

$$\begin{aligned}\text{Non-controlling interests} &= \text{Non-controlling interests \%} \\ &\quad \times (\text{Book value of S's equity} + \text{Fair value adjustment}) \\ &\quad + \text{NCI's share of goodwill} \\ &= 20\% \times (\$1{,}270 + \$100) + \$40 \\ &= \$314\end{aligned}$$

$$\begin{aligned}\text{NCI's share of fair value adjustment and goodwill} &= 20\% \times \$100 + \$40 \\ &= \$60\end{aligned}$$

CONCEPT QUESTIONS

CQ2.1 Parent-subsidiary relationship

Is there a parent-subsidiary relationship in each of the situations below? If the situation is ambiguous, identify the factors that will determine if a parent-subsidiary relationship exists.

(a) Company A signs an agreement with Company B to set up Company C in China. Both Company A and Company B will have 50% voting rights in Company C.

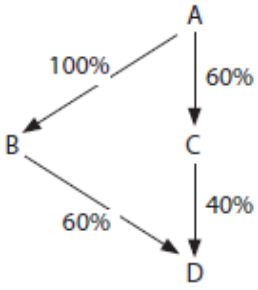
(b) Company A buys 100% of the net assets of Company B. The purchase price includes goodwill. Company B is subsequently dissolved.

(c) Company A arranges to have its shares acquired by Company B who issues new shares to the owners of Company A. The owners of Company A are also the executive directors of Company A. Company B gives three of five seats on the board of directors to the executive directors of Company A.

(d) Company B owes $20 million to Company A. As a result of financial difficulties, Company A agrees to accept shares issued by Company B as settlement of the liabilities. After the share issue, Company A owns 60% of Company B.

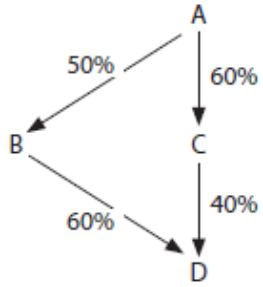
CQ2.2 Multi-level group structure

Using the voting rights criterion, identify the parent(s), subsidiaries and associates, if any. Arrows indicate share ownership of the top company in the lower company.



CQ2.3 Multi-level group structure

Identify the parent(s), subsidiaries and associates, if any, in the following structure:



CQ2.4 Parent-subsidiary relationship

An acquirer is called a “parent” when it acquires the net assets rather than the equity of another entity, called the “subsidiary.” Is this true or false?

CQ2.5 Parent-subsidiary relationship

A “parent” and a “subsidiary” continue to exist as separate legal entities even though they are economically one reporting entity. Is this true or false?

CQ2.6 Parent-subsidiary relationship

Company A is given the contractual right by billionaire Jill Gates to govern, on her behalf, the daily affairs and long-term policies of Company X, a company whose shares Ms Gates owns. Is Company X a subsidiary of Company A?

CQ2.7 Parent-subsidiary relationship

Company A, which owns 40% of Company Y, has the power given by contractual agreement with other shareholders of Company Y to appoint or remove the majority of the members of the board of directors of

Company Y. Is Company Y a subsidiary of Company A?

CQ2.8 Potential voting rights

Company A owns 40 million ordinary shares issued by Company B. The total number of ordinary shares issued by Company B is 100 million. At the same time, Company A also holds $10,000,000 of convertible debt instruments issued by Company B. Each $1 of debt is convertible into four ordinary shares of Company B. The total outstanding convertible debt at year-end is $12,000,000. All things being equal, does Company A have control over Company B under the following mutually exclusive circumstances?

(a) Company A has a current right to convert the debt into shares, but chooses to hold the debt securities to maturity.

(b) Company A has a current right to convert the debt into shares and also a right to sell its convertible debt instruments to the other existing shareholders for cash at fair value.

(c) Company A has a current right to convert the debt into shares, but at the same time, it also has an obligation to sell its convertible debt instruments to a third party for cash at fair value.

CQ2.9 Article-based discussion

Download the following articles from your library's electronic database (e.g. ProQuest or ABI-Inform) and analyze them:

(a) Beckman, J.K., 1995. "The Economic Unit Approach to Consolidated Financial Statements: Support from the Financial Economics Literature", *Journal of Accounting Literature*, 14, pp. 1–23.

(b) Pacter, P., 1992. "Revising GAAP for Consolidations: Join the Debate", *The CPA Journal*, July, pp. 38–47.

Required:

1. Explain the three competing concepts of consolidation as referred to in the articles and their effects on reported information.
2. Explain how Beckman uses financial economics' research regarding corporate restructuring transactions to support a particular concept of consolidation.

CQ2.10 Principal-agent relationship

A fund manager manages an investment fund based on narrowly defined parameters in local regulations. The manager has 5% interests in fund, and is paid 1% of net asset value as remuneration. The manager has decision-making authority over the fund. Does the fund manager have control over the fund?

CQ2.11 Principal-agent relationship

A fund manager has 20% interests in the fund he manages. The manager's remuneration is 1% of net asset value. The manager has wide decision-making discretion. The investors can remove the manager by a simple majority vote, but only for breach of contract. Does the fund manager have control over the fund?

CQ2.12 Principal-agent relationship

A fund manager has 20% interests in the fund he manages. The manager's remuneration is 1% of net asset value. The manager has wide decision-making discretion. The investors appoint a board of directors for the fund. The

board decides annually if the manager is to be appointed. The services of the manager are easily replaced by other fund managers in the market. Does the fund manager have control over the fund?

CQ2.13 Principal-agent relationship

An investee is a vehicle that purchases fixed rate securities, funded by a mix of equity and debt instruments. The equity provides first loss protection to the debt investors. An asset manager has 30% interest in the equity. The remaining 70% equity and all debt are held by dispersed group of investors. The manager is remunerated at 1% of net asset value. The manager can be removed by the investors by simple majority vote, without cause. Does the fund manager have control over the fund?

CQ2.14

Provide two examples where IFRS 10 requires an investor to consolidate its entity while IAS 27 does not require consolidation.

CQ2.15

What are the key changes from IAS 27 to IFRS 10 in determining if consolidation of investee is required? What are the reasons that the Board makes these changes?

CQ2.16

How are risks and rewards considered in determining control under IFRS 10?

CQ2.17

Explain why power in itself is not a sufficient basis to determine control.

CQ2.18

Explain the nature of returns in determining control under IFRS 10.

EXERCISES

E2.1 Calculation of the effects of consolidation under the parent and entity theories

Phi acquired an 80% ownership interest in Alpha on 1 January 20x1 for $1,000,000. At the date of acquisition, Alpha showed the following balances under shareholders' equity:

Share capital	$500,000
Retained earnings	200,000
Shareholders' equity	$700,000

At the date of acquisition, excess of fair value of Alpha's inventory over book value was $100,000. The inventory was still unsold as at 31 December 20x1. The fair value of non-controlling interests as at 1 January 20x1 was $250,000. The separate financial statements for Phi and Alpha for the year ended 31 December 20x1 are shown below. Ignore tax effects.

Income Statement
For the Year Ended 31 December 20x1

			Consolidated financial statements			
				Entity theory		
(All figures are in $'000)	Phi	Alpha	Parent theory	Parent	NCI	Total
				80%	20%	100%
Net profit after tax	$ 800	$280				
Non-controlling interests						
Net profit after non-controlling interests						
Retained earnings, 1 January	1,300	200				
Retained earnings, 31 December	$2,100	$480				

Statement of Financial Position
As at 31 December 20x1

			Consolidated financial statements			
				Entity theory		
(All figures are in $'000)	Phi	Alpha	Parent theory	Parent	NCI	Total
Property and plant	$2,300	$1,200				
Inventory	300	200				
Cash	100	50				
Goodwill on consolidation						
Investment in Alpha	1,000					
Liabilities	(600)	(470)				
Net assets	$3,100	$ 980				
Share capital	$1,000	$ 500				
Retained earnings	2,100	480				
Non-controlling interests' share of fair value increment and goodwill						
Equity	$3,100	$ 980				
Non-controlling interests						
Equity and non-controlling interests	$3,100	$ 980				

Required:

Complete the consolidated financial statements for Phi and Alpha for the year ended 31 December 20x1 under the parent and entity theories of consolidation.

E2.2 Calculation of the effects of consolidation under the parent and the entity theories

P acquired a 60% interest in S when the share capital and retained earnings of S were $100,000 and $150,000, respectively. At the date of acquisition, the book values of the assets of S were approximately equal to their fair values. The fair value of non-controlling interests as at the date of acquisition was $160,000.

Statement of Financial Position						
				Combined entity theory		
	P	S	Combined parent theory	Parent	NCI	Total
Other assets	$350,000	$320,000	$670,000			$670,000
Goodwill			?			?
Investment in S	240,000		?			?
Liabilities	(40,000)	(34,000)	(74,000)			(74,000)
Net assets	$550,000	$286,000	?			?
Share capital	$300,000	$100,000	$300,000	?	?	?
Retained earnings	250,000	186,000	?	?	?	?
NCI's share of goodwill					?	?
Equity	$550,000	$286,000	?	?	?	?
Non-controlling interests			?			
Equity and non-controlling interests	$550,000	$286,000	?			?

Required:

Complete the cells with "?" in the consolidated financial statements of P and S.

CASES

C2.1 Special purpose entities

On 2 October 2002, the Securities and Exchange Commission (SEC) filed a civil enforcement action against Andrew S. Fastow, the former Chief Financial Officer of Enron Corp., for alleged fraud. The complaints were related to six transactions, which mainly involved arrangements with outside third parties. These joint investments with third parties were typically structured as separate, special purpose entities ("SPEs") to which Enron and other investors contributed assets.

SPEs are either consolidated entirely onto the investing company's statement of financial position or treated as an investment in a separate entity not under the investing company's control, with off-balance-sheet treatment of the SPE's assets and liabilities. Under applicable accounting rules in the United States, an SPE could receive off-balance-sheet treatment only if independent third-party investors contributed at least 3% of the SPE's capital. Details of three of the six transactions are reproduced from an SEC's release[32] as follows:

page 66

(a) *RADR:* "In early 1997, Enron needed to divest itself of certain electricity-generating windmill farms to maintain certain financial benefits under applicable energy regulations. A sale to independent third-party investors would have entailed relinquishing control over these windmill farms, an eventuality Enron wanted to avoid. To maintain control of these assets, Fastow selected certain individuals to act as nominee investors in the entities (collectively referred to as 'RADR') that purchased the windmill farms. To provide the funds for the

purchase, Fastow made a secret personal loan to Kopper,[33] who in turn made loans to the nominee investors. Between August 1997 and July 2000, these entities generated approximately $2.7 million in unlawful profits. In July 2000, Enron repurchased the facilities from the entities, generating an additional gain of approximately $1.8 million. Between 1997 and 2000, Kopper made substantial payments to Fastow from these unlawful profits. One mechanism employed to funnel to Fastow money generated by this scheme was a 'gifting' program whereby Kopper and Kopper's domestic partner made annual 'gifts' of $10,000 to each member of Fastow's immediate family. Fastow chose the $10,000 amount to avoid IRS reporting rules."

(b) *Chewco:* "In 1997, Enron and the California Public Employees' Retirement System (CalPERS) were joint-venture partners in an off-balance-sheet investment vehicle called Joint Energy Development Limited Partnership (JEDI). When CalPERS wanted to cash out its investment in JEDI prior to investing in a larger Enron venture, Fastow and others at Enron formed a special purpose entity called Chewco to buy CalPERS' interest in JEDI thereby allowing Enron to continue accounting for JEDI as an off-balance-sheet entity. Initially, Fastow planned to serve as Chewco's general partner and as an equity investor, but was advised that his involvement would require disclosure by Enron. Fastow then selected Michael Kopper to fill the Chewco general partner role. Fastow secretly controlled Chewco and Kopper and, by virtue of that control, received a share of Chewco's profits as kickbacks from Kopper. In addition, Fastow siphoned funds from Enron by using his position as Enron's CFO to funnel funds to Chewco for his own benefit."

(c) *The Cuiaba Project:* "To avoid consolidation of debt related to a power-plant project in Cuiaba, Brazil, and to recognize earnings, Enron entered into a sham sale with LJM1.[34] Fastow arranged for LJM1 to buy an interest in the plant despite significant cost overruns, completion delays, and operational problems, after Enron failed to secure an independent buyer. However, in connection with this transaction, Fastow had entered into an unwritten side agreement with Enron (which Enron later honored) requiring Enron to buy back the interest it sold to LJM1 at a guaranteed profit regardless of the risks associated with the project."

Required:

For each of the three transactions, apply the tests of control and risks, and the rewards of ownership to explain if, and how, Enron had control over the assets or entities in question.

C2.2 Business Trusts

In its Annual Report for the year ended 31 December 2013, IHH Healthcare Berhad, a Malaysian listed company disclosed that it had adopted Malaysian Financial Reporting Standard (MFRS) 10, *Consolidated Financial Statements*. MFRS 10 is based on IFRS 10 *Consolidated Financial Statements*. Following the adoption of MFRS 10, IHH Healthcare Berhad consolidated Parkway Life Real Estate Investment Trust (PLife Trust) and equity accounted Khubchandani Hospitals Private Limited (Khubchandani). IHH Healthcare Berhad Limited had 35.8% and 50% interest in PLife Trust and Khubchandani respectively. PLife Trust was previously accounted for as an associate and Khubchandani was accounted for as an indirect subsidiary.

page 67

The retrospective application of MFRS 10 resulted in IHH Healthcare Berhad presenting restated comparatives for 2012 in Note 45 of its 2013 Annual Report.

Go to the company's website http://www.ihhhealthcare.com and locate the 2013 Annual Report under investor relations.

Under Note 45, review the impact of the changes for comparative figures for year ended 31 December 2012.

Required:

1. In the case of a business trust or a real estate investment trust, why are voting rights in themselves not necessarily a conclusive basis to determine control?
2. Calculate the following ratios for IHH Healthcare Berhad before and after the change and explain how the accounting change affects each ratio:
   a. Net profit margin (Profit for the year/Revenue)

b. Return on total assets (Profit for the year/Total Assets)
c. Return on total equity (Profit for the year/Total Equity)
d. Leverage ratio (Total Liabilities/Total Equity)
e. Interest coverage ratio (Profit before interest and tax/Interest expense)

[1] Jensen, M., 1986. "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers", *American Economic Review*, 76, pp. 323–329.

[2] Shleifer, A. and R.W. Vishny, 1990. "Managerial Entrenchment: The Case of Manager-specific Investments", *Journal of Financial Economics*, 25, pp. 123–139.

[3] Amihud, Y. and B. Lev, 1981. "Risk Reduction as a Managerial Motive for Conglomerate Mergers", *Bell Journal of Economics*, 12, pp. 605–617.

[4] Fung, S., Jo, H. and S.C. Tsai, 2009. "Agency Problems in Stock Market-Driven Acquisitions", *Review of Accounting and Finance*, 8(4), pp. 388–430.

[5] Holthausen, R.W., 1990. "Accounting Method Choice: Opportunistic Behavior, Efficient Contracting and Information Perspectives", *Journal of Accounting and Economics*, 12, pp. 207–218.

[6] Holthausen, R.W. and R. Leftwich, 1983. "The Economic Consequences of Accounting Choice: Implications of Costly Contracting and Monitoring", *Journal of Accounting and Economics*, 5, pp. 77–117.

[7] Mian, S.L. and C.W. Smith, 1990. "Incentives for Unconsolidated Financial Reporting", *Journal of Accounting and Economics*, 12, pp. 141–171.

[8] Financial Accounting Standards Board, 1987. *Statement of Financial Accounting Standard 94*: *Consolidation of All Majority-owned Subsidiaries — an Amendment of ARB No. 51, with Related Amendments of APB Opinion No. 18 and ARB No. 43, Chapter 12*, FASB, Norwalk, CT.

[9] Klein, B. R. Crawford and A.A. Alchian, 1978. "Vertical Integration Appropriable Rents and the Competitive Contracting Process", *Journal of Law and Economics*, 21, pp. 297–326.

[10] Whittred, G., 1987. "The Derived Demand for Consolidated Financial Reporting", *Journal of Accounting and Economics*, 9(3), pp. 259–285.

[11] Seth, A., 1990. "Sources of Value Creation in Acquisitions: An Empirical Investigation", *Strategic Management Journal*, 11(6), pp. 431–447.

[12] Shleifer, A. and R.W. Vishny, 1990. "Managerial Entrenchment: The Case of Manager-specific Investments", *Journal of Financial Economics*, 25, pp. 123–139.

[13] John, T.A., 1986. "Mergers and Investment Incentives", *Journal of Financial and Quantitative Analysis*, 21, (4), pp. 393–414.

[14] Myers, S.C. and N.S. Majluf, 1984. "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have", *Journal of Financial Economics*, 13 June, pp. 187–221.

[15]IFRS 10 paragraph 7.

[16] IAS 33 *Earnings per share* defines potential ordinary shares as financial instruments or other contracts that give the holder the right to purchase ordinary shares.

[17] IFRS 10 Appendix B, paragraph B58.

[18] A REIT entails the presence of a trustee. The trustee who is appointed by the unitholders of the REIT is often also controlled by the property owner. The principles applied to the manager would also apply to the trustee. For simplicity, our illustration features only the manager.

[19] IFRS 10 Appendix B, paragraphs B60-B72.

[20] IFRS 10, Appendix B paragraphs B55-B57.

[21] IFRS 10, Appendix B paragraphs B80-B85.

[22] International Accounting Standards Board, 2014. *International Accounting Standard 28, Investments in Associates and Joint Ventures*, IFRS Foundation, London, United Kingdom.

[23] International Accounting Standards Board, 2014. *International Financial Reporting Standard 11: Joint Arrangements*, IFRS Foundation, London, United Kingdom.

[24] International Accounting Standards Board, 2008. *International Financial Reporting Standard 3: Business Combinations*, IASC Foundation, London, United Kingdom.

[25] International Accounting Standards Committee, 1998. *International Financial Reporting Standard 22: Business Combinations*, IASC Foundation, London, United Kingdom.

[26] Business is defined as an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing goods or services to customers, generating investment income (such as dividends or interest) or generating other income from ordinary activities.

[27] Schipper, K. and A. Smith, 1986. "A Comparison of Equity Carve-outs and Seasoned Equity Offerings: Share Price Effects and Corporate Restructuring", *Journal of Financial Economics*, 15 January/February, pp. 153–186.

[28] Another theory, the proportionate consolidation theory, applies more to accounting for joint-ventures.

[29] Moonitz, M., 1951. *The Entity Theory of Consolidated Financial Statements*, American Accounting Association, The Foundation Press, Brooklyn.

[30] Financial Accounting Standards Board, 1991. *Discussion Memorandum: An Analysis of Issues Related to Consolidation Policy and Procedures*. FASB, Norwalk, CT.

[31] Financial Accounting Standards Board, 27 July 2004. *Summary of FASB Tentative Decisions on Business Combinations*. FASB, Norwalk, CT

[32] SEC Press Release, "SEC Charges Fastow, Former Enron CFO with Fraud", 2002–2143, 2 October 2002. Reproduced with permission.

[33] Michael J. Kopper was a former employee of Enron Corp; he was a defendant in another action by the SEC.

[34] LJM Cayman, Limited Partnership (LJM1) was an off-balance-sheet partnership controlled by Fastow. Around February 2000, Fastow and others caused Enron to buy out the partnership interests of LJM1's two limited partners.

CHAPTER

3

Group Reporting II

Application of the Acquisition Method under IFRS 3

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand the difference between the investor's separate financial statements and consolidated financial statements;
- **LO2** Understand the differences in various modes of business combinations and the similarities in their economic substance;
- **LO3** Appreciate the significance of the acquisition method and its implications for consolidation;
- **LO4** Know how to determine the amount of consideration transferred;
- **LO5** Understand special issues concerning control and identification of the acquirer;
- **LO6** Know how to recognize and measure identifiable assets, liabilities, and goodwill in accordance with IFRS 3 requirements;
- **LO7** Understand the nature of goodwill;
- **LO8** Understand the nature and accounting for investment entities; and

LO9 Understand the accounting for settlement of pre-existing interests and employee compensation arrangements in business combinations.

INTRODUCTION

In many countries, companies must provide financial information at two levels:[1]

1. *Separate financial statements* of the legal entity in accordance with corporate regulation; and
2. *Consolidated financial statements*, if the legal entity is also a parent, in accordance with IFRS 10 *Consolidated Financial Statements.*

However, IFRS 10 paragraph 4 allows an exemption for the presentation of consolidated financial statements by a parent "if it meets all the following conditions:

1. It is itself a wholly-owned subsidiary, or is a partially-owned subsidiary of another entity and all its other owners, including those not otherwise entitled to vote, have been informed about, and do not object to, the parent not presenting consolidated financial statements;
2. Its debt or equity instruments are not traded in a public market (a domestic or foreign stock exchange or an over-the-counter market, including local and regional markets);
3. It did not file, nor is it in the process of filing, its financial statements with a securities commission or other regulatory organization for the purpose of issuing any class of instruments in a public market; and
4. Its ultimate or any intermediate parent of the parent produces financial statements that are available for public use and comply with IFRS, in which subsidiaries are consolidated or are measured at fair value through profit or loss in accordance with this IFRS."

IAS 27 *Separate Financial Statements* paragraph 4 defines separate financial statements as "those presented by an entity in which the entity could elect, subject to the requirements in this Standard, to account for its investments in subsidiaries, joint ventures, and associates either at cost, in accordance with IFRS 9 *Financial Instruments*, or using the equity method as described in IAS 28 *Investments in Associates and Joint Ventures*." The separate financial statements of the parent reflect the direct interests of the parent as a passive investor. The indirect interests that the investor has in the net assets of the investee are not reflected in the separate financial statements of the investor when the cost or fair value method is used.

Income in the separate financial statements is recognized on the basis of direct interest in the dividends or other distributions declared by the investee. Investment in the statement of financial position is carried at either cost or fair value. For financial periods beginning on or after 1 January 2016, investors may choose to account for investments in subsidiaries, joint ventures, and associates under the equity method. Although there is a greater alignment of reporting of income and net assets between the separate and consolidated financial statements, the equity method does not replicate consolidation fully. These statements typically do not reflect the profit or net assets of the investee that the investor indirectly has an interest in.

Hence, the investor's separate financial statements reflect the legal interest in the investment and its direct benefits (dividends) rather than the larger economic entitlements (share of profits) that "control" or "significant influence" brings.

As economic boundaries are enlarged through "control" that an investor has over the decisions of the most relevant activities of an investee, another level of reporting is required. This level of reporting is described as the consolidated financial statements, which present the financial statements of a group as those of a single economic entity (IAS 27:4).

Table 3.1 summarizes the accounting treatment required at each of the two levels.

TABLE 3.1 Two levels of reporting

	Investor's separate financial statements	Consolidated financial statements
Investment in a subsidiary (where "control" exists)	IAS 27 Investment is carried at: 1. Cost 2. In accordance with IFRS 9 (as a financial instrument) or 3. Using the equity method	IFRS 10 Investment is eliminated and net assets of subsidiary are consolidated with those of the parent
Investment in an associate (where"significant influence" exists) or investment in a joint venture (where "joint control" exists giving rise to rights of net assets in a joint arrangement)	IAS 28 Investment is carried at: 1. Cost 2. In accordance with IFRS 9 (as a financial instrument) or 3. Using the equity method	IAS 28 Investment is accounted for using the equity method

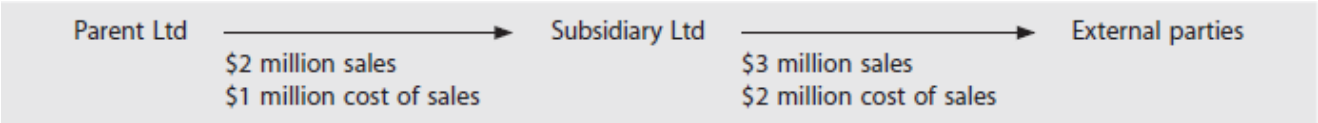
Special requirements apply to parent companies that meet the definition of an "investment entity." Three conditions are required in determining whether a parent is an investment entity or not (IFRS 10 Appendix A). First, an investment entity provides investment management services to one or more investors who place funds with the entity. Second, these funds are invested solely for the purpose of obtaining returns from capital appreciation, investment income, or both. Finally, to achieve its purpose, the evaluation of the performance of substantially all its performance is on a fair value basis. Furthermore, the entity will have to consider whether it has the typical characteristics of an investment entity. While the typical characteristics are not criteria for classification as an investment entity, the entity would, in the absence of any of the typical characteristics be required to disclose the reasons for concluding that it is an investment entity. Parent companies that meet the criteria of investment entities do not need to consolidate its subsidiaries but must measure its investments in subsidiaries at fair value with changes in fair value taken to the income statement. Appendix 3A provides more explanations on the requirements and accounting for investment entities.

OVERVIEW OF THE CONSOLIDATION PROCESS

Although two sets of accounts have to be prepared — the investor's separate financial statements and consolidated financial statements — only one set of "books" or "ledgers" has to be kept by the legal entity. There are no "ledgers" kept for the group entity. Instead, *consolidation worksheets* are prepared at the end of each reporting period, which combine the separate financial statements of a parent and its subsidiaries and include *consolidation elimination entries* and *adjustments* to remove the effects of intragroup transactions.

An example of a partial consolidation worksheet is shown below. Assume that Parent Ltd makes a sale of $2,000,000 to Subsidiary Ltd, which in turn sells the inventory to external parties in the same financial period for

$3,000,000. The original cost of the inventory is $1,000,000 and the cost of sales in Parent Ltd's books is $1,000,000.



The intercompany sale of $2,000,000 will be shown under Parent Ltd's separate financial statements, and a corresponding cost of sale of $2,000,000 is shown in Subsidiary Ltd's separate financial statements. The consolidation worksheet allows us to combine the financial statements of Parent Ltd and Subsidiary Ltd, and eliminate the intragroup sale. Since the purpose of consolidated financial statements is to show the financial performance, financial position, and cash flows of the economic (not legal) entity, transactions and unrealized profits within the group must be eliminated and adjusted. Hence, a consolidation elimination entry is effected on the worksheet:

Dr Sales	2,000,000	
Cr Cost of Sales		2,000,000

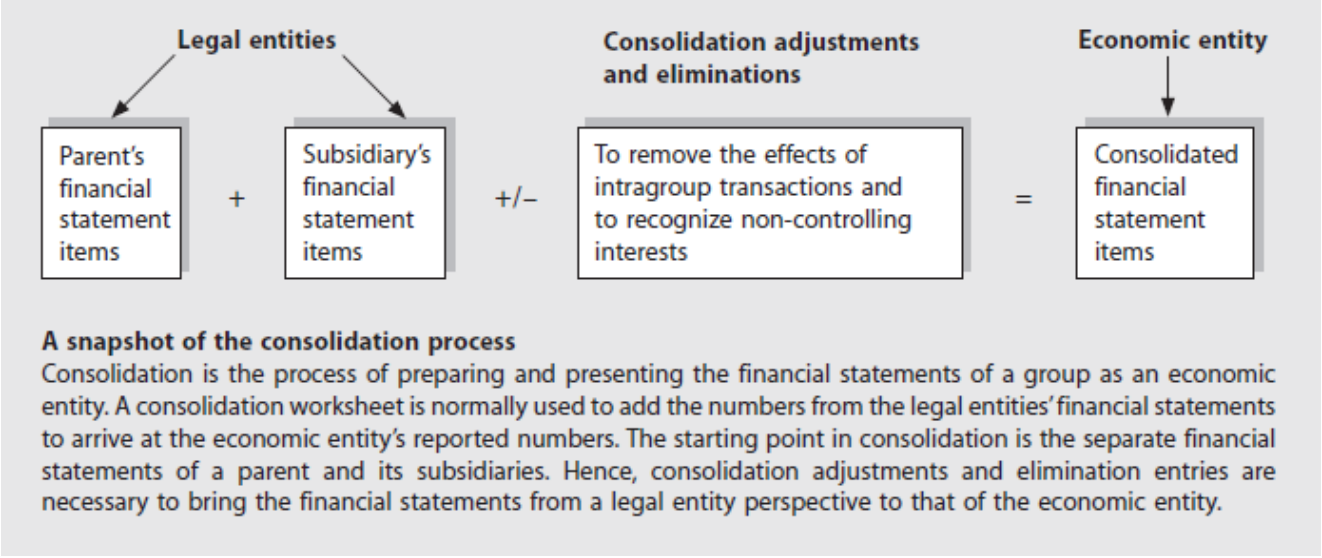
Elimination of intercompany sales during the year

	Parent's separate income statement (partial)	Subsidiary's separate income statement (partial)	Consolidation elimination entries and adjustments		Consolidated income statement (partial)
			Dr	Cr	
Sales	$2,000,000	$3,000,000	2,000,000		$3,000,000
Cost of sales	(1,000,000)	(2,000,000)		2,000,000	(1,000,000)
Gross profit	$1,000,000	$1,000,000			$2,000,000

In the above example, the final column shows the gross profit from the economic entity's perspective. An external sale of $3,000,000 is made by the group and the original cost of inventory for the goods sold is $1,000,000. Without the consolidation elimination entry, combined sales of $5,000,000 and combined cost of sales of $3,000,000 would overstate the sales and cost of sales respectively, resulting in a double-counting of transactions within the group.

Hence, consolidation elimination entries and adjustments have to be understood with reference to the original entries that are passed in the individual books of either the parent or the subsidiary. Figure 3.1 shows the concept of the consolidation worksheet. The individual line items in the separate financial statements of the parent and its subsidiaries are added together. Consolidation adjustments have to be made to eliminate intercompany transactions and balances, adjust for one-sided unrealized profit or loss arising from these transactions, and allocate profit to non-controlling interests.

FIGURE 3.1 The consolidation equation



A snapshot of the consolidation process

Consolidation is the process of preparing and presenting the financial statements of a group as an economic entity. A consolidation worksheet is normally used to add the numbers from the legal entities' financial statements to arrive at the economic entity's reported numbers. The starting point in consolidation is the separate financial statements of a parent and its subsidiaries. Hence, consolidation adjustments and elimination entries are necessary to bring the financial statements from a legal entity perspective to that of the economic entity.

The consolidation process is discussed in greater detail in Chapter 4. The purpose of this chapter is to explain the accounting of business combinations from the acquirer's perspective. In this chapter, we will see that business combinations may take different forms and not all forms will entail consolidation.

BUSINESS COMBINATIONS

A business combination is "a transaction or other event in which an acquirer obtains control of one or more businesses" (IFRS 3 App A). The assumption in IFRS 3 is that an acquirer can be identified in nearly all circumstances. An example of an arrangement where there is no acquirer among combining entities is a business combination involving entities under common control. In this business combination, the combining entities are controlled by the same party or parties before and after the business combination and the control is not transitory (IFRS 3 App B:B1). All combining entities retain their decision and control rights, and governance structures as in the pre-combination period. A business combination involving entities under common control is outside of the scope of IFRS 3.[2] We discuss business combinations under common control in greater detail in Chapter 14.

Business combinations may take different forms. In all the forms, two characteristics are present:

1. An acquirer has control of the business acquired; and
2. The target of the acquisition is a business.

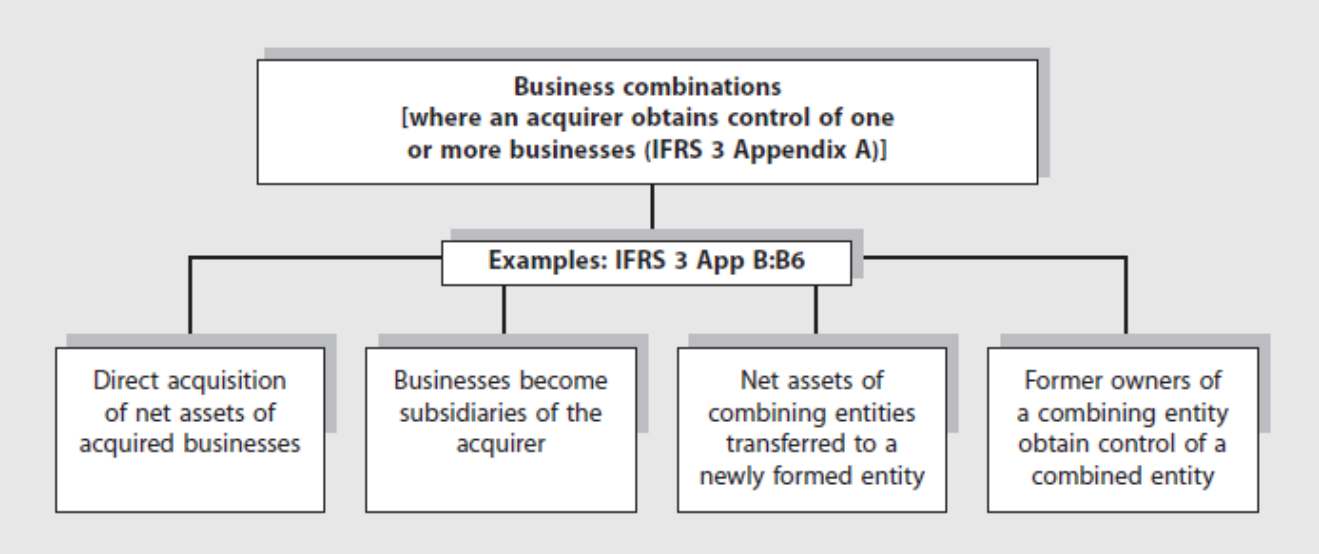
Chapter 2 has discussed the concept of control. An acquirer has control when it has all three attributes of control as defined by IFRS 10:[3]

1. Power over the acquiree;
2. Exposure or rights to variable returns of the acquiree arising from the acquirer's involvement with the acquiree; and
3. Ability to use its power to affect the amount of the acquiree's returns.

The acquiree has to be a business. IFRS 3[4] requires a business to have two essential characteristics. First, it is to be an integrated set of activities and assets, and second, it must be capable of being conducted and managed to provide returns to investors, other owners, members, or participants. Returns are economic benefits and may take different forms, for example, dividends, lower costs or other economic benefits. Hence, the focus of IFRS 3 is on the inputs and processes applied to those inputs. It is not necessary for a business to have outputs. For example, a start-up entity may not have outputs but must have an integrated set of activities and assets in place.

One of the most common forms of business combinations is the acquisition of control over the voting rights of an acquiree. However, it is important to note that this is but one example of a business combination. There are other forms of business combinations as shown in Figure 3.2.

FIGURE 3.2 Modes of business combinations

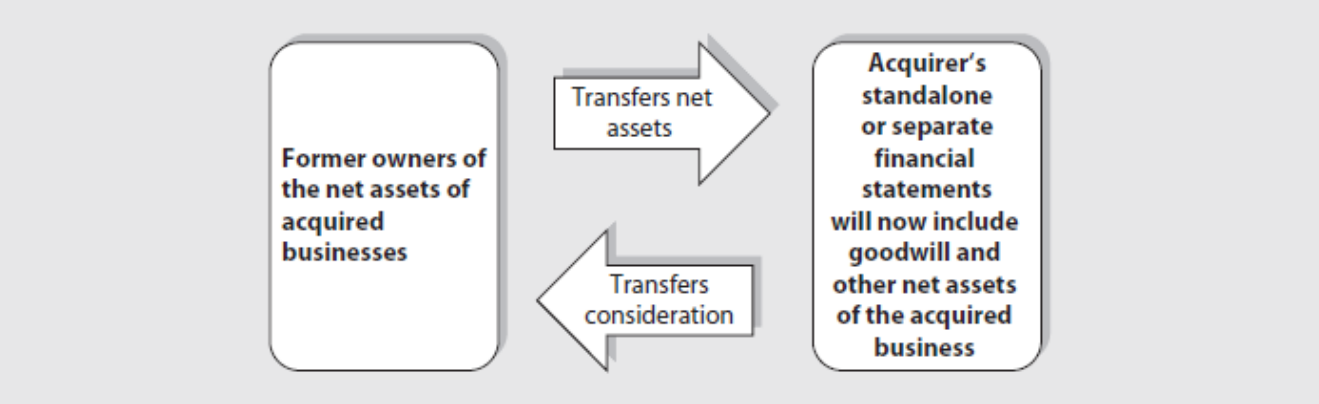


Direct Acquisition of Net Assets of Acquired Businesses

In this business combination, the acquirer acquires the net assets of the business directly and not through the purchase of voting rights in that entity. For example, a hotel chain may buy a particular hotel from the owners of the hotel. The acquirer is buying more than a fixed asset. It is buying a combination of assets, including the goodwill arising from the hotel's reputation and its clientele. Sometimes, the acquirer buys the net assets of a company that has failed. During the financial crisis of 2008, acquirers were buying the remnants of businesses of bankrupted companies. What was acquired was the agreed upon assets and liabilities of the bankrupt companies. There is no acquisition of voting rights as the companies had gone into receivership.

In this mode of business combination, the net assets of one or more businesses are legally merged into the acquirer.[5] This business combination does not give rise to a parent-subsidiary relationship. Goodwill is recognized in the standalone or separate financial statements of the acquirer. There is also no distinction between the legal entity and the enlarged economic entity comprising the acquirer and the acquired business. Consolidation is not required and non-controlling interests do not arise in this situation. Figure 3.3 graphically shows the exchange of net assets in this mode of business combination.

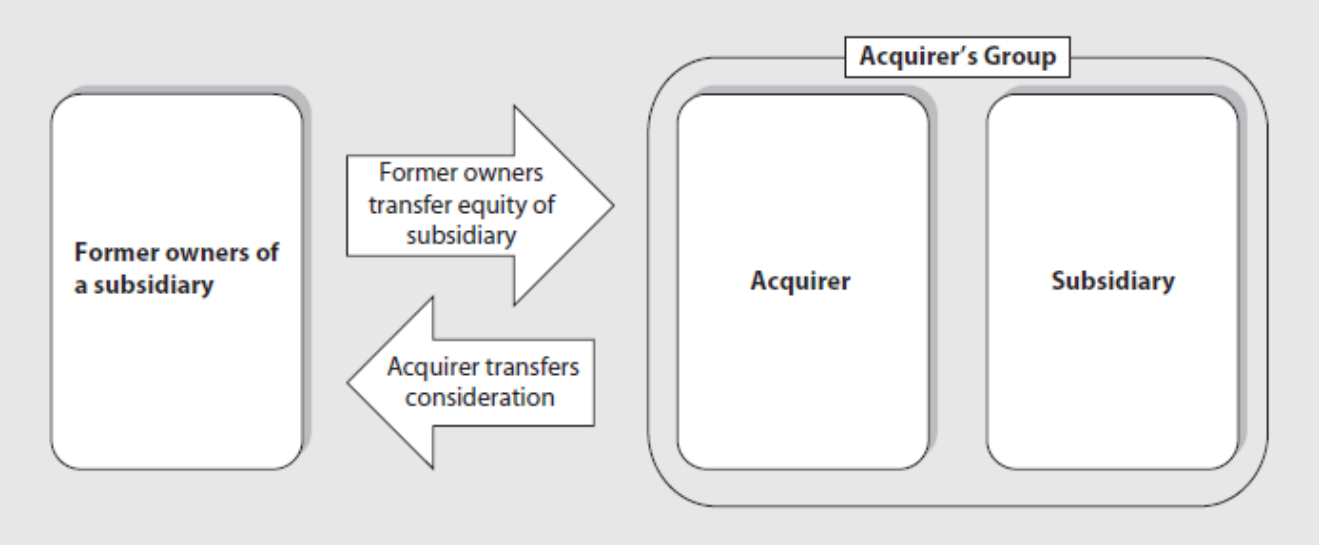
FIGURE 3.3 Direct acquisition of net assets of acquired businesses



Businesses Become Subsidiaries of the Acquirer

In this business combination, the acquirer obtains control of separate legal entities normally through the acquisition of voting rights or equity of other legal entities. Figure 3.4 shows the exchange of net assets for equity in this form of business combination. However, IFRS 3[6] recognizes that there are other ways to obtain control besides acquisition of voting rights by the acquirer. For example, the acquirer and acquiree may agree to combine their businesses by contract alone. An acquiree may also buy back its own shares from other investors such that the shares held by an existing investor leads to control for that investor. For example, if an acquiree buys back 70% of its shares from three of its four investors, the fourth investor that has 30% ownership interest effectively has 100% control after the share buy back. An acquirer may also obtain control of voting rights of an acquiree when barriers that prevent control are removed. For example, veto rights held by other investors may lapse leaving one investor with control.

FIGURE 3.4 Businesses become subsidiaries of the acquirer

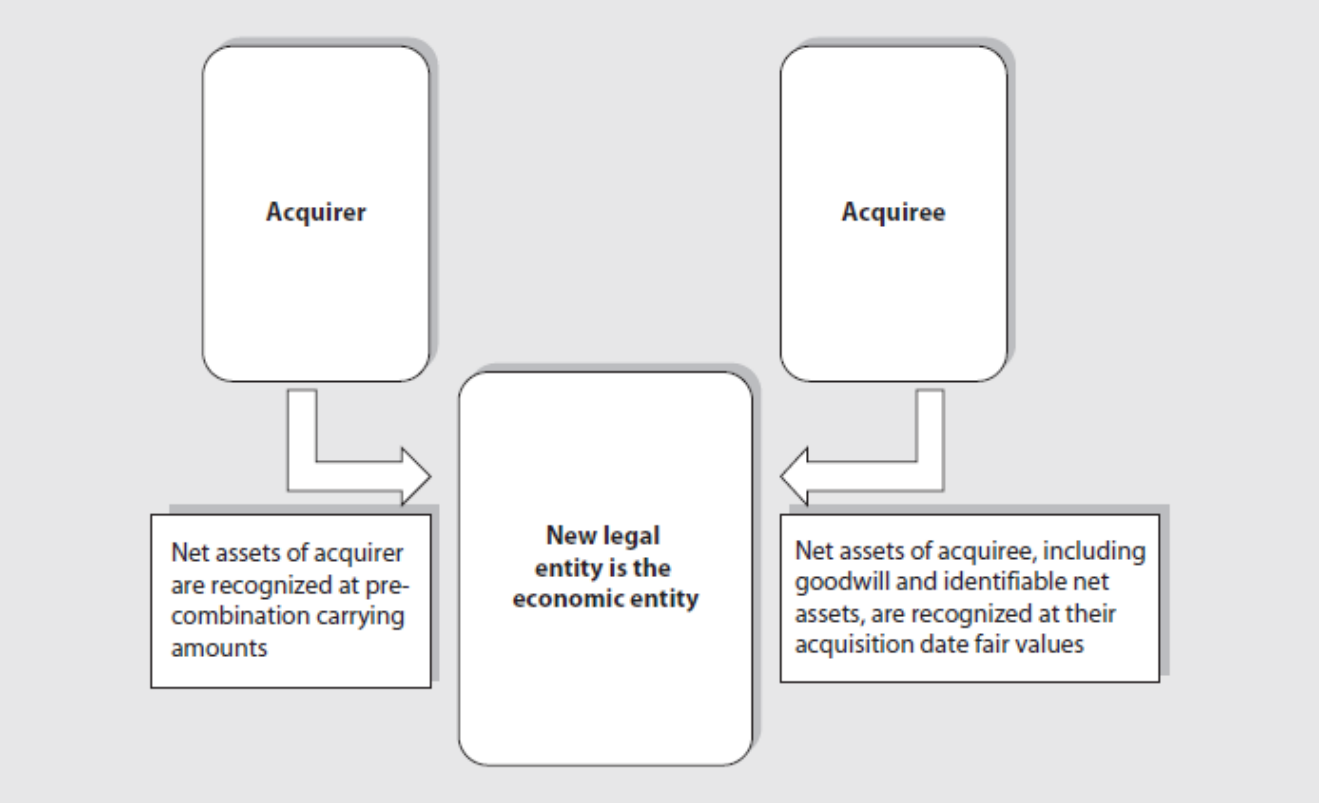


When businesses become subsidiaries, the acquirer recognizes goodwill in the consolidated financial statements. Consolidation is required because the acquirer and acquiree remain as separate legal entities. Non-controlling interests in the net assets of the acquiree will also feature in the consolidated financial statements.

Net Assets of Combining Entities Transferred to a Newly Formed Entity

In this business combination, the acquirer and acquiree transfer their assets and liabilities to a newly formed entity. Figure 3.5 graphically presents this mode of business combination. This arrangement is commonly referred to as a "roll-up" or "put-together" transaction.[7] In this situation, the new legal entity incorporates the assets and liabilities of the enlarged economic entity. For example, in some jurisdictions, it may be advantageous for tax reasons to have the acquirer and acquiree exist as a single legal entity.

FIGURE 3.5 Transfer of net assets to a newly formed entity



These arrangements are sometimes referred to as "mergers," "legal consolidation," or "amalgamation" as two or more entities are legally combined into a new entity. The owners of the combining entities are given shares in the new entity. An example of such an arrangement is ExxonMobil, which was created out of an agreement to combine Standard Oil Company of New Jersey (Exxon) and the Standard Oil Company of New York (Mobil). Many mergers that arose in the 1990s and earlier periods were described as "mergers of equals" and they applied the pooling of interests method permitted by the then prevailing accounting standards. However, the term "mergers of equals" is out of place within the framework of IFRS 3 issued in 2009. In a legal arrangement where two (or more) entities are combined into a new entity, there is a need to determine which combining entity has control over the new enlarged entity. For example, in 2011, the business combination of British Airways and Iberia Airlines resulting in a new entity International Consolidated Airlines Group, S.A. (commonly referred to as IAG), while seen by the parties involved as a merger, required the identification of an acquirer under IFRS 3. In that business combination, British Airways was deemed to have acquired Iberia Airways (IAG's 2011 Annual Report, Note 2).

The controlling party is deemed the acquirer and the other party is the acquiree even though they reside under one roof. The accounting procedures applied to recognize goodwill and fair valuation of acquired net assets are the same as those which would be applied if the acquirer and acquiree had remained as separate legal entities. In other words, while the legal arrangements and the form of the combination are different, the substance is the same as with other business combinations — there is an acquirer that obtains control of one or more businesses.

In other cases, the formation of a newly formed entity signals the integration of the two entities as one and enhances the development of a unifying corporate culture and identity. In this business combination, goodwill on the acquisition is recognized in the newly formed entity's financial statements. Consolidation is not required because the separate legal entities of the acquirer and acquiree would cease to exist.

Former Owners of a Combining Entity Obtain Control of the Combined Entity

This scenario requires us to consider whether the former owners of a combining entity (the acquirer) have control of the combined entity. Typically, this requirement to look beyond the "corporate veil" to the owners is most important in a reverse acquisition or reverse takeover (RTO). If the former owners of a "legal subsidiary" have control over the enlarged economic entity, the identity of the "legal subsidiary" is effectively that of the parent and vice versa. Appendix 3B discusses reverse acquisition in greater detail.

The above are four examples of business combinations. Regardless of the form, the substance is the same — there is an acquirer who obtains control over one or more businesses. Hence, the accounting method and process to determine goodwill should be the same in all forms of business combinations.

THE ACQUISITION METHOD

In all circumstances, IFRS 3 requires the identification of the acquirer, which is the combining entity that obtains control of the other combining entities or businesses. IFRS 3 requires all business combinations to be accounted for through the application of the *acquisition method*.[8]

The acquisition method accounts for a business combination from the perspective of an acquirer. An acquirer can obtain control in an acquiree through:

1. The acquisition of assets and the assumption of liabilities of the acquiree;
2. The acquisition of a controlling interest in the equity of the acquiree; or
3. A combination of (1) and (2).

In IFRS 3, the effects of (2) and (3) are to be accounted for as if they are the effects of (1). Under the acquisition method, if an acquirer obtains control through the purchase of ownership interests in an acquiree, there is deemed to be an *effective* acquisition of the assets and assumption of the liabilities of the acquiree by the acquirer. Through the control exercised by an acquirer over an acquisition, the acquirer is deemed to also have control over the net assets of the acquiree.

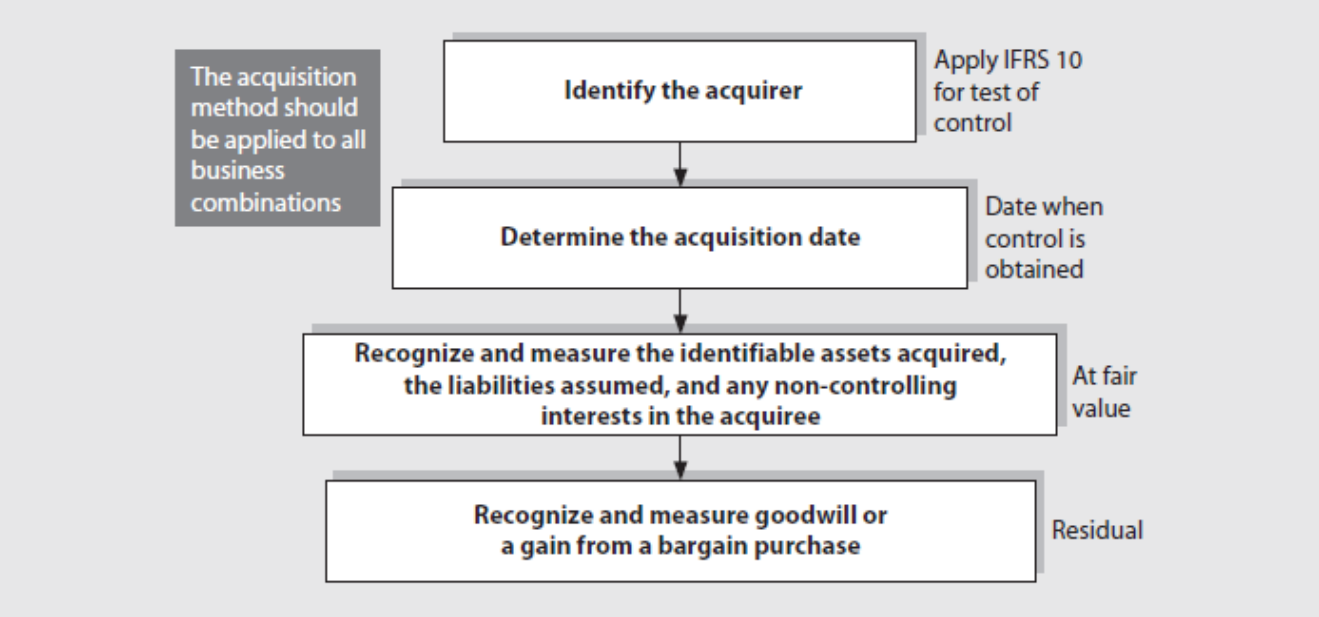
Hence, under the acquisition method, the acquirer recognizes in the consolidated financial statements the assets acquired and the liabilities assumed of the acquiree, including those assets and liabilities not previously recognized by the acquiree. Examples include:

1. Certain contingent liabilities of the acquiree;
2. Internally generated brand name and customer lists of the acquiree that could not be previously recognized in the absence of an exchange transaction; and

3. In-process research and development, and other identifiable assets that were not recognized by the acquiree because of inability to meet the recognition criteria in IAS 38 *Intangible Assets*.

However, the acquisition method does not affect the recognition or measurement of the acquirer's assets and liabilities, as it is only the acquiree's net assets that are the subject of the acquisition transaction. Since there is an effective acquisition of the net assets of the acquiree, the acquirer will recognize the acquiree's net assets at fair value at acquisition date. In subsequent periods, the fair value of the acquired assets will be expensed, depreciated, or amortized in the consolidated financial statements. The acquisition method involves the following procedures as shown in Figure 3.6.

FIGURE 3.6 Application of the acquisition method of accounting



The concept of control under IFRS 10 was discussed in Chapter 2. IFRS 3, however, recognizes that occasionally, it may be difficult to identify, which entity has control over other combining entities. In the event that the overriding principle of "control" in IFRS 10 does not conclusively determine the identity of the acquirer, IFRS 3 Appendix B, paragraphs B13–B18 provide additional criteria.

The acquirer is usually the entity:

1. That transfers cash or other assets or incurs the liabilities to acquire another entity;
2. That issues shares as consideration to acquire shares of another entity (an exception to this is a reverse acquisition where the issuer is the acquiree);
3. In a business combination primarily effected through a share exchange (that is, not through transfer of assets or assumption of liabilities);
   - Whose owners hold the largest relative voting rights in a combined entity;
   - Whose owners hold the largest minority voting interest in the combined entity, if no other entity has a significant voting interest;
   - Whose owners have the ability to elect, appoint, or remove a majority of directors or members of the governing body;
   - Whose management is dominant in the combined entity; and
   - That pays a premium over the acquisition-date fair value of the equity interests of the other entity;
4. That is relatively larger in size among combining entities; and

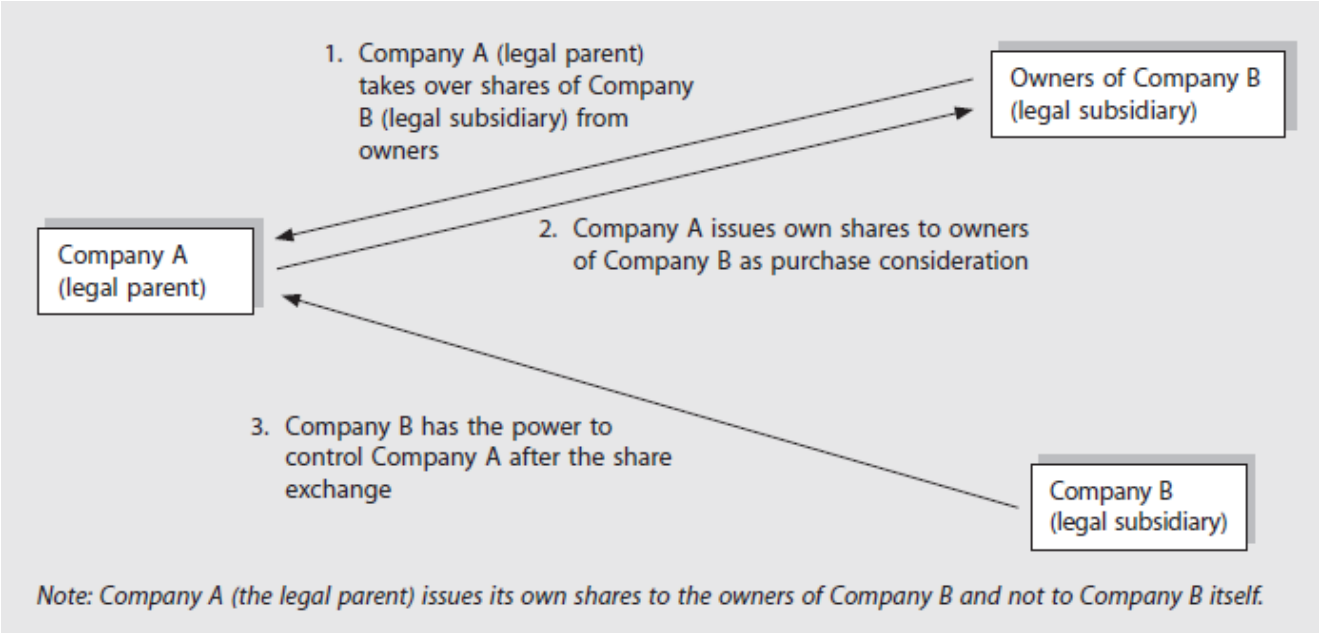
5. That initiated the business combination.

IFRS 3 does not specify that all the criteria be achieved to identify the acquirer; hence, these criteria are only meant to support the test of "control" in IFRS 10. The above criteria are particularly useful in determining the acquirer in a reverse acquisition.

In a reverse acquisition, the legal parent is effectively the acquiree while the legal subsidiary is effectively the acquirer. Although the legal parent is the entity that issues shares to acquire a legal subsidiary, a reverse acquisition is often initiated by the legal subsidiary, which may be a larger entity. One indication that a business combination may be a reverse acquisition is the motivation for entering into such an arrangement. For example, a private entity that wishes to seek a backdoor listing may arrange to have itself acquired by a public entity.[9]

Typically, the legal subsidiary (normally a private entity) in a reverse acquisition arranges for its shares to be bought over by a legal parent (normally a publicly listed entity). To finance the acquisition, the legal parent issues its shares to the vendors (existing shareholders of the legal subsidiary) (Figure 3.7).

FIGURE 3.7 Exchange of shares in a reverse acquisition



Note: Company A (the legal parent) issues its own shares to the owners of Company B and not to Company B itself.

Reverse takeovers (RTOs) are often seen as means of raising public funds without having to go through the more costly Initial Public Offerings (IPO) route. In some countries, backdoor listings through RTOs are becoming popular because of the lengthy waiting time required for the regulatory approval for IPOs.

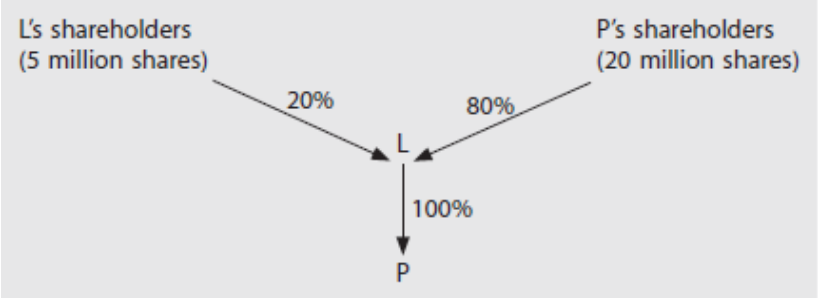
Illustration 3.1 is an example of a reverse acquisition.

ILLUSTRATION 3.1 Reverse acquisition

On 1 July 20x5, P, a private entity, arranged to have all its shares acquired by L, a publicly listed entity. The arrangement required L to issue 20,000,000 shares to P's shareholders in exchange for the existing 6,000,000 shares of P. Existing shareholders of L owned 5,000,000 shares of L.

After the issue of 20,000,000 shares by L, P's shareholders now owned 80% (20 million shares out of a total of 25 million shares) of the issued shares of L. L's existing shareholders owned 20% of the shares in L after the share issue. P's shareholders act in concert to exercise control over the combined entity. After the issue, the ownership structure is as shown in Figure 3.8.

FIGURE 3.8 Ownership structure after the share exchange



P is the effective parent or the "accounting parent" and L is the effective subsidiary or the "accounting subsidiary" in this situation because P's shareholders have control over L. Furthermore, the motivation for the arrangement suggests that P intends to obtain control over L to achieve the listing status.

When a reverse acquisition is identified, the substance of the arrangement has to be properly interpreted, and the consideration transferred and the amount of goodwill have to be determined from the acquirer's perspective, notwithstanding that the acquirer is the legal subsidiary in form. Appendix B of IFRS 3 provides guidance as to the determination of the consideration transferred and the preparation and presentation of consolidated financial statements. A full explanation of Illustration 3.1 is presented in Appendix 3B of this chapter.

DETERMINING THE AMOUNT OF CONSIDERATION TRANSFERRED

After identifying the acquirer, the next step is to determine the amount of consideration transferred by the acquirer. This amount will be used to determine goodwill.

In accordance with IFRS 3 paragraph 37, the consideration transferred by the acquirer is the sum of the acquisition-date fair value of:

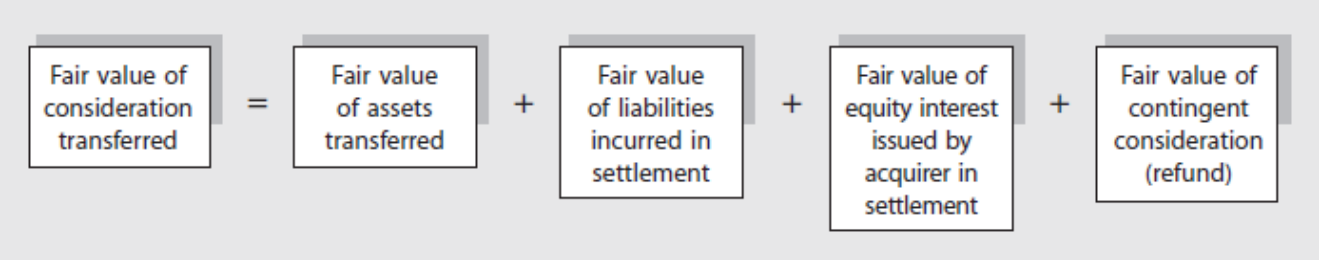
1. Assets transferred by the acquirer;
2. Liabilities incurred by the acquirer to the former owners of the acquiree; and
3. Equity interests issued by the acquirer.

The acquirer will have to transfer consideration to the former owners of the acquiree in order to obtain control of the acquiree. Consideration transferred may be in the form of assets transferred (for example, cash or non-monetary assets), liabilities incurred to the former owners (for example, deferred settlement of consideration), or equity interests issued to the former owners (for example, a share swap whereby the acquirer issues new shares to the former owners to obtain control of the shares of the acquiree). The counterparty to whom the consideration is transferred is the former owner(s) of the acquiree. For example, if the acquirer has to borrow $200 million from a bank to pay the former owners $180 million for the acquisition of a business, the loan from the bank should not be included in the fair

value of consideration transferred. Instead, the cash paid to the former owners of $180 million is the consideration transferred to obtain control.

The acquisition contract may include terms of payment that are contingent on the occurrence or non-occurrence of specified events. Contingent consideration is the obligation (right) of the acquirer to transfer (receive) additional assets or equity interests to (from) former owners of the acquiree if specified future events occur (IFRS 3 App A). An example of a contingent consideration is when the acquirer has a right to receive a refund of part of the consideration transferred if the acquiree does not achieve target profit figures. The fair value of the refund has to be estimated and deducted from the total consideration transferred (see Figure 3.9).

FIGURE 3.9 Determining the fair value of consideration transferred to obtain control



The fair value of the contingent consideration or refund will change as new information arises about the likelihood of the contingent event. The change will be accounted as a change in accounting estimate if the information does not relate to facts and circumstances existing at acquisition date.

If events after acquisition reveal information that was present at acquisition date but was missed or incorrectly applied, the change in fair value of the contingent consideration is adjusted retrospectively as a correction of error (exception to this requirement are "measurement period" adjustments, which are discussed later in this chapter) (IFRS 3:58).

Any acquisition-related costs incurred by the acquirer in relation to the business combination (for example, legal costs, due diligence costs, and stamp duties) are expensed off in the consolidated financial statements[10] page 82 and not included in the consideration transferred (IFRS 3:53). The expensing treatment in the revised IFRS 3 differs from the capitalization of direct costs in IFRS 3 (2004). The International Accounting Standards Board (the Board)[11] concluded that there should not be two distinct treatments for direct and indirect acquisition costs and hence required both to be expensed off in the revised IFRS 3.

Costs of issuing debt or equity to finance the acquisition are not part of the consideration transferred and are recognized in accordance with IAS 32 *Financial Instruments: Presentation* and IFRS 9 *Financial Instruments*. Costs of issuing equity are deducted from equity under IAS 32. For example, if the costs of issuing equity is $10,000, the costs are accounted as follows:

Dr Equity	10,000	
Cr Cash		10,000

The debit entry to equity effectively reduces the proceeds from the issue of shares.

Costs of issuing debt are deemed as yield adjustments to the cost of borrowing and are amortized over the life of the loan. Costs to raise debt to finance an acquisition increase the effective interest rate. For example, on payment of the debt issuance cost of $20,000, the entry is as follows:

Dr Unamortized debt issuance costs	20,000	
Cr Cash		20,000

The debt issuance costs are amortized over the tenure of the debt to income statement under the effective interest method and included as part of borrowing costs.

If the assets transferred or liabilities assumed by the acquirer are carried in the acquirer's separate financial statements at other than fair values (for example, at historical cost for certain non-monetary assets), the acquirer has to remeasure the transferred assets or assumed liabilities to fair value first and recognize a gain or loss in its separate financial statements.

For example, an acquirer may transfer property to the former owners of an acquiree in settlement of the purchase price. If the property is carried in the acquirer's separate financial statements at $10,000,000 but has a fair value of $12,000,000, the acquirer must recognize a gain of $2,000,000 in its own books before transferring the asset. Effectively, the gain proxies for the gain that would have arisen if the acquirer had sold the property at fair value and used the proceeds from the sale to settle the purchase price. The journal entries in the acquirer's books are as follows:

Immediately prior to transfer:		
Dr Property	2,000,000	
Cr Gain on remeasurement		2,000,000
Gain arising from remeasurement of property to fair value		
On transfer:		
Dr Investment	12,000,000	
Cr Property		12,000,000
Consideration transferred to existing owners of the acquiree		

However, the remeasurement gain or loss should not be recognized if the assets transferred or liabilities assumed remain within the combined entity's financial statements; for example, if the property in the example above is transferred to the acquiree, the remeasurement gain should not be recognized by the acquirer (IFRS 3:38) as it would be deemed to be an unrealized gain from the economic entity's perspective.

The date of exchange[12] is the date on which consideration is transferred and is not necessarily the same as the acquisition date, that is, the date on which the acquirer effectively obtains control of the acquiree. For example, an acquirer may achieve control by contract before the legal transfer of consideration is concluded. IFRS 3 requires the fair value to be determined on the acquisition date and not the date when the consideration is transferred.

The complexity of fair value determination varies in accordance with the nature of the items that are included in the consideration transferred. Monetary assets given up or monetary liabilities incurred are simply measured at their contractual amounts. When transfer of monetary assets or monetary liabilities is deferred and the effect of the time value is material, the fair value of the deferred component is the present value of the future cash outflows (IAS 37:45). For example, if a final cash settlement of $1,000,000 is due three years from the date of acquisition, and a 3% interest is levied on the deferred payment, a present value of $915,142 is included in consideration transferred in the books of the acquirer with an annual interest expense of 3% recognized in profit or loss each year.

Market prices (for example, published quoted prices of shares) are generally considered more reliable than internal valuations. However, if the shares issued by the acquirer are thinly traded, the market price may not be indicative of the fair value of the consideration transferred. In a share exchange transaction (that is, where the acquirer pays for the investment through issuing own shares to the former owners of the acquiree), the fair value of the consideration transferred should be measured at the acquisition-date fair value of shares issued by the acquirer or fair value of the shares acquired, whichever is more reliably measurable (IFRS 3:33).

In Figure 3.10, the fair value of equity interests issued by the acquirer may be determined with reference to either the acquisition-date fair value of the acquirer or the acquiree.

FIGURE 3.10 Determination of the fair values of equity exchanged

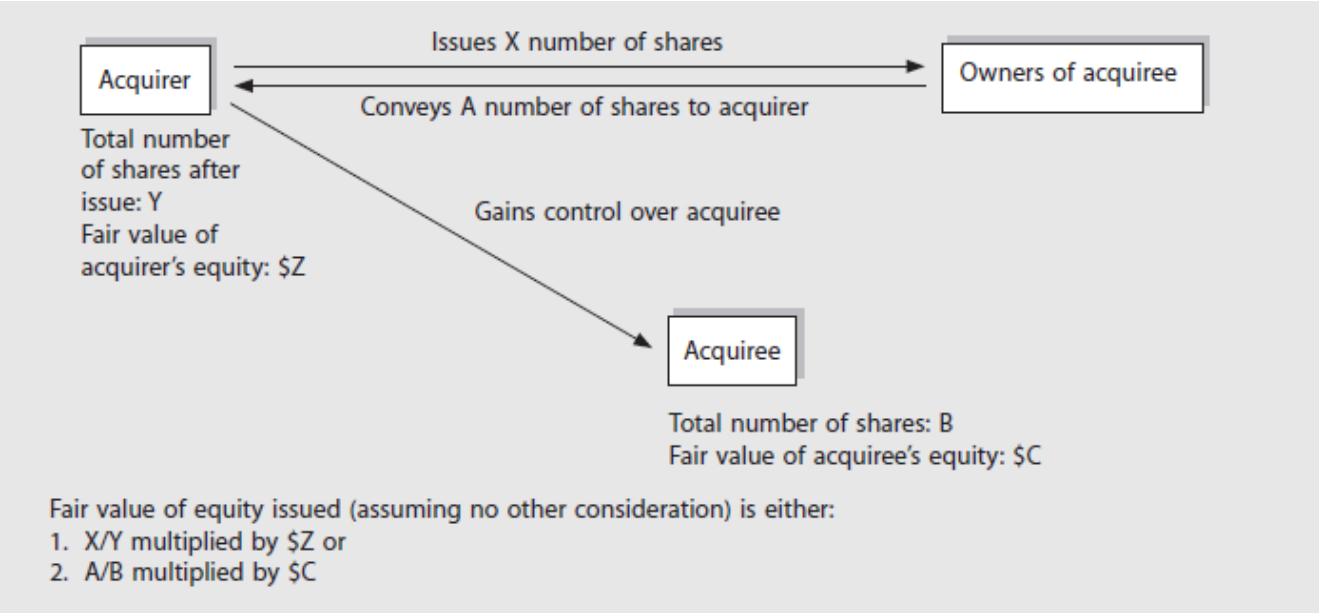


Illustration 3.2 shows the application of the requirement of IFRS 3 with respect to determining the fair value of equity instruments issued.

ILLUSTRATION 3.2 Fair value of equity issued

P Ltd acquires 100% of S Co through an issue of 5,000,000 shares to the owners of S Co. The following information relates to P Ltd and S Co at the date of exchange:

	P Ltd	S Co
Number of existing shares	10,000,000	2,000,000
Number of new shares issued	5,000,000	
Market price per share	$2.00	
Fair value of equity	$30,000,000	$9,000,000

Assume that the date of exchange is also the acquisition date.

Situation 1: P Ltd's market price is a reliable indicator of the fair value of P Ltd's quoted equity.

Consideration transferred = (P's share issue of 5,000,000 shares × Market price of $2.00 per share)
= $10,000,000

Situation 2: Fair value of S Co is a better estimate of the fair value of the shares acquired.

Since P Ltd is acquiring 100% of the equity of S Co, the fair value of the equity (i.e., the fair value of S Co as a whole including the implicit goodwill) acquired by P Ltd is $9,000,000. Hence,

Consideration transferred = $9,000,000

RECOGNITION AND MEASUREMENT OF IDENTIFIABLE ASSETS, LIABILITIES, AND GOODWILL

When a business combination is accounted for under the acquisition method, the net assets of an acquiree at the date of acquisition are recognized at fair values by the acquirer (IFRS 3:18). Under the acquisition method of accounting for business combinations, the underlying assumption is that there has been an exchange transaction at arm's-length pricing. A past event has occurred that justifies the recognition of internally generated goodwill and intangible assets and other assets and liabilities at fair value. If a business combination is effected through the direct acquisition of net assets of a business (rather than the acquisition of voting rights or equity), the acquirer will recognize the assets acquired and liabilities assumed at fair value in its separate financial statements on initial recognition. The acquirer will also recognize goodwill and internally generated intangible assets in its own books. Thereafter, the assets acquired will be depreciated or expensed off on the basis of the fair value recognized as at acquisition date.

If a business combination is effected through the acquisition of voting rights or equity of another entity, the acquirer and the acquiree will retain their separate legal identities. However, they belong to the same economic entity. As a result of the acquisition of the subsidiary by the parent, there is an effective "acquisition" of the identifiable assets and liabilities of the subsidiary at fair values. The acquisition method requires the economic entity to recognize the assets and liabilities of the acquiree at fair value as at acquisition date.

In the books of the acquiree, the identifiable assets and liabilities are carried at their book values,[13] which in some cases may be zero (for example, contingent liabilities). The individual book values in the financial statements of the acquiree may be carried at cost and may not reflect the fair values of the identifiable assets and liabilities. In an acquisition of a subsidiary, the differences between the fair values[14] and the book values of the assets and liabilities at the date of acquisition are recognized as consolidation adjustments in the consolidation worksheet.

To qualify for recognition, the identifiable assets or liabilities must comply with two conditions (IFRS 3 paragraphs 11–12):

1. They must meet the definition of an asset or a liability in the *Conceptual Framework for Financial Reporting*; and
2. They must be part of or priced into the consideration transferred and not be separate stand-alone transactions. Generally, a transaction that is entered into by the acquirer or for the primary benefit of the acquirer rather than the acquiree or its former owners before the combination is likely to be a separate transaction from the business combination (IFRS 3:52). The acquirer may have a "pre-existing relationship" with the acquiree (for example, as a supplier to the acquiree) and enters into a transaction with the acquiree to settle the "pre-existing relationship"; that settlement (for example, the proceeds from the sale of goods to the acquiree) is deemed as separate from the consideration transferred.

Pre-existing relationships may be complex and varied. A more detailed discussion is dealt with in Appendix 3C. To provide a flavor of the accounting for such settlement, a scenario is given below with explanation of the accounting

treatment as prescribed by IFRS 3.

Further Issues: Pre-Existing Relationships between Acquirer and Acquiree and Reacquired Rights

A business combination effectively ends a pre-existing relationship between an acquirer and an acquiree. From an economic entity's perspective, it is not possible to have contracts with oneself. The effective termination of a pre-existing relationship through a business combination may result in a settlement gain or loss for the acquirer. Under IFRS 3, the settlement gain or loss for a pre-existing contractual[15] relationship is the lesser of (i) the amount by which the contract is favorable or unfavorable for the acquirer when compared with current market terms for the same and similar items and (ii) the settlement amount[16] provided in the contract to the counterparty to whom the contract is unfavorable (IFRS 3:B52). The settlement gain or loss is presumed to have been priced into the fair value of consideration transferred by the acquirer. We need to recognize the settlement gain and loss separately from the business combination.

In a business combination, the acquirer recognizes "reacquired right" as an intangible asset. Since the acquirer obtains control of the acquiree, it is deemed that the rights flowing from the pre-existing contracts revert to the acquirer on acquisition date. The acquirer recognizes the value[17] of the "reacquired right" as an intangible asset on the basis of the remaining contractual term of the related contract. The measurement of fair value of this reacquired right at the date of acquisition does not take into account potential contractual renewals incorporated in market participants' assessment (IFRS 3:29).

Consider this example. Prior to acquisition date, an acquirer as franchisor entered into a contract with the acquiree to give the acquiree the right to operate a franchised outlet at $100,000 per annum. The contract between the acquirer and the acquiree gives rise to a "pre-existing relationship." Through the business combination, the acquirer is effectively reacquiring the franchised rights that it had granted to the acquiree previously.

Let us assume in our example that the market rate for the franchise is $120,000 per annum at acquisition date and the remaining contractual term is three years. The discount factor is 5% per annum over three years. In this example, the terms of the contract are unfavorable to the acquirer as the contracted fee is $100,000 but the market rate is $120,000. Included in the contract is a penalty provision of $60,000 for early termination of the franchise. Applying paragraph B52 of IFRS 3, the acquirer recognizes a settlement loss of $54,465 (which is the present value of the fee difference $20,000 discounted at 5% per annum over three years) being the lower between the amount by which the contract is unfavorable to the acquirer based on current market terms for the same or similar items (that is, $54,465) and the amount of stated settlement provision available to the acquiree (that is, $60,000). The credit entry to investment in acquiree is to reverse the implicit inclusion of the settlement in the investment account.

Dr Settlement loss (I/S)	$54,465	
Cr Investment in acquiree		$54,465

The value of the reacquired rights of the remaining term is recognized by the acquirer as an intangible asset. Since the acquirer has the right to begin new contracts with third parties at $120,000 per annum, the value of the reacquired rights is the present value of $120,000 per annum for three years at 5% per annum is $326,790.

On consolidation, the investment in acquiree is eliminated and the intangible asset is recognized. A partial elimination entry is shown below (more is explained in the subsequent sections):

Dr Intangible asset – reacquired right	$326,790	
Cr Investment in acquiree		$326,790

The intangible asset is subsequently amortized over the remaining contractual period of three years. If the right is sold to a third party, the acquirer uses the carrying amount (that is, the unamortized amount at the date of sale) to determine the gain or loss on sale. In our example, the consolidation entry is reflected in the first year of acquisition:

Dr Amortization of intangible asset	$108,930	
Cr Accumulated amortization . .		$108,930

Under the acquisition method, the acquirer is deemed to have acquired the goodwill and identifiable assets and liabilities of the acquiree at fair value. The acquirer would thus recognize the acquiree's assets and liabilities at acquisition date fair value. This principle holds in any form of business combination. Various forms of business combinations were discussed in an earlier section. For example, the assets and liabilities at acquisition date fair values are recognized in the consolidated financial statements (if the acquirer obtains control of another legal entity) or the acquirer's own books (if there is a direct acquisition of net assets of acquired businesses) or a newly formed entity (if the acquired net assets are transferred to a newly formed entity).

page 87

Once recognized, the fair value of identifiable assets and liabilities of the acquiree is initial cost to the acquirer as at the date of acquisition. Hence, the subsequent depreciation, amortization expense, or cost of sales of identifiable net assets of an aquiree would be determined on the basis of the fair values recognized as at the acquisition date. In a direct acquisition of net assets of acquired businesses, the initial and subsequent accounting for these net assets will be the same as for stand-alone assets that are purchased by the acquirer. At acquisition date, the acquirer will recognize identifiable assets and liabilities at fair value in its books. Goodwill is also recognized as an asset in the acquirer's books. Subsequently, the acquirer will depreciate the initial fair value of the acquired fixed assets over their remaining useful life or expense off the cost of sales based on the initial fair value of inventory. The same accounting applies if the net assets of an acquiree are transferred to a newly formed entity.

However, if the acquirer and acquiree remain as two separate legal entities, the acquirer recognizes only an investment in subsidiary as an asset and the acquiree continues to carry its assets and liabilities on the basis of its accounting policies, typically historical cost. On consolidation, the investment in subsidiary has to be eliminated and in its place, the acquisition-date fair values of identifiable assets and liabilities and goodwill have to be recognized. Subsequently, consolidation adjustments have to be put in place to adjust depreciation and cost of sales of the acquired assets to reflect the acquisition-date fair values of the acquired net assets. In substance, the acquirer must recognize and account for the acquisition-date assets and liabilities of the acquiree as if these assets and liabilities were bought directly by the acquirer.The consolidation adjustments with respect to the fair value differential of identifiable assets and liabilities and their subsequent cumulative depreciation and amortization must be repeated at each consolidation year-end for as long as the investment in the subsidiary remains.

Intangible Assets

Besides recognizing the excess of fair value over book value of existing on-balance sheet assets, the acquirer has to recognize the fair value of an acquiree's unrecognized identifiable assets, for example, internally-generated intangible assets. An acquiree's unrecognized intangible assets has a zero book value on its statement of financial position, but the acquisition event justifies the recognition of intangible assets at fair value as at the date of acquisition by the acquirer.

The acquirer recognizes an acquiree's intangible assets separately from goodwill, if the recognition criteria in IFRS 3 paragraphs 11–14 are met. In the previous section, we had explained the two conditions for recognition under IFRS 3. The item recognized must first comply with the definition of an asset or a liability under the conceptual framework. For example, an acquiree has a well-established customer base that it had built up over the years through its marketing activities. Although the acquiree had expensed off its marketing costs, a past event has arisen that gives the acquiree control over the customer base, which gives rise to future economic benefits.

The second condition for recognition is that the asset acquired must be part of the exchange transaction in the business combination. In the example of the customer base, the acquirer would have included the fair value of this valuable asset in determining the economic price of the exchange transaction. Implicit in the investment price is an identifiable intangible asset. This asset has to be recognized by the acquirer as an intangible asset on its statement of financial position.

How is goodwill different from intangible assets? IAS 38 *Intangible Assets* defines an intangible asset as an "identifiable non-monetary asset without physical substance." Identifiability is met by either one of the following two conditions:

1. The intangible asset is separable ("separability criterion"[18]); or
2. The intangible asset arises from contractual or other legal rights ("contractual-legal criterion"[19]).

One of the most valuable assets that an acquiree has is its brand names and customer relationships. When Heineken acquired Asia-Pacific Breweries in 2012, it acquired the iconic Tiger Beer brand among other assets held by Asia-Pacific Breweries. In its footnote disclosures, Heineken reported a fair value of EUR 3,809 million of intangible assets acquired. The intangible assets alone was approximately 64% of total assets acquired whose fair value was EUR 5,976 million. The intangible assets relate to capitalized brands and customer-related and contract-based intangible assets.

Since goodwill is a payment for anticipated benefits that are not capable of being individually identified and separately recognized,[20] it is inappropriate for an identifiable intangible asset to be subsumed in goodwill. Thus, an acquirer recognizes an in-process research and development project of the acquiree separately if the project meets the definition of an intangible asset and its fair value is included in the exchange transaction relating to the business combination. However, in the financial statements of the acquiree, in-process research would have to be expensed off and development expenditures are capitalized only if they qualify for recognition under IAS 38.

The following are examples of intangible assets that an acquirer should recognize separately from goodwill.

1. *Contracts.* Although the rights to a contract may not be "separable", the acquirer recognizes the fair value of the contract if the rights are not yet recognized as an asset by the acquiree.
2. *Customer and subscriber lists of the acquiree*. These lists meet the "separability criterion" if there is evidence of exchange transactions for similar types of lists, even though such transactions may be infrequent. However, if the acquiree is prohibited from selling or leasing these lists, the "separability criterion" would not be met, even if there were a market for these lists and the acquirer should not recognize the lists as intangible assets (IFRS 3 App B:B33). However, in most privacy agreements with customers, there is a clause that permits the transfer of customer data to third parties under special conditions, e.g. in a sale of the business.

Conversely, the following assets are subsumed in goodwill because the "separability" or "contractual-legal" criterion are not met:

1. *Assembled workforce of the acquiree*. An assembled workforce is an existing collection of employees that permits the continuity of operations of the acquired business.[21] IFRS 3 deems the assembled workforce as not representing the intellectual capital of the skilled workforce. The assembled workforce is not an identifiable asset and is subsumed in goodwill (IFRS 3 App B:B37). One interpretation of IFRS 3 is that specialized knowledge of the assembled workforce is deemed as being firm-specific and integrated with the acquiree while intellectual capital is generic and transferable to other settings and hence meets the "separability criterion."
2. *Potential contracts or contracts, that are under negotiation but are yet uncommitted, are not recognized as intangible assets and are subsumed in goodwill* (IFRS 3 App B:B38). While these potential contracts are likely to be valuable, they do not meet the "separability" or "contractual-legal"

criterion at the date of acquisition. Even if subsequent events after acquisition affirm the contracts, the acquirer should not reclassify the value from goodwill to intangible assets.

The identifiability criteria provide a basis to determine whether an intangible asset should be recognized separately from goodwill. However, the criteria do not provide guidance on the measurement of the fair value of the recognized intangible assets. An acquirer needs to consider assumptions that market participants would use to price the assets in measuring fair value (IFRS 3 App B:B40). In this regard, the measurement of recognized intangible assets is likely to be highly subjective. Since intangible assets are generally unique assets, they are unlikely to be actively traded or have market values. In most cases, the fair value of intangible assets is determined through the use of unobservable inputs resulting in a Level 3 fair value measurement in the fair value hierarchy of IFRS 13 *Fair Value Measurement*. In the hierarchy, Level 3[22] measurements are least objective while Level 1 measurements are most objective. Acquisition accounting under IFRS 3 gives rise to Level 3 valuations if the assets of the acquiree are unique and highly firm-specific.

Contingent Liabilities and Provisions

Contingent liabilities receive special consideration in accounting for business combinations in IFRS 3. Contingent liabilities at the date of acquisition are not recognized in the financial statements of the acquiree because they are only "possible" obligations or "present" obligations that do not lead to "probable" outflow or whose amount cannot be measured with sufficient reliability (IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*). However, under IFRS 3, contingent liabilities of the acquiree are recognized by the acquirer if they arise from "present" obligations arising from past events and the fair values of these liabilities are reliably measurable even if the outcomes are not "probable" (IFRS 3:23). However, "possible" obligations arising from past events that will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the acquiree are not recognized by the acquirer under IFRS 3.

Let's consider two scenarios. In one scenario, an acquirer obtains control of an acquiree that has a contingent liability of $10,000,000 arising from a potential lawsuit for a breach of contract. Pending the court judgment, the acquiree has a "possible" obligation and reports the contingent liability in the footnotes. In this scenario, the contingent liability is only a "possible" obligation and the existence of the obligation will be confirmed only by the court judgment at a future date. In line with IFRS 3, the acquirer will not recognize this contingent liability at acquisition date. In another scenario, an acquiree is already adjudged guilty (a "present" obligation exists) but is countersuing the plaintiff. The acquiree reports that it has a contingent liability arising from a present obligation, which is not recognized because the final outflow is deemed as being not probable. In a business combination, the acquirer will assess if the fair value of the net outflow from the "present" obligation can be measured reliably. For example, consider the following possible outcomes:

Outcome	Probability	Net payment	Expected value
Win countersuit	0.80	0	0
Lose countersuit	0.20	$1,000,000	$200,000
Fair value (ignoring discounting)			$200,000

If the acquirer is able to assess the probability and net payment for each outcome reliably, it will recognize a fair value of $200,000 as at acquisition date.

The underlying assumption in IFRS 3 is that if a reliable fair value measure of a "present" obligation is available, the implied probabilities of outcomes are incorporated in the fair value measure even if the outcome is not probable. As fair value reflects "market expectations" of future outflow of economic benefits, the fair value measure captures both the amount of future outflows and the probable likelihood of their settlement. In this respect, IFRS 3 inclines toward the use of expected values or probability-weighted outcomes to determine fair values.

This is in contrast to IAS 37 that requires categorical classification of a liability. If the future outflow is less than "probable," it is not recognized under IAS 37. However, under IFRS 3, a liability, which may not have a probable

outflow may have a fair value that is greater than zero. Using statistical terminology, the approach in IAS 37 is best described as "categorical" or "binary" (that is, the decision criterion is to recognize all the liability only if it is probable or nothing if it is not probable) while the approach in IFRS 3 may be described as "continuous" (that is, recognize the liability if the expected value of the item is not zero and is reliably measurable). For example, if a contingent liability from a "present" obligation has a probability of 0.1 for a loss outcome of $500,000 and a probability of 0.9 for an outcome of zero loss, an expected liability of $50,000 should be recognized if the probabilities and the loss outcomes are reliably measurable. However, in the acquiree's financial statements, the contingent liability would not be recognized as it is not probable and fails to meet the threshold.

The measurement approach in IFRS 3 is more progressive than the underlying approach in IAS 37. However, the use of categories in accounting measurements is well entrenched in the history of financial reporting. In a business combination setting, the probabilistic measurement of future outcomes is an integral part of the negotiation and valuation process and is incorporated in the pricing of the acquisition. However, in routine reporting outside of a business combination, information on probabilities and outcomes may be more difficult to obtain. Hence, a schism exists between IFRS 3 and IAS 37, with greater use of more probabilitistic fair value measures in acquisition accounting.

The unique treatment of contingent liabilities and intangible assets in business combinations is probably due to the concern of standard-setters that too many "identifiable" elements are subsumed in goodwill, which is a non-identifiable residual. Essentially, IFRS 3 presumes that an acquirer would have conducted a proper valuation of an acquiree prior to acquisition, and would have established the fair values of identifiable assets and liabilities, including contingent liabilities. Hence, the consideration transferred should be allocated to "known" items such as contingent liabilities and intangibles, if their fair values are reliably measurable. When these identifiable items are separately recognized, the unidentified residual reflects a purer measure of goodwill.

When a contingent liability from a "present" obligation is recognized by the acquirer, a subsequent adjustment needs to be made when the contingent liability materializes. An acquiree recognizes a liability only when the outflow of resources is probable, but the acquirer recognizes a reliably measured fair value of a contingent liability at a much earlier stage. Hence, at the point when the acquiree recognizes an actual liability relating to the contingent liability, a consolidation adjustment needs to be passed through to reverse out the actual liability to avoid double-counting (Illustration 3.3).

Generally, restructuring and termination activities are likely to arise in a business combination. Special attention should be paid to the recognition criteria of IAS 37 with respect to restructuring and termination costs. Provisions for restructuring and termination costs are recognized only if all three conditions are met.[23]

1. Existence of a present constructive or legal obligation that results from a past event.

   A constructive obligation[24] arises when

   - An entity has indicated to other parties that it will accept certain responsibilities through "an established pattern of past practice, published policies or a sufficiently specific current statement"; and
   - An entity has created a "valid expectation" on the part of other parties that it will discharge those responsibilities.

2. Expectation of probable outflow of economic resources.
3. Reliable measurement of the amount of obligation.

Hence, if an acquiree has a restructuring plan whose execution is conditional upon it being acquired in a business combination, the existence of the plan alone does not constitute a present obligation of the acquiree if the other conditions are not met.

Indemnification Assets

In a business combination, the former owners of the acquiree may provide a contractual indemnity to the acquirer to make good any subsequent loss arising from a contingency or an asset or a liability. IFRS 3 paragraph 27 requires the following accounting for the indemnity:

1. The acquirer has to recognize an "indemnification asset" at the same time that the acquirer recognizes the indemnified asset or liability.
2. The indemnification asset has to be measured on the same basis as that of the indemnified asset or liability, that is, at acquisition-date fair value.

For example, an acquiree is exposed to a contingent liability that arises from a present obligation that has future outflows that are less than probable. The acquirer estimates the fair value of the contingent liability to be $100,000. In the worst case scenario, a loss of $1,000,000 will be incurred and in the best case scenario, no loss will be incurred. Based on probabilistic estimation, the fair value is assessed at $100,000. In the process of negotiation with the former owners of the acquiree, the acquirer obtained a contractual guarantee from the former owners to indemnify the acquirer in the worst case scenario. The acquirer recognizes a contingent liability of $100,000 and an indemnification asset of $100,000 at fair values.

As with other fair value measurements in IFRS 3 (refer to discussion under *Contingent Liabilities and Provisions)*, the effects of uncertainties in outcomes of the indemnification asset are incorporated in the fair value and a separate valuation allowance is not necessary.

At each subsequent reporting period, the acquirer remeasures the carrying amount of the indemnification asset on the same basis as that of the indemnified asset or liability. The indemnification asset is derecognized when the acquirer receives the proceeds or loses right to the asset (IFRS 3:57).

Illustration 3.3 below shows the accounting by the acquirer for a provision and an indemnification asset.

ILLUSTRATION 3.3 Recognition of contingent liability and indemnification asset

On 1 January 20x3, Prism acquired control of Apex from Valley. On acquisition date, Apex had an obligation to pay license fees to Crimson (a third party) but the amount of the fees was in dispute. The dispute was to be settled through an independent arbitrator. The expected date of settlement was 31 December 20x5. Legal counsel had advised Apex on the likelihood of the outcome as follows:

Outcome	Probability	Settlement
Worst case settlement	0.20	$500,000
Moderate case	0.10	200,000
Best case settlement	0.70	0

As a result of the unresolved fee dispute, Valley agreed to reimburse Prism for the final settlement amount in the moderate or worst case settlement. On 31 December 20x4, legal counsel advised that the likelihood of the moderate case situation has increased to 0.40 while the likelihood of the best case settlement is decreased to 0.40. On 31 December 20x5, the arbitrator awarded $200,000 to Crimson. The cost of capital of Apex is 5% per annum throughout 20x3 to 20x5.

This illustration shows the impact on the statement of changes in financial position and income statement in Prism's consolidated (economic entity) financial statements on 1 January 20x3, 31 December 20x3, 31 December 20x4, and 31 December 20x5. We ignore tax effects in this illustration. At the company level, Apex would not have recognized the contingent liability until the expense arose in 20x5. Prism would also not have recognized a contingent

asset until an actual gain arose in 20x5. Hence, the recognition of the provision and the indemnification asset occurs at the group level.

Explanatory note:

On 1 January 20x3, the acquisition date, Prism recognizes a provision for license fees that it "acquired" when it obtained control of Apex. At the same time, it recognizes an indemnification asset, which is the amount it would receive from Valley in the moderate or worst case settlement. Since settlement is at a future date, the expected payment and reimbursement should be discounted to present value. The present value of the expected value is the fair value of the recognized provision and indemnification asset.

Determination of fair value of provision and indemnification asset on 1 January 20x3

	Probability	Payment	Expected value
Worst case	0.2	$500,000	$100,000
Moderate case	0.1	200,000	20,000
Best case	0.7	0	0
Expected value			120,000
Expected period	3 years		
Apex's cost of capital	5% p.a.		
Present value of expected value			103,661

As time value of money is recognized, interest expense and interest income will be recognized on the provision and the indemnification asset. Since the future value ($120,000) is different from the present value ($103,661), interest income and interest expense is recognized through the amortization process. Effectively, there is an unamortized discount of $16,339 on the provision and indemnification asset. The following table shows the amortization of interest over the three years, before the change in accounting estimate is incorporated.

Amortization of interest (before change in estimate)

Date	Interest	Carrying amount
1 Jan 20x3		$103,661
31 Dec 20x3	$5,183	108,844
31 Dec 20x4	5,442	114,286
31 Dec 20x5	5,714	120,000

On 31 December 20x4, Prism applies the new information to revise the estimate of the final settlement. Since the change arises from information on facts and circumstances on current date, the change is a change in estimate and not a correction of error. Prism will adjust the balances of its provision and indemnification asset including the remaining unamortized discount. As the adjustment in the provision and indemnification asset offset each other perfectly, there is no impact on the income statement. The following table shows the revised expected value as at 31 December 20x4.

Revised fair value of provision and indemnification asset on 31 December 20x4

	Probability	Payment	Expected value
Worst case	0.2	$500,000	$100,000
Neutral	0.4	200,000	80,000

Best case	0.4	0	0
Expected value			180,000
Expected period	1 year		
Apex's cost of capital	5% p.a.		
Present value of expected value			171,429

Amortization of interest (after change in estimate)

Date	Interest	Carrying amount
1 Jan 20x3		$103,661
31 Dec 20x3	$5,183	108,844
31 Dec 20x4	5,442	114,286
Adjustment		57,143
Revised balance		171,429
31 Dec 20x5	8,571	180,000

On 31 December 20x5, the final settlement is made. The information on the final outcome results in a change in estimate that is adjusted to the income statement. This business combination leads to a parent-subsidiary relationship for Prism and Apex. Prism, as acquirer, will prepare a set of consolidated financial statements to present the effects of the economic entity. However, if Prism had directly acquired the net assets of Apex (rather than equity), the effects on Prism's financial statements would be the same, although no consolidated financial statements would be prepared in that situation. The extracts of Prism's consolidated financial statements are shown below:

PRISM
Consolidated Statement of Financial Position

	1 January 20x3	31 December 20x3	31 December 20x4	31 December 20x5
Assets				
Indemnification asset	$103,661	$108,844	$171,429	$0
Liabilities				
Provision for license fee	103,661	108,844	171,429	0

PRISM
Consolidated Income Statement

	31 December 20x3	31 December 20x4	31 December 20x5
Interest income	$5,183	$5,442	$8,571
Interest expense	(5,183)	(5,442)	(8,571)

The indemnification asset and provision are not set off against each other because they arise from transactions with different parties. Similarly, interest income and interest expense are not set off because finance costs (interest

expense) are reported separately.[25]

Deferred Tax Assets and Deferred Tax Liabilities Relating to the Fair Value Differentials of Identifiable Assets and Liabilities

When fair values of identifiable assets and liabilities are recognized, the acquirer has to consider consequential tax effects. IAS 12 *Income Taxes* requires the tax effects on the differences between fair values and book values to be accounted for as deferred tax liabilities or deferred tax assets if the basis for taxation does not change with the business combination. In most taxation regimes, tax is assessed on the legal entity's taxable income and tax deductions on assets do not change when the legal entity is acquired by another entity. For example, tax authorities grant capital allowances or tax depreciation on the basis of the original cost of the asset. An acquisition event does not change the allowances. In other words, if tax authorities allow deductions on the basis of the original cost of the asset (rather than its fair value as at acquisition date), the difference between the fair value recognized by the acquirer as at acquisition date and the carrying amount of the asset in the acquiree's books as at that date gives rise to a taxable temporary difference or deductible temporary difference. A taxable temporary difference is the future taxable income that arises from the recovery of the excess of fair value over book value of identifiable net assets. Conversely, a deductible temporary difference is the reduction in future taxable income that arises from the outflow of undervalued liabilities or recovery of overvalued assets. These temporary differences give rise to deferred tax liabilities or deferred tax assets as at acquisition date (IAS 12:18a).

IAS 12 requires the recognition of deferred tax liabilities or deferred tax assets on taxable or deductible temporary differences arising from the initial recognition of fair value adjustments of assets or liabilities in a business combination. For example, if the fair value of inventory is $50,000 and the original cost is $30,000, the excess of $20,000 gives rise to future taxable income (referred to as a "taxable temporary difference" in IAS 12). Future taxable revenue from the inventory is $50,000 but future deductibility on the basis of cost is only $30,000 giving rise to future taxable income of $20,000. Since fair value is recognized under the acquisition method, the future tax payable (referred to as "deferred tax liability") should also be recognized. However, no deferred tax liability should be recognized on the goodwill asset (IAS 12:15*a*). Goodwill is a residual and should not in itself give rise to other effects. Deferred tax is discussed in greater depth in Chapter 11.

1. An excess of fair value over book value of an identifiable asset gives rise to a deferred tax liability. This is because the excess gives rise to an increase in future economic benefits that will be taxed when realized. The increase in future tax payable is recognized as a deferred tax liability at the date of acquisition by the acquirer.[26]
2. An excess of book value over fair value of an identifiable asset gives rise to a deferred tax asset. If fair value is below book value, the realization of a lower level of future economic benefits will give rise to lower future taxable income and a lower tax payable in the future. The reduction in future tax payable constitutes a deferred tax asset as at the date of acquisition, which is recognized by the acquirer.
3. Conversely, an excess of fair value over book value of an identifiable liability gives rise to a deferred tax asset, and an excess of book value over fair value of an identifiable liability gives rise to a deferred tax liability.
4. For simplicity, we can assume a right of set-off between deferred tax assets and deferred tax liabilities and show a net position (that is, either a deferred tax liability or a deferred tax asset on the net difference between fair values and book values of identifiable net assets) when we allocate the consideration transferred.
5. Note that the deferred tax liabilities or deferred tax assets recognized on the fair value adjustments are adjustments to the deferred tax liabilities or deferred tax assets that are already in existence in the financial statements of the acquiree.

page 95

Classification or Designation of Identifiable Assets Acquired or Liabilities Assumed

Classification or designation of identifiable assets or liabilities is made by the acquirer with respect to the information, conditions, and corporate policies existing as at the acquisition date. IFRS 3 requires a "fresh start" approach when an

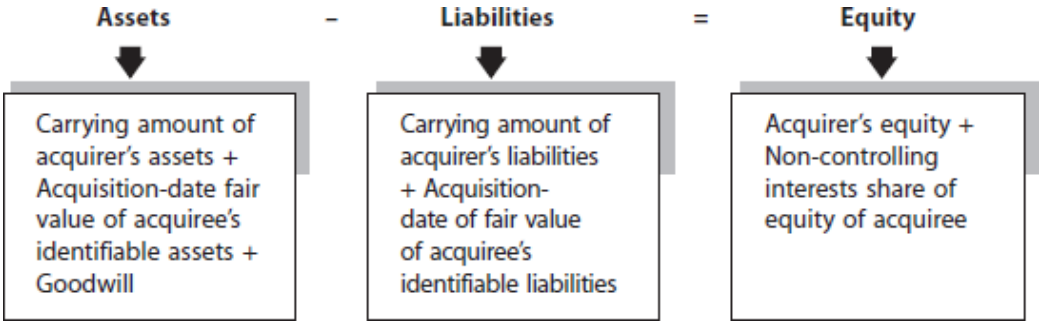
acquirer obtains control of an acquiree. A primary principle in acquisition accounting is that the acquirer has effectively acquired the net assets of an acquiree in a business combination. Hence, the classification and designation of the assets and liabilities is determined by information, conditions, and policies of the acquirer at acquisition date. Therefore, the classification in the consolidated financial statements may differ from the existing classification of that asset or liability in the acquiree's financial statements. For example, a bond investment that is classified fair value through other comprehensive income securities in the acquiree's financial statements may be reclassified to amortized cost securities in the consolidated financial statements if the acquirer's business model is to hold such bonds to collect coupon payments to maturity.

On acquisition, the acquirer is required or permitted to re-designate an asset or liability in accordance with its accounting policies. The acquirer is also required to apply the appropriate accounting standards on classification and designation of the acquired asset or liability in the light of conditions, information, and corporate policies at acquisition date. For example, an acquiree may have a building that is classified as fixed assets on its statement of financial position. However, on acquisition, the acquirer may choose to rent out the building rather than occupy it. The building would be designated as investment property on acquisition.

Non-controlling Interests

Non-controlling interests arise when the acquirer obtains control of a subsidiary but does not have full ownership of the voting rights of that subsidiary. Non-controlling interests are the other shareholders of the subsidiary. In a business combination, the acquirer recognizes non-controlling interests as equity. Since the assets and liabilities of the acquiree are consolidated in full and not proportionately with the assets and liabilities of the acquirer, non-controlling interests are recognized to represent outside interests' share in the net assets of the acquiree. The familiar accounting equation is expanded below to include non-controlling interests. At acquisition date, the following components will be recognized on the consolidated financial statements.

page 96



What is the basis of measurement of non-controlling interests as at acquisition date? IFRS 3 allows acquirers one of two basis of measurement for each business combination. IFRS 3 is generous in this regard. The acquirer is not constrained by an accounting policy that applies to all business combinations but makes the choice for each business combination. Non-controlling interests at acquisition date are measured at either:

1. Fair value; or
2. The present ownership instruments' proportionate share in the recognized amounts of identifiable net assets.[27]

Under the first alternative, the acquirer needs to obtain a reliable measure of fair value of non-controlling interests. The most objective measure is a quoted price in an active market of the acquiree's shares. However, quoted prices are rarely available for acquired subsidiaries. By virtue of the majority shareholding by the acquirer, the acquiree is typically a private entity. In the absence of quoted prices, the acquirer may use valuation techniques to value the non-controlling interests. The acquirer may use peer companies' valuation or make appropriate assumptions to value non-controlling interests as at acquisition date.

Typically, the fair value of non-controlling interests as at acquisition date is as follows:

$$\text{Fair value of non-controlling interests at date of acquisition} = \text{Percentage shareholding of non-controlling interests} \times \text{Fair value of the acquiree as at date of acquisition}$$

Generally, the fair value of non-controlling interests as at acquisition date would not be proportional with the fair value of consideration transferred by the acquirer to obtain control. Often, a control premium is paid by the acquirer to obtain control and should not be included in the fair value of non-controlling interests at acquisition date.

Under the second alternative, the acquirer applies the present ownership interests held by non-controlling interests to the recognized amounts of identifiable net assets to determine the initial amount of non-controlling interests. If non-controlling interests have potential ordinary shares (for example, convertible bonds or options), these other ownership interests should be measured at fair value.

Measuring non-controlling interests as a proportion of the fair value of identifiable net assets was the basis of measurement in the previous version of IFRS 3. Measuring non-controlling interests at fair value is a new measurement basis introduced in the current version of IFRS 3. Although an option is permitted for the basis of measurement for the initial recognition of non-controlling interests under IFRS 3, the US GAAP equivalent (US Codification Topic 805 *Business Combinations* previously Statement of Financial Reporting Standard 141(R) *Business Combinations*) does not permit the option. Acquirers applying US GAAP have to recognize non-controlling interests at full fair value. The Board, in their Basis of Conclusions, upheld the principle that "an acquirer should measure all components of a business combination, including any non-controlling interest in an acquiree, at their acquisition-date fair values."[28] Permitting a choice was not the first preference of the Board as it reduces comparability but the option was given to enable the standard to be issued in the absence of a Board consensus on a single measurement basis.[29]

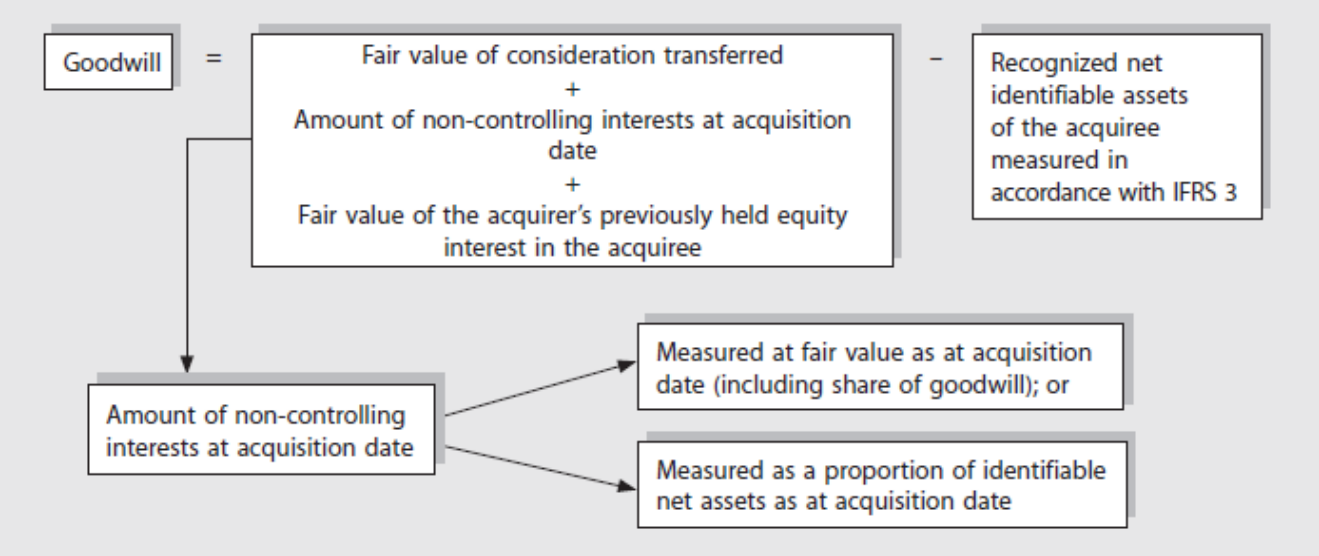
page 97

Goodwill

Goodwill is an unidentifiable asset whose existence is an important motivation for an acquirer to obtain control of the acquiree. Goodwill is the premium that an acquirer pays to achieve synergies from the business combination. The acquirer is required to recognize goodwill acquired in a business combination separately as an asset (IFRS 3:32).

Under IFRS 3, goodwill is determined as a residual in accordance with the equation shown in Figure 3.11. Goodwill under IFRS 3 may be one of two values depending on the measurement basis for non-controlling interests as at acquisition date shown in Figure 3.11.

FIGURE 3.11 Goodwill determination



Hence, goodwill arising from a business combination may assume one of two figures since IFRS 3 allows two bases for measuring non-controlling interests. If non-controlling interests are measured at full fair value, goodwill recognized in the consolidated financial statements will include non-controlling interests' share of goodwill. Unless otherwise indicated, the illustrations and problems in this text use the full fair value approach to recognize non-controlling interests and to determine goodwill.

If an acquirer purchases shares in an acquiree in stages, the previously held equity interests in the acquiree before acquisition date will have to be remeasured to fair value at the acquisition date when control was obtained, before goodwill is computed. The illustrations and problems in Chapters 3 to 6 assume single-step acquisition, while multiple-step acquisitions are dealt with in Chapter 7.

Figure 3.11 shows that goodwill is a residual and is dependent on the reliable measurement of consideration transferred, non-controlling interests, previously held equity interests, and identifiable net assets. The residual approach in IFRS 3 to determining goodwill means that goodwill may capture identifiable assets or liabilities that fail to meet the recognition or measurement criteria in IFRS 3. In IFRS 3 Appendix B, goodwill is defined as "an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized."

page 98

While goodwill is determined as a residual, it should in substance be:

1. An expectation of future economic benefits arising from the acquisition; and
2. An asset that is integral to the entity as a whole, which is not individually identifiable or separable as a stand-alone asset.

However, any recognition or measurement error in the determinants of goodwill (that is, consideration transferred, non-controlling interests, fair value of previously held equity interests, and recognized amounts of identifiable net assets) will result in the residual capturing elements that are not essentially goodwill in nature.

Johnson and Petrone (1998)[30] describe the residual approach of measuring goodwill as a "top-down approach." However, they suggest that this approach may include non-goodwill items if recognition or measurement errors are not corrected. The Exposure Draft to Statement of Financial Accounting Standard 141 (1999, 2001)[31] and Johnson and Petrone (1998) suggest that the following should not be considered as "goodwill":

1. Recognition and measurement errors relating to identifiable net assets. These errors may arise from the inability to obtain reliable fair values for a recognized asset or liability. Errors may also arise from the failure to recognize an identifiable asset (for example, an intangible asset) or an identifiable liability. Since goodwill is an unidentifiable asset, it should not include any unrecognized identifiable asset or liability or measurement errors relating to an identifiable asset or liability.
2. Overpayment for an acquisition or overvaluation of consideration transferred. In a bidding war, the acquisition price may include a bidding premium that is not substantiated by future economic benefits. Overpayment is likely to lead to goodwill impairment losses.

Since IFRS 3 uses the residual approach to determine goodwill, there is a risk that recognition and measurement errors and non-goodwill elements are included in goodwill. If there is an overpayment for an acquisition, it is our view that the likelihood of a "Day 1" impairment loss rises and in principle, the impairment loss should be recognized immediately. With respect to measurement and recognition errors, the one-year "measurement period" is important to re-assessing the values recognized to ensure that goodwill does not capture identifiable elements or recognition or measurement errors.

Goodwill arises because a combination of net assets or a combination of entities yields a higher return than stand-alone assets or stand-alone entities. In their analysis, the aforementioned FASB's Exposure Draft and Johnson and Petrone (1998) propose that goodwill includes:

1. "Core goodwill," or the internally generated goodwill, of the acquiree as a stand-alone entity. This goodwill is the "going concern element" of the acquiree and represents the ability of the acquiree to earn a higher rate of return as an entity than would be expected from the individual assets of the entity. Core goodwill is the

synergies among the assets of an acquiree such that the fair value of the acquiree is greater than the sum of the fair value of identifiable net assets of the acquiree.

2. Fair value of synergies (or "combination goodwill" as described by Johnson and Petrone) that are generated from the unique combination comprising the acquirer and the acquiree. Combination goodwill is the synergies among the group entities such that the fair value of the group is greater than the sum of the fair value of the individual entities.

In the previous section, we had explained that business combinations may take different forms. Regardless of the mode of business combination, the acquisition method should be applied and would give rise to the same effects. If the acquirer acquires directly the net assets of a business, the acquirer would recognize the identifiable assets and liabilities and goodwill onto its own books. There will be no difference between the legal entity and economic entity of the acquirer. In a business combination where the net assets of the acquirer and acquiree are transferred to a newly formed legal entity, the carrying amount of the net assets of the acquirer and the fair value of the net assets of the acquiree and the resulting goodwill will be transferred to the newly formed legal entity. However, if the acquirer obtains control through the acquisition of voting rights, the acquirer and the acquiree will have a parent-subsidiary relationship and consolidated financial statements will be prepared. The consolidated financial statements will show the effects of the combined entity as one economic unit and will show the effects of the acquisition as if the acquirer is directly acquiring the net assets of the acquiree. In all three scenarios, the same effects will be reported on the statement of financial position.

Illustration 3.4 relates to the direct acquisition of identifiable net assets of the acquiree while Illustration 3.5 relates to the acquisition of voting rights of an acquiree. Both illustrations show how goodwill is determined in accordance with IFRS 3.

ILLUSTRATION 3.4 Direct acquisition of net assets of a business

On 1 July 20x1, Diamond Co and Gold Co concluded on an agreement to transfer the business of Gold Co to Diamond Co in exchange for consideration to be transferred by Diamond Co to Gold Co as follows:

(a) Issue of 1,000,000 ordinary shares of Diamond Co to Gold Co on 1 July 20x1, the fair value per share of Diamond Co was $10 per share.

(b) Additional payment by Diamond Co to Gold Co if the business achieves the following profit benchmarks during the financial year ending 31 December 20x2:

Benchmarks	Payment	Probability
Profit greater than $30,000,000	$6,000,000	0.60
Profit between $15,000,000 and $30,000,000	3,000,000	0.30
Profit below $15,000,000	0	0.10

The cost of capital of Diamond Co was 5% per annum while that of Gold Co was 10% per annum.

(c) Transfer of title deeds of freehold land. The fair value of the land on 1 July 20x1 was $30,000,000, while the carrying amount at cost in Diamond Co's books was $25,000,000.

(d) Immediate payment of cash of $5,000,000.

Consultants who performed a due diligence review provided the following fair value information as at 1 July 20x1. Deferred tax liabilities include the additional deferred tax liabilities arising from the acquisition.

	Fair value of identifiable net assets
Property, plant and equipment	$10,000,000
Intangible assets	25,000,000
Inventory	6,000,000
Accounts receivable	8,900,000
Cash	3,000,000
Total assets	$52,900,000
Deferred tax liabilities	$ 1,800,000
Loans	20,000,000
Provisions	3,200,000
Accounts payable	7,600,000
Total liabilities	$32,600,000
Fair value of identifiable net assets	$20,300,000

Required:

1. Determine the fair value of the contingent consideration as at 1 July 20x1.
2. Determine the fair value of consideration transferred by Diamond Co to Gold Co as at 1 July 20x1.
3. Determine the goodwill to be recognized by Diamond Co as at 1 July 20x1.
4. Assume that the consideration was transferred in full on 1 July 20x1, show the journal entries that have to be passed by Diamond Co to record the acquisition.
5. Show the journal entries that have to be passed by Diamond Co during the year ended 31 December 20x2, assuming the following information:
   (a) Property, plant, and equipment had an average remaining useful life of ten years from acquisition date.
   (b) Intangible assets had indefinite useful life. On 31 December 20x2, the recoverable amount of the intangible assets was $20,000,000.
   (c) Seventy percent of the inventory was sold during 20x2.
   (d) On 31 December 20x2, the acquired business earned a profit of $32,000,000.

For this illustration, the tax-related entries are ignored.

1. Determination of the fair value of the contingent consideration

First, we should determine the expected value of the contingent consideration.

	Probability	Payment	Expected value
Profit greater than or equal to $30,000,000	0.60	$6,000,000	$3,600,000
Profit between $15,000,000 and $30,000,000	0.30	3,000,000	900,000
Profit below $15,000,000	0.10	–	–

Total	$4,500,000

Since the contingent consideration is payable as at 31 December 20x2, we should discount the future expected value to arrive at the present value of the expected value. We are given two discount rates — the cost of capital of Diamond Co at 5% per annum and the cost of capital of Gold Co at 10% per annum. Since the contingent payment is a promised outflow from Diamond Co to Gold Co, the default risk relates to Diamond Co not fulfilling its promise. The cost of capital that captures the default or credit risk of Diamond Co is 5%. The converse will be true if the promise relates to a contingent refund from Gold Co to Diamond Co. In this situation, we apply 10% as the discount factor.

page 101

Present value of the expected value discounted at 5% per annum for 1.5 years is $4,182,429. The payable is best reflected as a gross amount of $4,500,000 and an unamortized discount of $317,571. The unamortized discount represents future interest expense on the payable.

2. Determination of the fair value of consideration transferred

Next, we determine the fair value of consideration transferred as at acquisition date, regardless of when the transfer is made. Since acquisition date is the date when control is obtained, we have to determine all fair value measurements as at this date to determine the goodwill that was acquired.

Consideration transferred	
Fair value of equity securities	$10,000,000
Fair value of contingent consideration	4,182,429
Fair value of land transferred	30,000,000
Cash	5,000,000
Fair value of consideration transferred	$49,182,429

3. Determination of goodwill

Under IFRS 3, goodwill is determined as a residual, after deducting the fair value of identifiable net assets from the fair value of consideration transferred. In this scenario, where there is a direct acquisition of net assets, non-controlling interests are not part of the equation.

$$\begin{aligned} \text{Goodwill} &= \text{Fair value of consideration transferred} - \text{Fair value of identifiable net assets} \\ &= \$49{,}182{,}429 - \$20{,}300{,}000 \\ &= \$28{,}882{,}429 \end{aligned}$$

4. Journal entries in 20x1

The acquirer's journal entries to record the acquisition are as follows:

1 July 20x1	Dr Land	5,000,000	
	Cr Remeasurement gain		5,000,000
	Remeasurement of land before transfer		

Explanatory note:

Diamond Co had transferred its land to Gold Co in exchange for the business of Gold Co. IFRS 3 requires the acquirer to remeasure its non-cash assets that is part of the consideration transferred. Diamond Co recognizes a remeasurement gain from the land just prior to the transfer. Effectively, the land had been sold to Gold Co in exchange

for the business. Since the land is not retained by the acquirer or its acquired business, the acquirer should recognize the gain.

1 July 20x1	Dr Goodwill	28,882,429	
	Dr Property, plant and equipment	10,000,000	
	Dr Intangible assets	25,000,000	
	Dr Inventory	6,000,000	
	Dr Accounts receivable	8,900,000	
	Dr Unamortized discount	317,571	
	Cr Loans		20,000,000
	Cr Provisions		3,200,000
	Cr Accounts payable		7,600,000
	Cr Share capital		10,000,000
	Cr Contingent consideration payable		4,500,000
	Cr Land		30,000,000
	Cr Cash		2,000,000
	Cr Deferred tax liability		1,800,000
	Acquisition of business from Gold Co		

Explanatory note:

Journal entry 2 records the exchange transaction in the acquisition. There is an outflow of resources and equity from Diamond Co to Gold Co, and in turn, Diamond Co recognizes identifiable net assets and goodwill. Identifiable net assets of the acquired business are recognized at fair value. Since there is a direct acquisition of the net assets, the individual assets and liabilities are added to the existing assets and liabilities of Diamond Co. Cash of $2,000,000 represents the difference between the cash transferred of $5,000,000 and the cash balance acquired of $3,000,000. The contingent consideration payable shows two accounts — the gross payable of $4,500,000 and the unamortized discount (a contra account) of $317,571.

In practice, acquirers may not maintain separate contra accounts. However, for our purposes, we show them as separate to illustrate the principle that present value of future payments or receipts entail the recognition of interest expense or income.

5. Journal entries in 20x2

The acquirer's journal entries to record transactions in 20x2 are as follows:

20x2	Dr Depreciation	1,000,000	
	Cr Accumulated depreciation		1,000,000
	Depreciation of property, plant and equipment		

20x2	Dr Impairment loss	5,000,000	
	Cr Accumulated amortization and impairment		5,000,000
	Impairment loss of intangible assets		

20x2	Dr Cost of sales	4,200,000	
	Cr Inventory		4,200,000
	Cost of sales of inventory		

20x2	Dr Interest expense	213,010	
	Cr Unamortized discount		213,010
	Interest expense on contingent consideration		

Date	Interest	Carrying amount
1 July 20x1		$4,182,429
31 December 20x1	$104,561	4,286,990
31 December 20x2	213,010*	4,500,000

*Adjusted for rounding up differences

20x2	Dr Loss on settlement	$1,500,000	
	Dr Contingent consideration	4,500,000	
	Cr Cash		$6,000,000
	Settlement of contingent consideration		

Explanatory note:

Since the identifiable assets were recognized at fair value on acquisition date, the subsequent depreciation, impairment loss, and cost of sales were also determined on the basis of fair value. The contingent consideration payable was determined on the basis of the present value of the expected value and would give rise to interest over the period from 1 July 20x1 to 31 December 20x2. The amortization table shows the calculation of interest expense (carrying amount in 20x2 is adjusted for rounding up differences). Diamond Co recognized a loss of $1,500,000 on settlement, which is the difference between the expected value of $4,500,000 and the final settlement amount of $6,000,000.

ILLUSTRATION 3.5 Acquisition of a subsidiary

On 1 July 20x1, P Co purchased 1,500,000 shares from S Co's existing owners. The total number of shares issued by S Co was 2,000,000. A reliable measure of the fair value of S Co's share was $10.00 per share. P Co was obligated to pay an additional $1,000,000 to the vendors of S Co if S Co maintained existing profitability over the subsequent two years from 1 July 20x1. It was highly likely that S Co would achieve this expectation and the fair value of the contingent consideration was assessed at $1,000,000. Fair value of non-controlling interests as at 1 July 20x1 was $5,000,000. The identifiable net assets of S Co as at 1 July 20x1 are shown below. Tax effects on fair value differences have not yet been recognized. The tax effects on fair value differences are to be recognized on the basis that the tax bases of the identifiable assets acquired and liabilities assumed are not affected by the business combination. Assume a tax rate of 20%.

	S Co Book value	S Co Fair value	S Co Fair value less book value
Plant and equipment	$ 3,000,000	$ 2,800,000	$ (200,000)
In-process research and development	0	10,000,000	10,000,000
Other intangible assets	1,200,000	2,500,000	1,300,000
Inventory	500,000	650,000	150,000
Accounts receivable	400,000	350,000	(50,000)
Cash	50,000	50,000	0
Total assets	$ 5,150,000	$ 16,350,000	$ 11,200,000
Current and long-term liabilities	$ 1,500,000	$ 1,500,000	$ 0
Contingent liabilities	0	500,000	500,000
Total liabilities	$ 1,500,000	$ 2,000,000	$ 500,000
Net assets	$ 3,650,000	$ 14,350,000	$10,700,000
Share capital	$ 2,000,000		
Retained earnings	1,650,000		
Shareholders' equity	$ 3,650,000		

Required:

1. Determine the acquirer's interest in the acquiree.
2. Determine the fair value of consideration transferred.
3. Determine goodwill arising from the acquisition.
4. Prepare the consolidation entry to eliminate investment in S Co as at acquisition date.

1. Determination of the acquirer's interest in the acquiree

$$\text{Percentage ownership} = \frac{1{,}500{,}000}{2{,}000{,}000}$$
$$= 75.00\%$$

Since it is the majority shareholder, P has the ability to affect the variable returns of S through its voting rights. Hence, P is the parent of S.

2. Determination of the consideration transferred

Since the fair value of contingent consideration is $1,000,000, P should include the fair value in determining the consideration transferred.

$$\text{Consideration transferred} = (1{,}500{,}000 \times \$10) + \$1{,}000{,}000$$
$$= \$16{,}000{,}000$$

3. Determination of goodwill

$$\text{Goodwill} = \begin{matrix}\text{Consideration}\\ \text{transferred}\end{matrix} + \begin{matrix}\text{Fair value of}\\ \text{non-controlling interests}\end{matrix} - \begin{matrix}\text{Fair value of identifiable}\\ \text{net assets at acquisition date}\end{matrix}$$

Arising from the net fair value difference of $10,700,000 is a deferred tax liability of (20% × $10,700,000) = $2,140,000.

Therefore,

$$\begin{aligned}\text{Fair value of identifiable net assets} &= \$14{,}350{,}000 - \$2{,}140{,}000\\ &= \$12{,}210{,}000\\ \text{Goodwill} &= \$16{,}000{,}000 + \$5{,}000{,}000 - \$12{,}210{,}000\\ &= \$8{,}790{,}000\end{aligned}$$

4. Consolidation Journal entry to eliminate the investment in S Co

Dr Share capital (S)	2,000,000	
Dr Retained earnings (S)	1,650,000	
Dr Goodwill	8,790,000	
Dr In-process research and development	10,000,000	
Dr Other intangible assets	1,300,000	
Dr Inventory	150,000	
Cr Plant and equipment		200,000
Cr Accounts receivable		50,000
Cr Contingent liabilities		500,000
Cr Investment in S		16,000,000
Cr Deferred tax liability		2,140,000
Cr Non-controlling interests		5,000,000

Explanatory note:

The debit or credit to each individual asset or liability account is to adjust the book values of assets and liabilities at the date of acquisition to their fair values. The elimination of the investment entry in consolidation is repeated each year for as long as the investment exists. The processes are elaborated in Chapter 4.

However, individual assets will be depreciated, amortized or sold, and liabilities will be settled in periods subsequent to the date of acquisition. Since these assets and liabilities are adjusted to fair values as at the date of acquisition in the consolidated financial statements, the depreciation or amortization or cost of sales of these assets, subsequent to the date of acquisition, will also be recognized by the acquirer at their fair values. Hence, the cumulative depreciation and amortization effects of the fair value differences will be built up on an year-by-year basis and will finally be equal to the original fair value difference as at the date of acquisition. In a direct acquisition of net assets of a business by an acquirer, the amortization, depreciation, and expensing off the fair value of net assets acquired is recorded in the legal entity's financial statements of the acquirer. In that situation, the legal entity and the economic entity are one. For example, if the fair value of intangible asset acquired is $10,000,000 and the estimated useful life of the asset is ten years, the acquirer will record an amortization expense of $1,000,000 in its books:

Dr Amortization expense	1,000,000	

Cr Accumulated amortization 1,000,000

However, in the acquisition of a subsidiary through its voting rights, the economic entity is different from the legal entity. The year-by-year amortization entries have to be re-enacted in consolidation adjustments. They will not be passed through in the legal entity's books.

Hence, if the business combination is effected through the acquisition of shares (rather than the direct purchase of net assets), consolidation processes are necessary to show the effects of acquisition accounting on the economic entity. The detailed processes on consolidation are discussed in the subsequent chapters.

Gain from a Bargain Purchase

When an acquirer makes a bargain purchase (for example, in a forced sale), a gain arises. For example, during the financial crisis in 2008, Barclays PLC reported a gain on acquisition of £2,262 million from its acquisition of Lehman Brothers' North American business. Barclays paid total consideration of £874 million and acquired fair value of net assets of £3,136 million (Note 40(a), Barclays Bank PLC Annual Report 2008). The gain from a bargain purchase was previously described by IFRS 3 (2004) as "negative goodwill." However, this description no longer applies as it is not a "negative asset," but in essence, it is a windfall gain to the acquirer. As such, the acquirer should recognize the gain as income. The gain is attributed to the acquirer (IFRS 3:34). Since the forced sale primarily benefited the acquirer, the gain is not attributed to non-controlling interests. It is also not appropriate to recognize a gain for the acquirer and goodwill for non-controlling interest at the same time.

Essentially, a gain from a bargain purchase arises when:

$$\left(\begin{array}{c}\text{Fair value of}\\ \text{consideration}\\ \text{transferred}\end{array} + \begin{array}{c}\text{Amount of}\\ \text{non-controlling interests}\\ \text{as at acquisition date}\end{array} + \begin{array}{c}\text{Fair value of}\\ \text{previously held}\\ \text{equity interests}\end{array}\right) < \begin{array}{c}\text{Fair value}\\ \text{of identifiable}\\ \text{net assets}\end{array}$$

The gain is not recognized as a "negative asset" under IFRS 3. Instead, the acquirer must reassess the recognition and measurement of the critical variables, namely the fair value of identifiable net assets, amount of non-controlling interests at acquisition date, and the consideration transferred. If the reassessment confirms no recognition or measurement errors, the gain should be recognized immediately in profit or loss (IFRS 3:34). This treatment contrasts with that of earlier standards, where "negative goodwill" was recognized on the statement of financial position when it related to expectations of future losses and expenses identified in the acquirer's acquisition plan. Illustration 3.6 demonstrates how a gain from a bargain purchase should be accounted for under IFRS 3.

ILLUSTRATION 3.6 Gain from a bargain purchase

P Co, a venture capitalist, paid $600,000 to acquire an 80% interest in S Co. S Co had been plagued by many troubles, including a lawsuit from a competitor for patent infringement. S Co was adjudged to be guilty but was appealing against the judgment. In view of the uncertainty of the outcome of the lawsuit and its impact on the future viability of S Co, the existing owner of S Co was willing to sell the company at a discount to its net fair value. The fair values of the identifiable net assets, non-controlling interests, and the consideration transferred were reassessed and deemed to be reliably determined. Hence, the gain arising was taken to the income statement in the year of the acquisition. The fair value of non-controlling interests of S Co, unlike the fair value paid by P Co, is not at a discount. It would not be meaningful to recognize goodwill attributable to non-controlling interests and a gain from bargain purchase for P Co

at the same time. Hence, we measure non-controlling interests as a proportion of the fair value of identifiable assets instead.

Consideration transferred (A)			$600,000
Non-controlling interests as a proportion of the fair value of identifiable net assets (B)			$304,000
	Fair value	**Book value**	
Assets	$5,000,000	$5,000,000	
Liabilities	(3,000,000)	(3,000,000)	
Contingent liabilities	(600,000)	0	
Identifiable net assets	$1,400,000	$2,000,000	
Share capital		$ 500,000	
Retained earnings		1,500,000	
Equity		$2,000,000	
Excess of book value over fair value			(600,000)
Deferred tax asset on excess of book value over fair value at 20%			120,000
Fair value of identifiable net assets, after including deferred tax asset = $1,400,000 + $120,000 (C)			1,520,000
Gain from a bargain purchase = (A) + (B) – (C)			(616,000)

CJE1: Elimination of investment and recognition of gain from a bargain purchase

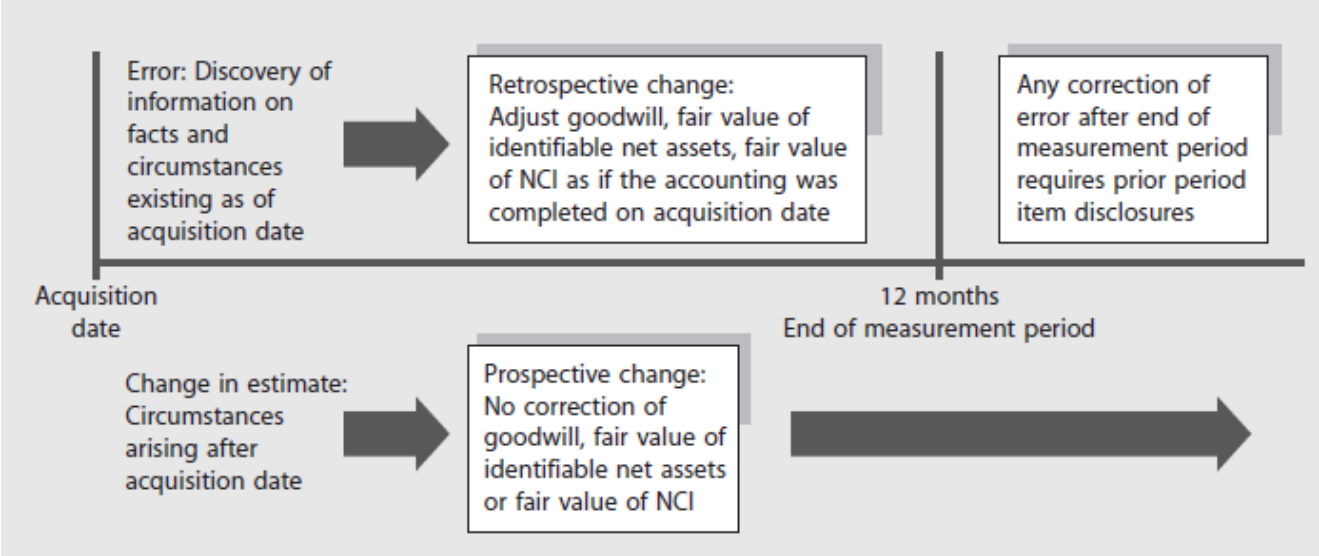
Dr Share capital	500,000	
Dr Retained earnings	1,500,000	
Dr Deferred tax asset	120,000	
Cr Investment in S		600,000
Cr Gain from a bargain purchase (I/S)		616,000
Cr Contingent liabilities		600,000
Cr Non-controlling interests		304,000

Measurement Period

IFRS 3 allows adjustments to be made retrospectively to "provisional amounts" relating to goodwill, fair values, and consideration transferred if, during a one-year period from the acquisition date, new information is obtained about facts and circumstances existing as at acquisition date (IFRS 3:45). The one-year period is known as the "measurement period." However, it is necessary to note that information that relates to events and circumstances arising after the acquisition date does not lead to measurement period adjustments. For example, the impairment loss on an acquiree's intangible asset arising from technological changes after acquisition date is not a measurement period adjustment. Hindsight correction is allowed only because of incorrect or incomplete information available as at

acquisition date. For example, the acquirer may have failed to obtain information on all contracts of the acquiree as at acquisition date. After the measurement period, any correction of errors will be deemed as a prior-period adjustment in accordance with IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors.* However, a change in estimate arising from information on new events and circumstances (for example, the settlement amount of a contingent liability) should be recognized in the current period (see Figure 3.12).

FIGURE 3.12 Measurement period



Purchase of Assets that Do Not Constitute a Business

As discussed in the preceding sections, for a transaction to qualify as a business combination, the subject matter under which the purchaser is acquiring has to meet the definition of a business under IFRS 3. If the target[32] does not constitute a business, the transaction is accounted for as an acquisition of an asset or a group of assets. In this case, the acquisition method of accounting under IFRS 3 will not apply and paragraph 2b of IFRS 3 prescribes the accounting treatment.

Specifically, the purchaser will have to identify and recognize the individual identifiable assets acquired as well as liabilities assumed in the transaction. This includes any asset that meets the definition and recognition criteria for intangible assets under IAS 38 *Intangible Assets*. The purchase consideration, which is the fair value of the consideration transferred, including transaction costs, is allocated to the individual assets and liabilities on the basis of the relative fair values at the date of the purchase (IFRS 3:2(b)). Fair value is measured in accordance with IFRS 13 *Fair Value Measurement*. In other words, the fair values of all the identifiable assets and liabilities have to be determined as at the date of the purchase for the purpose of the allocation of the purchase consideration. Accordingly, acquisition of assets does not give rise to goodwill. Illustration 3.7 demonstrates the accounting.

ILLUSTRATION 3.7 Accounting for acquisition of assets that do not constitute a business

Company X, a private company, paid $600,000 in cash to acquire a group of net assets from Company Y. The carrying value for the group of assets and the fair value as at the date of purchase are reflected in the table below. This group of assets has been assessed by Company X to not meet the definition of a business under IFRS 3. Accordingly, this is a not a business combination and the acquisition method under IFRS 3 does not apply. Company X applies the accounting treatment under paragraph 2b of IFRS 3 for the acquisition of assets.

	Carrying values ($)	Fair value at date of acquisition ($)	Allocated cost ($)
Intangible asset – club membership	200,000	300,000	324,000
Plant	150,000	200,000	216,000
Inventories	50,000	55,000	60,000
	400,000	555,000	600,000

Company X will pass the following accounting entry in its standalone financial statements:

Dr Intangible assets	324,000	
Dr Plant	216,000	
Dr Inventories	60,000	
Cr Cash		600,000
Being accounting for acquisition of assets		

This illustration helps us to identify some key differences between acquisition accounting for a business combination and acquisition of assets that do not constitute a business as set out below. This comparison also allows us to summarize some of the fundamental features of accounting for a business combination.

1. Identifiable assets acquired and liabilities assumed are recognized at their individual fair values at the date of acquisition in a business combination. However, in an acquisition of a group of net assets that do not constitute a business, assets and liabilities are recognized based on an allocated amount derived from their relative fair values at the date of purchase in an asset acquisition.
2. Directly attributed transaction costs are expensed in a business combination. In the case of asset acquisition, such costs are capitalized as part of the cost of the asset acquired.
3. Goodwill or gain on bargain purchase arises only in business combination. No goodwill is recorded for asset acquisitions.
4. Deferred tax assets and liabilities are recognized on the fair value differentials on identifiable assets and liabilities on business combinations. No deferred tax asset or liability is recognized for asset acquisitions.
5. Disclosure requirements are more extensive in business combinations as compared to asset acquisitions.

CONCLUSION

Business combinations are characterized by three conditions — an acquirer must exist, the acquirer has control over an acquiree or the business acquired, and the acquiree is a business. There are many forms of business combinations.

In some cases, the acquirer acquires directly the net assets of the business. The acquirer recognizes the assets and liabilities acquired in the acquirer's legal entity financial statements. In most other cases, the acquirer acquires control over the equity of the acquiree. In this situation, the acquirer and acquiree retain their separate legal identities. However, economically, the entities belong to the same group. Regardless of the form of the business combination, the economic substance is the same and the acquisition method should be applied in all business combinations. The acquisition method requires the acquirer to be identified with reference to the control criteria of IFRS 10. The acquirer should then recognize and measure identifiable net assets at fair value at acquisition date in accordance with the requirements of IFRS 3. IFRS 3 has a number of recognition and measurement requirements that seek to reflect the fair value components that are priced in the consideration transferred. Goodwill is a residual and is determined on a "top down" approach. As the residual approach is used, goodwill may include recognition and measurement errors and also identifiable elements. IFRS 3 allows acquirers a 12-month measurement period by which the "provisional" amounts of goodwill, fair value of identifiable net assets, fair value of non-controlling interests, and fair value of previously held interests may be corrected and the revised amounts applied retrospectively.

APPENDIX 3A

Investment Entities

On 31 October 2012, the Board issued Investment Entities (Amendments to IFRS 10, IFRS 12, and IAS 28), which introduces an exception to the consolidation principle for a particular class of investors described as "investment entities." This exception is intended to address the special information needs of users on the performance of asset management and private equity industries. The underlying view is that consolidated information may not be as relevant to this class of business, given the purpose of the investment holdings, the nature of the returns, and the relative importance of fair value information over consolidated information. This is reflected in the Board's feedback statement in which it explained that consolidation does not provide useful and relevant information and impedes effective decision making with respect to evaluating the performance of these entities.

Based on the Board's impact analysis, the entities that are most likely to be affected by this amendment are private equity or venture capital funds and master-feeder or fund-of-funds structures where an investment entity parent has controlling interests in investment entity subsidiaries.

Exception to Consolidation

Under IFRS 10, an entity that qualifies as an investment entity would be required to measure investees it controls, other than investees that provide services to the entity,[33] at fair value through profit or loss in accordance with IFRS 9 rather than consolidating them (IFRS 10:31). For such entities, they will present separate financial statements as their only financial statements.

Criteria for Qualification

In order to qualify for this measurement exception, an entity would be required to meet the definition of an investment entity and consider whether it has the typical characteristics of an investment entity as explained below. The absence

of any of the typical characteristics does not necessarily disqualify an entity from being classified as an investment entity. However, the entity would be required to disclose the reasons for concluding that it is an investment entity in spite of the absence of any of the typical characteristics.

Definition of Investment Entities

In essence, an investment entity has three essential features that differentiate it from other parent companies. Specifically, IFRS 10 Appendix A defines an investment entity "as an entity that:

1. Obtains funds from one or more investor for the purpose of providing those investor(s) with investment management services;
2. Commits to its investor(s) that its business purpose is to invest funds solely for returns from capital appreciation, investment income, or both; and
3. Measures and evaluates the performance of substantially all of its investments on a fair value basis."

In the assessment of whether the definition is met, certain application guidance were included to guide the evaluation.

1. *Business purpose*

- The business purpose of the investment entity must be that of providing investment management services to its investors. However, an investment entity is not precluded from providing investment-related services to third parties in addition to its investors. The Board is of the view that such services provided to third parties are an extension of the investment entity's investing activities and this does not detract from its primary business model of investing for capital appreciation, investment income, or both. For instance, this criterion will not be met if that investor is interested in harnessing the investee's technology for its own use in addition to deriving capital appreciation and/or investment income.
- Such business purpose should be communicated clearly in documentation and other modes of communication to investors.
- Similarly, an investment entity may also participate in the following activities to maximize the investment return (capital appreciation or investment income) and which do not represent a separate substantial business activity or source of income (IFRS 10:B85D):

  (a) Providing management services and strategic advice to an investee; and

  (b) Providing financial support (such as extension of loans, capital commitments, or guarantees) to an investee

- An investment entity is required to have exit strategies documenting how the entity plans to realize capital appreciation from substantially all of the investments that have the potential to be held indefinitely (IFRS 10:B85F).[34] The exit strategy assessment would be performed at a portfolio level. Hence, different potential exit strategy, including a substantive time frame for exiting the investments, can be identified for different types or portfolios of investments.

2. *Fair value measurement*

- In order to meet the fair value measurement element of the definition, paragraph B85K of IFRS 10 requires the entity to:

  (a) provide investors with fair value information and measure "substantially all of its investments at fair value in its financial statements whenever fair value is required or permitted in accordance with IFRS Standards;"[35] and

(b) report “fair value information internally to the entity’s key management personnel”, who uses “fair value as the primary measurement attribute to evaluate the performance of, substantially, all of its investments and to make investment decisions.”

Fair value information is deemed the most relevant information to both investors and management in evaluating performance of subsidiaries.

Typical Characteristics of an Investment Entity

IFRS 10 further specifies the typical characteristics of an investment entity. As mentioned above, the absence of any of the typical characteristics does not necessarily disqualify an entity from being classified as an investment entity. However, disclosures are required when an investment entity does not have these typical characteristics. The typical characteristics (IFRS 10 paragraph 28) are as follows:

1. The entity holds more than one investment;
2. The entity has more than one investor;
3. The investors are not related parties to the entity or its group members; and
4. Ownership interests in the entity, typically a separate legal entity, are in the form of equity or similar interests.

The Board has identified these to be common features investment entities possess and accordingly, they are of the view that such characteristics could be used to assist entities to decide if they meet the definition of an investment entity. However, the Board is also mindful that there may be investment entities that may not embody all these typical characteristics for various reasons. Therefore, the Board clarified that whilst the absence of these typical characteristics may indicate that an entity does not meet the definition, the absence in itself is not conclusive. An entity that does not display all of these typical characteristics could nevertheless still meet the definition of an investment entity.

It is clear from the way the definition, application guidance, and typical characteristics are set out, the Board had intended this measurement exception to apply to only a very narrowly defined group of entities.

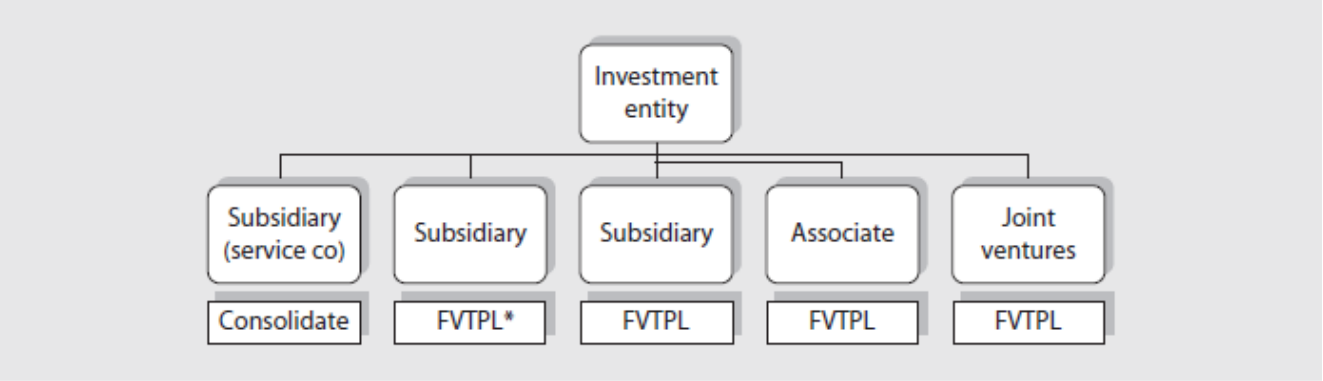
Accounting by an Investment Entity

An investment entity does not consolidate its investments in subsidiaries. Instead, it measures the investments at fair value through profit or loss in accordance with IFRS 9.

However, an investment entity may have subsidiaries that provide services that are related to the investment entity’s investment activities. These subsidiaries have to be consolidated by the investment entity. Collectively, this group of companies provide investment management services.

Figure 3A.1 shows the relationship between investees and the investment entity and the accounting treatment.

FIGURE 3A.1 Investment entity and its investees



*FVTPL denotes fair value through profit or loss.

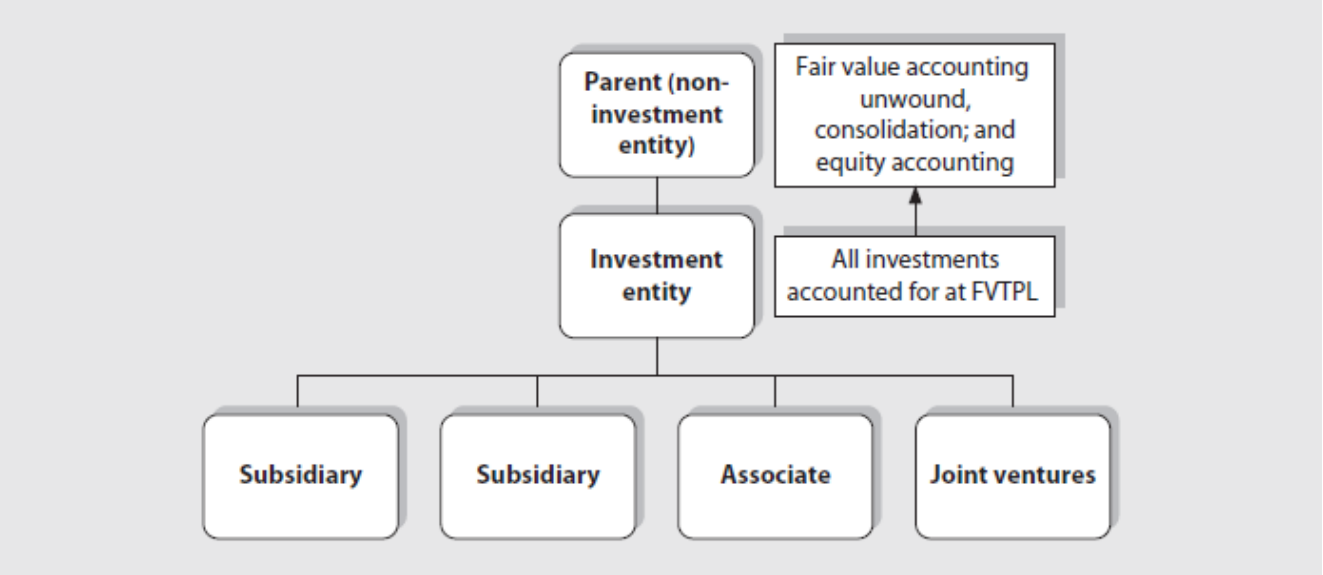
In Figure 3A.1, the investment entity parent will have to consolidate the service entity that provides services to the investment entity parent's investment activities and account all its investments in other subsidiaries at fair value through profit or loss in accordance with IFRS 9. With respect to the associates and joint ventures, the investment entity must elect to account associates, joint ventures and financial assets at fair value as discussed above. Other assets (e.g., property, plant, and equipment) and financial liabilities in the investment entity need not be measured at fair value, unless specifically required by IFRS standards.

Accounting in the Consolidated Financial Statements of a Parent that Holds an Investment Entity

The accounting treatment for the parent company of an investment entity will be dependent on whether the parent company itself is an investment entity.

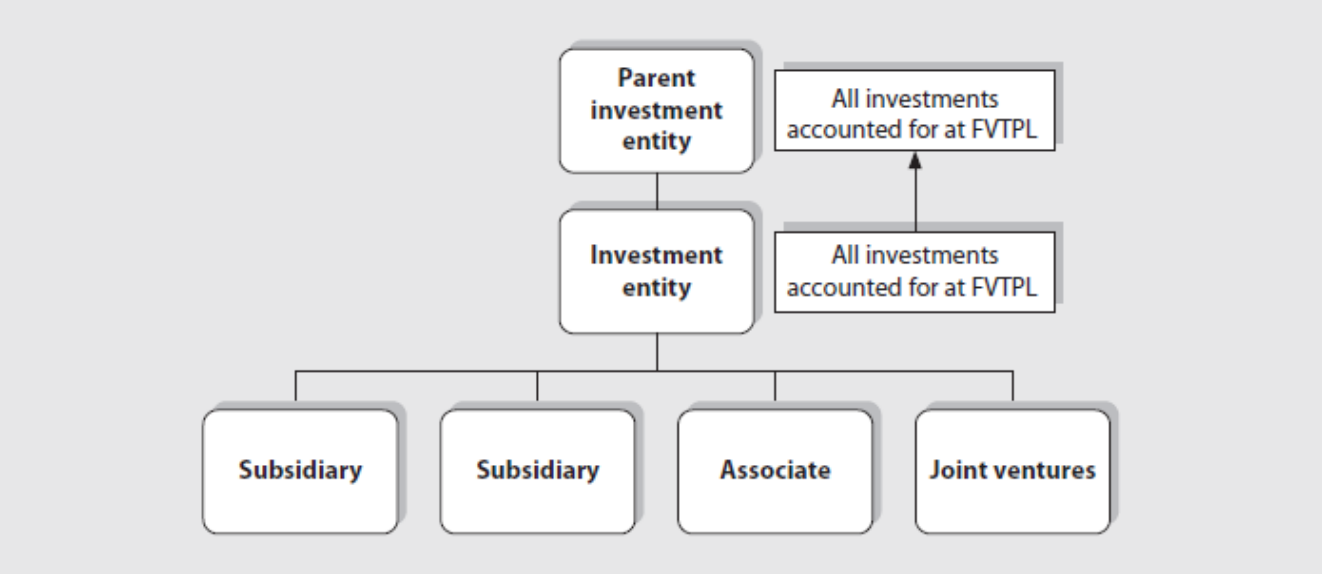
If the parent of an investment entity is a non-investment entity, then parent will have to unwind the fair value accounting applied by its investment entity subsidiaries and consolidate on a line-by-line basis the investment entity subsidiaries as well as the subsidiaries held by the investment entity, subsidiaries as illustrated in Figure 3A.2. In other words, the exception to not consolidate does not apply to the parent of an investment entity, which is not an investment entity.

FIGURE 3A.2 Accounting for non-investment entity parent



Conversely, an investment entity parent will measure all its investments in subsidiaries at fair value as shown in Figure 3A.3. In other words, the fair value accounting that is applied by the investment entity subsidiaries will not be unwound at the investment entity parent level.

FIGURE 3A.3 Accounting for investment entity parent



The rationale for the differences in the accounting treatment of a parent investment entity and a parent that is not an investment entity was extensively deliberated by the Board during the exposure draft stage. Majority of the respondents argued that if fair value information was more relevant than consolidation at an investment entity subsidiary level, it will also be more relevant at the non-investment entity parent level. However, the Board ultimately rejected the approach to permit the exception to consolidation to be "rolled up" to the non-investment entity. Among other reasons, the Board was concerned with potential structuring opportunities that could be achieved by a non-

investment entity holding subsidiaries, directly or indirectly, through an investment entity if the exception were to be extended.

Reassessment and Change of Status

IFRS 10 requires a parent to reassess whether it is an investment entity if facts and circumstances indicate that there are changes to one or more of the elements that make up the definition or the typical characteristics of the investment entity. The change in status is to be accounted for prospectively from the date when the change in status occurred. In particular, the investment in subsidiary will be accounted for either at cost on the basis of the fair value at the date of change of status (where the entity cease to meet the definition of investment entity) or at fair value in accordance with IFRS 9 (where the entity meets the definition of investment entity).

APPENDIX 3B

Illustration of a Reverse Acquisition

On 1 July 20x5, P, a private entity, arranged to have all its shares acquired by L, a publicly listed entity. The arrangement required L to issue 20,000,000 shares to P's shareholders in exchange for the existing 6,000,000 shares of P.

The following information relates to L and P at the date of exchange:

	L	P
Number of issued shares	5,000,000	6,000,000
Quoted market price per share	$ 3.00	
Fair value per share		$ 10.00
Net fair value of identifiable assets and liabilities (after-tax)	$12,000,000	$57,000,000
Book value of identifiable net assets	$10,000,000	$55,000,000
Issued equity	$ 8,000,000	$30,000,000
Retained earnings	$ 2,000,000	$25,000,000

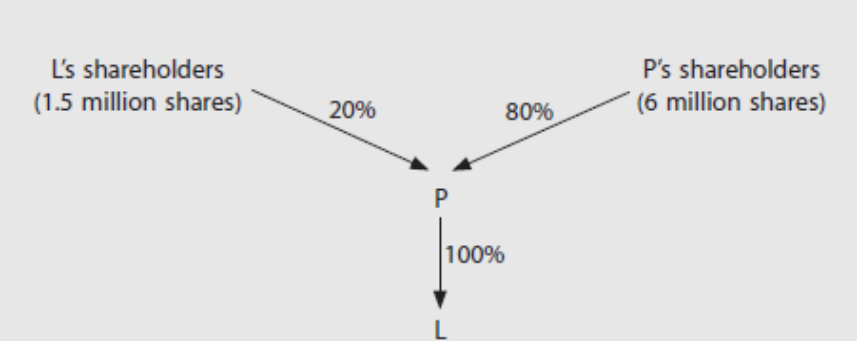
Quoted market price per share and fair value per share have incorporated the effects of the acquisition.

After the issue of an additional 20,000,000 shares by L, P's shareholders now own 80% (20 million shares out of a total of 25 million shares) of the issued shares of the combined entity. L's shareholders own 20% of the shares in the combined entity after the share issue. After the issue, the ownership structure will be as shown in Figure 3.8.

If we reverse the situation such that P is the effective parent (the "accounting acquirer") and L is the effective subsidiary (the "accounting acquiree"), we need to work out the number of shares that P would have to issue to L's shareholders for P's shareholders to own 80% in the combined entity (IFRS 3 App B:B20).

In effect, P would have to issue 1,500,000 (6 million/0.8 × 0.2) of its own shares to L's shareholders for P's shareholders to own 80% in the combined entity. If such an issue had been carried out, P would own 100% of L, and L's shareholders would own 20% of P as shown in Figure 3B.1.

FIGURE 3B.1 Re-interpreting the ownership structure of Figure 3.8: What it could have been



If P had been the acquirer, the consideration transferred is $15,000,000 (1,500,000 shares at fair value of $10 per share). Goodwill from the business combination is as follows:

Consideration transferred by P	$15,000,000
Less net fair value of identifiable assets and liabilities of L (after-tax)	12,000,000
Goodwill	$ 3,000,000

The consolidated statement of financial position immediately following the reverse acquisition is as follows:

Consolidated Statement of Financial Position (abridged)
As at 1 July 20x5

Net assets other than goodwill	$67,000,000	(Note 1)
Goodwill	3,000,000	
Net assets	$70,000,000	
Issued equity (25,000,000 ordinary shares) (Note 4)	$45,000,000	(Note 2)
Retained earnings	25,000,000	(Note 3)
Equity	$70,000,000	

Note 1: Net assets other than goodwill

Net fair value of L	$12,000,000
Book value of P	55,000,000
	$67,000,000

The assets and liabilities of the legal subsidiary or the accounting acquirer P are at their pre-combination carrying amounts (IFRS 3 App B:B22a). The assets and liabilities of the legal parent or the accounting acquiree L are recognized and measured generally at fair values under the acquisition method (IFRS 3 App B:B22b).

Note 2: Issued equity

Original issued equity of P	$30,000,000
Fair value of shares issued	15,000,000
	$45,000,000

Equity interests in the consolidated financial statements is the sum of the issued equity interests of the legal subsidiary outstanding immediately before the acquisition and the fair value of the legal parent determined in accordance with IFRS 3 under the acquisition method (IFRS 3 App B:B22d).

Note 3: Retained earnings

Pre-combination retained earnings of P	$25,000,000

Pre-combination retained earnings and other equity balances are those of the legal subsidiary (IFRS 3 App B:B22c). Pre-combination retained earnings and other equity balances of the legal parent are eliminated on consolidation.

Note 4: Number of ordinary shares

Number of ordinary shares of L before acquisition	5,000,000
Number of new shares issued by L	20,000,000
	25,000,000

The equity structure (that is, number and type of equity issued) reported is that of the legal parent (IFRS 3 App B:B22d). Although the issued equity (Note 2) reflects the substance of the arrangement, the actual number of shares issued reflects the legal form of the arrangement.

Consolidation Journal Entry at Date of Acquisition (Assuming Full Share Exchange)

The elimination journal entry (abbreviated form) is as follows:

Dr Share capital	8,000,000		
Dr Retained earnings	2,000,000		
Dr Identifiable assets/liabilities (individual accounts)	2,000,000	($12 million – $10 million)	
Dr Goodwill	3,000,000		
Cr Investment			15,000,000

Elimination of investment and pre-combination equity of L and recognition of the excess of fair value over book value of L and goodwill in L

What if the Fair Value of the Acquirer's Equity Interests is Not Reliably Measurable?

If the fair value of the acquirer's equity is not reliably measurable to estimate the consideration transferred from the acquirer's (the legal subsidiary's) perspective, IFRS 3:33 requires the use of the fair value of the acquiree (the legal

parent) to determine the effective consideration transferred.

In the above illustration, let us change the facts to suggest that the fair value of the price per share of P is not reliable and that L's shares are thinly traded. Hence, the fair value of L as an entity has to be determined. Let us assume that the fair value of L as an entity is $16,000,000.

The consideration transferred will then be $16,000,000 and goodwill will be $4,000,000.

Dr Share capital	8,000,000		
Dr Retained earnings	2,000,000		
Dr Identifiable assets/liabilities (individual accounts)	2,000,000	(12,000,000 – 10,000,000)	
Dr Goodwill	4,000,000		
Cr Investment			16,000,000

In this scenario, the fair value of the shares issued by P (measured by the fair value of the acquiree) is $16,000,000. Hence, the issued equity will be the sum of the existing equity of P and the fair value of the shares issued. On the asset side, goodwill will increase to $4,000,000. The revised consolidated statement of financial position will be as follows:

Consolidated statement of financial position (abridged)
as at 1 July 20x5

Net assets other than goodwill	$67,000,000	
Goodwill	4,000,000	
Net assets	$71,000,000	
Issued equity (25,000,000 ordinary shares)	$46,000,000	(Note 1)
Retained earnings	25,000,000	
Equity	$71,000,000	

Note 1: Issued equity

Original issued equity of P	$30,000,000
Fair value of shares issued	16,000,000
	$46,000,000

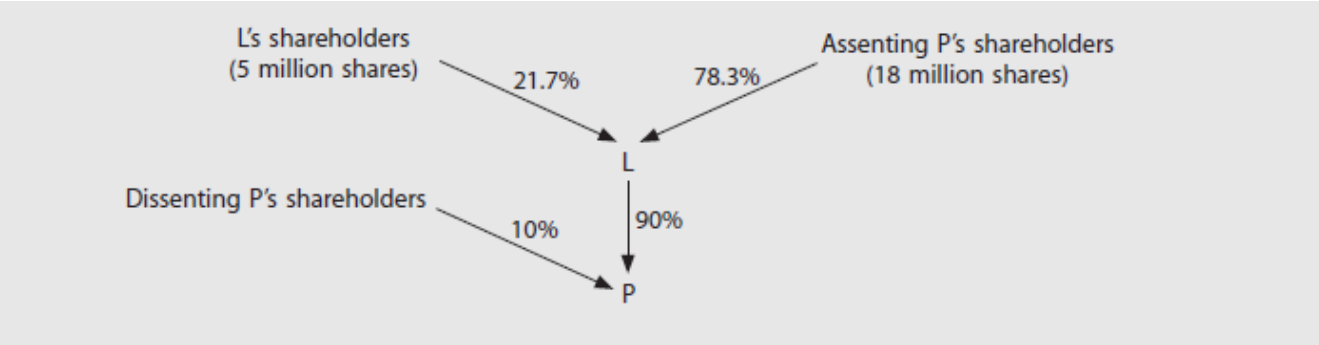
Are There Non-controlling Interests in A Reverse Acquisition?

Non-controlling interests are zero if all of P's shareholders accept the offer to exchange their shares in P for shares in L. If all of P's shareholders do not agree to the share exchange, P will have non-controlling interests that have an interest in P's legal entity's profits but not the consolidated profits (IFRS 3 App B:B23).

In the above example, there are no non-controlling interests as all of P's shareholders accept the exchange. However, if we vary the scenario such that 10% of P's shareholders refuse to accept the share exchange, the ownership structure will be as shown in Figure 3B.2.

The dissenting shareholders, who do not agree to the share exchange, will have a share in P's legal entity profits but not the consolidated profits of the combined entity. Contrary to normal convention where non-controlling interests are the minority owners of a subsidiary, in a reverse acquisition, non-controlling interests are the minority owners of the effective parent.

FIGURE 3B.2 Ownership structure with a less than 100% share exchange

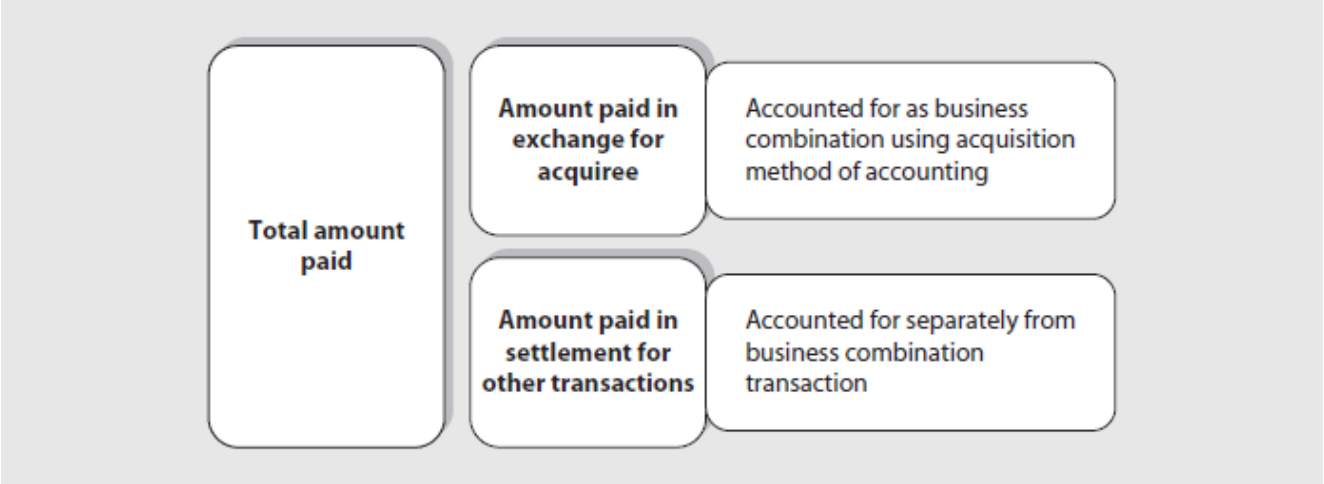


APPENDIX 3C

Determining What Is Part of the Business Combination Transaction

As discussed in the chapter, it is important to distinguish between what is exchanged in the business combination between the acquirer and acquiree (or its former owners) and what is not part of the exchange in the business combination. As set out in paragraph 51 of IFRS 3, the Board recognizes that the acquirer and the acquiree may have an existing relationship or other arrangement that preceded negotiations for the business combination or they may enter into an arrangement during the negotiations that is separate from the business combination itself. These relationships are described as "pre-existing relationships." Hence, the total amount paid by the acquirer may comprise two parts (i) purchase consideration in exchange for the assets and liabilities of the acquiree and (ii) payment for settlement of the separate pre-existing relationship or arrangement. Figure 3C.1 graphically analyzes the total amount paid by the acquirer.

FIGURE 3C.1 Separate transactions or part of a business combination?

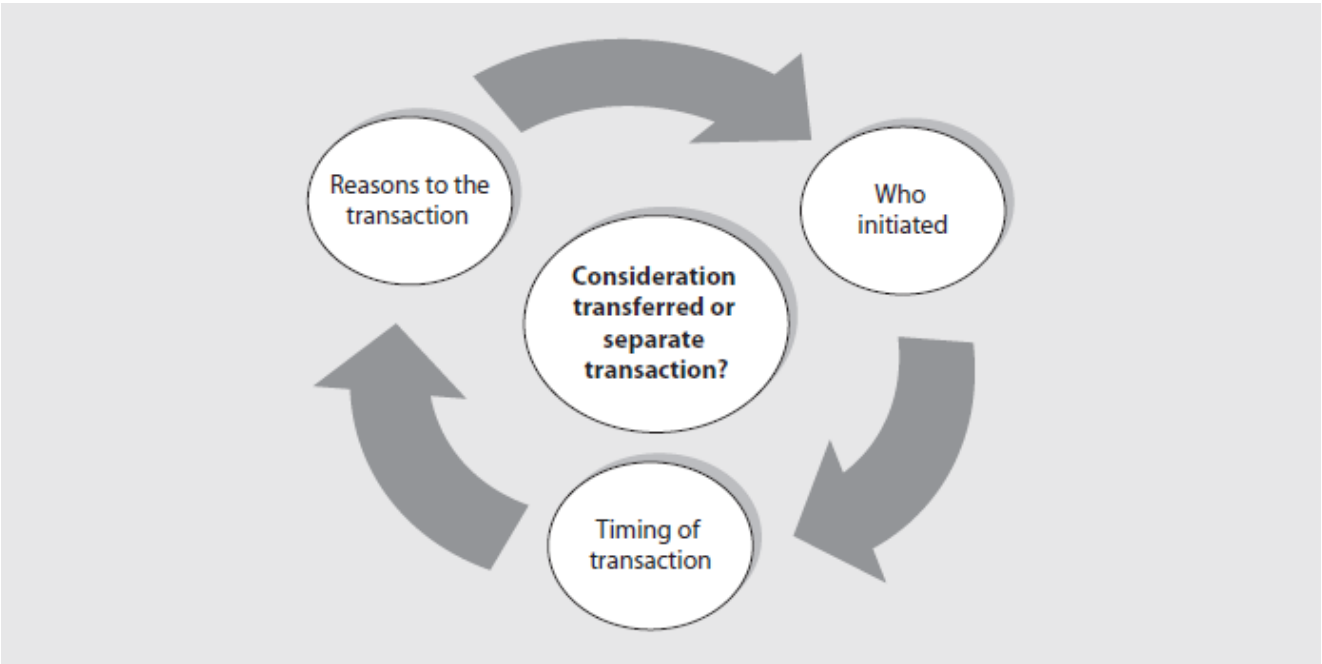


The significance of identifying the amounts that are part of the consideration transferred for the business combination from those that are not is due to the difference in the accounting treatment for each type of transaction. In the case of the former, the acquirer, in applying the acquisition method of accounting, will recognize only the consideration transferred to obtain control as well as the assets acquired and liabilities assumed. Only the consideration transferred will be used to determine the goodwill on acquisition. Other transactions will be accounted for separately from the business combination (IFRS 3:51). The amounts paid for the separate transactions by the acquiree will not form part of the consideration transferred in the business combination. Accordingly, they will not be used in the determination of the goodwill on the business combination.

page 122

To assist in the determination of whether a transaction is part of the exchange for the acquiree or separate from the business combination, paragraph 52 of IFRS 3 explains that a transaction that is "entered into (i) by or on behalf of the acquirer or (ii) primarily for the benefit of the acquirer or the combined entity (rather than primarily for the benefit of the acquiree, or its former owners, before the combination), is likely to be a separate transaction" from the business combination. As shown in Figure 3C.2, paragraph B50 of IFRS 3 further sets out three factors, which the acquirer should consider in making this assessment.

FIGURE 3C.2 Indicators of separability of transactions



Reasons for the Transaction

In analyzing the transaction, it is important to have an understanding of the intent and purpose as to why the parties[36] to the combination entered into the particular transaction. This enables us to determine whether the amount paid for that arrangement is part of the consideration transferred for the business combination or a settlement for a separate transaction.

IFRS 10 Appendix B paragraph B50 provides an example in that "if a transaction is arranged primarily for the benefit of the acquirer or the combined entity rather than primarily for the benefit of the acquiree or its former owners before the combination, the portion of the transaction price paid (and any related assets or liabilities) for that transaction is less likely to be part of the exchange for the acquiree. Accordingly, the acquirer would account for that portion separately from the business combination."

Who Initiated the Transaction

The identity of the party who initiated the transaction may also provide some insights as to whether the transaction is carried out as part of the exchange for the acquiree.

Using the same example above, if the originator of the transaction is the acquirer and the transaction is structured for the purpose of providing future economic benefits to the acquirer or combined entity with little or no benefit accruing to the acquiree or its former owners before the combination, the transaction is likely to be a separate arrangement. Conversely, "a transaction that is initiated by the acquiree or its former owners is less likely to be for the benefit of the acquirer or the combined entity and more likely to be part of the business combination transaction" (IFRS 3:B50(b)).

Timing of the Transaction

The timing of the transaction may also provide some indication as to whether the transaction is part of the exchange for the acquiree or a separate transaction.

For example, a transaction may take place during the negotiations of a business combination that benefits the acquirer or the combined entity. If that is indeed the case, the acquiree or its former owners are likely to receive little or no benefit from the transaction apart from benefits they receive from the combined entity. Accordingly, this transaction would be accounted for separately from the business combination transaction.

Paragraph 52 of IFRS 3 further provides three scenarios of separate transactions that are not likely to be part of the acquisition accounting for the business combination. They are namely:

1. "A transaction that in effect settles pre-existing relationships between the acquirer and acquiree";
2. "A transaction that remunerates employees or former owners of the acquiree for future services"; and
3. "A transaction that reimburses the acquiree or its former owners for paying the acquirer's acquisition-related costs."

We will discuss each scenario in more detail below.

SETTLEMENT OF PRE-EXISTING RELATIONSHIPS

As explained in paragraph B51 of IFRS 3, an acquirer and acquiree may have a relationship that existed before they entered into the business combination. This is what the standard refers to as a "pre-existing relationship." In connection with the business combination transaction, this pre-existing relationship is effectively settled using part of the amount transferred for the transaction. When this happens, the amount that is paid to settle the pre-existing

relationship does not form part of the consideration paid for the business combination. This amount must be identified and accounted for separately from the business combination transaction.

The following table shows some examples of settlement of pre-existing relationships in practice.

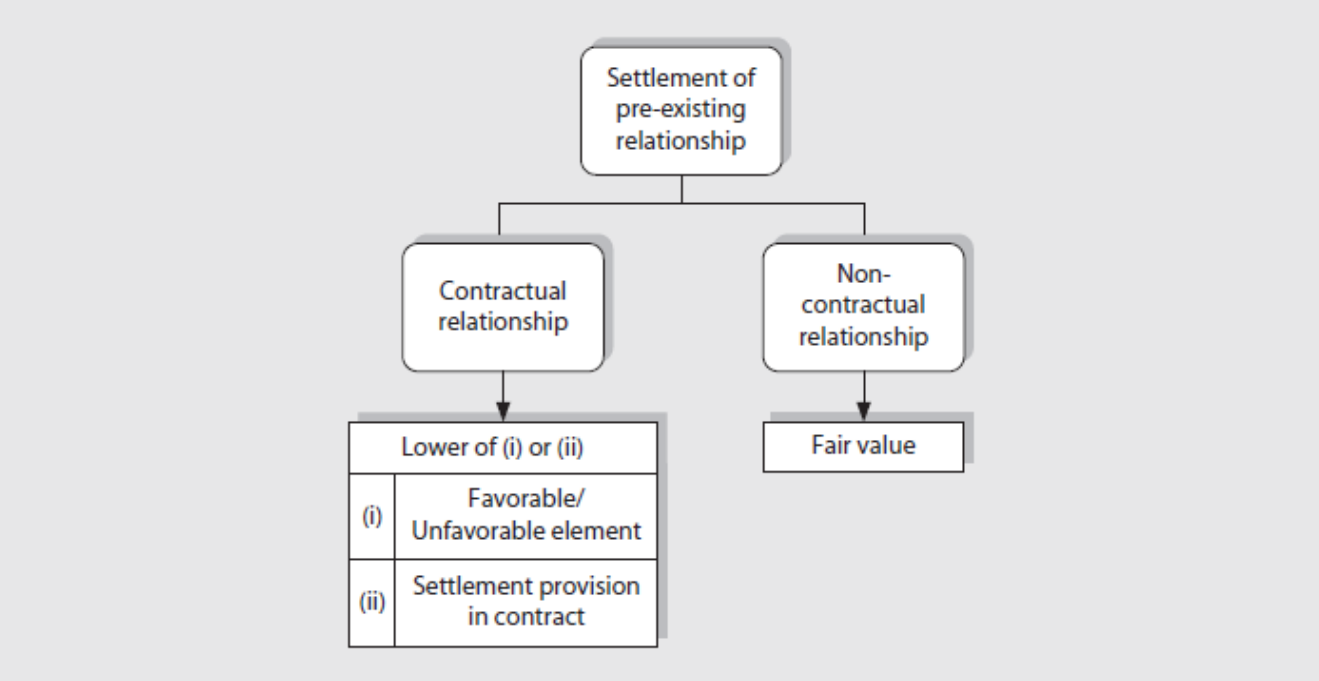
Nature of pre-existing relationships with the acquiree	Effect on acquirer of settlement of pre-existing relationships
Accounts or loans receivable/payable	Settlement of accounts or loans receivable or payable
Franchisee with right to use trademark	Reacquisition of previously granted rights
Holder of treasury shares of acquirer	Purchase of treasury shares
Holder of ordinary shares of acquirer's other subsidiaries	Acquisition of non-controlling interests
Plaintiff in a lawsuit with acquirer	Settlement of lawsuit with acquiree
Issuer of warrants held by acquirer	Termination of warrants

As set out in the table above, a pre-existing relationship between the acquirer and acquiree may be contractual in nature. An example of this would be in the form of a supplier and customer relationship or a franchisor and franchisee relationship. Conversely, the relationship may also be non-contractual in nature. A case in point could be a plaintiff and defendant relationship in a legal suit between the acquirer and acquiree.

Accounting Treatment

Paragraph B52 of IFRS 3 stipulates the accounting treatment for the settlement of pre-existing relationship in a business combination as shown in Figure 3C.3.

FIGURE 3C.3 Settlement of pre-existing relationship



If the business combination in effect settles a pre-existing relationship, paragraph B52 of IFRS 3 requires the acquirer to recognize a gain or loss[37] in profit or loss at the date of acquisition, measured in the following manner:

1. "for a pre-existing non-contractual relationship (such as a lawsuit), the gain or loss is measured at fair value."
2. "for a pre-existing contractual relationship, the gain or loss is measured at the lesser of (i) and (ii):
   (i) the amount by which the contract is favorable or unfavorable[38] from the perspective of the acquirer when compared with terms for current market transactions for the same or similar items.
   (ii) the amount of any stated settlement provisions in the contract available to the counterparty to whom the contract is unfavorable."

If (i) is lower than (ii), the difference is included as part of the business combination accounting.

IFRS 3 further clarifies that the amount of gain or loss recognized may be different from the amount calculated by applying the above requirement if the acquirer had previously recognized a related asset or liability in its financial statements. What this effectively means is that if the acquirer had recognized an asset or liability in respect of the pre-existing relationship previously, this asset or liability will be derecognized at the point of business combination as it is deemed to have been recovered or settled in effect with the business combination transaction. The derecognition of the asset or liability is adjusted against the gain or loss on settlement recognized by the acquirer.

page 125

As the settlement of the pre-existing relationship is accounted for separately from the business combination transaction, this will invariably have an impact on the accounting for the business combination transaction and the subsequent computation of the goodwill on acquisition itself.

When part of the amount transferred by the acquirer in connection with the business combination transaction is used to settle a pre-existing relationship, that amount does not form part of the consideration transferred in exchange for the acquiree in the business combination. Accordingly, it must be deducted from the total amount transferred by the acquirer. Hence, the purchase consideration paid for the business combination will be reduced. If the acquiree had previously recorded an asset or liability in respect of that pre-existing relationship itself, such asset or liability will be derecognized with the settlement of the pre-existing relationship and the fair value of the identifiable net assets transferred by the acquiree at the date of acquisition will correspondingly be decreased or increased, respectively. The interplay between the impact on the amount of purchase consideration transferred and the fair value of the identifiable net assets transferred by the acquiree may have an impact on the computation of goodwill.

The following illustrations, including the adaptation of IE 54 that accompanies IFRS 3, will demonstrate the principles enunciated above.

ILLUSTRATION 3C.1 Settlement of a pre-existing non-contractual relationship

On 30 June 20x6, Company P acquired 100% interest in Company S in exchange for $4.5 million in cash consideration.

Prior to the acquisition, Company P and Company S were involved in a legal tussle in which Company S sued Company P for a breach of terms and conditions in a sale and purchase contract. As at the date of acquisition, the legal case has yet to be settled. Company P has recorded a provision for damages of $0.2 million in its financial statements. Company S did not record any asset in respect of the legal case in its financial statements. The fair value of the identifiable net assets of Company S as at the date of acquisition on 30 June 20x6 is $2.7 million. The book value of the net assets stands at $2.5 million as at the same date. Based on external valuation, the fair value of the lawsuit is $1.3 million on 30 June 20x6. The effects of taxes are ignored in this illustration.

Analysis

In this case, with the acquisition of Company S by Company P, the lawsuit is effectively settled. As this pre-existing relationship is non-contractual in nature, paragraph B52 of IFRS 3 requires Company P to recognize a gain or loss

arising from the settlement at fair value. This settlement will be accounted for separately from the business combination between Company P and Company S.

Hence, in the consolidated financial statements of Company P, there are essentially two components to the transaction. They are (i) the acquisition of Company S and (ii) the settlement of the legal suit between Company S and itself. The cost of settlement for which $1.3 million (being the fair value of the dispute at 30 June 20x6) is paid out of the $4.5 million transferred by Company P is accounted for separately from the business combination transaction. Accordingly, the consideration transferred in exchange for Company S is $3.2 million.

In the separate financial statements of Company P, the cash transferred of $4.5 million will be recognized in the books as investment in Company S.

Calculate the loss on settlement of the lawsuit

	$
Fair value of the dispute at date of acquisition	1,300,000
Less: Provision for damages in Company P's books	(200,000)
Loss on settlement of lawsuit with Company S	1,100,000

Explanatory note:

As explained above, the amount of loss recognized by Company P on the settlement of lawsuit is different from the fair value of the lawsuit (in applying paragraph B52 of IFRS 3) as Company P had previously recognized a provision for damages in its financial statements. The provision is derecognized and adjusted against the fair value of the dispute for the purpose of calculating the loss on settlement as lawsuit is deemed to have been settled with the occurrence of the business combination transaction.

Calculate the goodwill on acquisition

Consideration transferred for business combination = $4,500,000 – $1,300,000
= $3,200,000

	$
Consideration transferred	3,200,000
Less: Fair value of identifiable net assets of Company S	(2,700,000)
Goodwill on consolidation	500,000

Prepare the accounting entries

In the consolidated financial statements of Company P

30 Jun 20x6	Dr Share capital and equity of Company S	2,500,000
	Dr Net identifiable assets	200,000
	(Excess of fair value over net book value)	
	Dr Goodwill	500,000
	Dr Provision for lawsuit	200,000

	Dr Loss on settlement of lawsuit	1,100,000	
	Cr Investment in Company S		4,500,000
	(Being settlement of lawsuit and elimination of share capital and pre-acquisition reserves of Company S)		

In the separate financial statements of Company P

30 Jun 20x6	Dr Investment in Company S	4,500,000	
	Cr Cash		4,500,000
	(Being investment in Company S)		

We change the fact pattern such that Company P is now the plaintiff and Company S is the defendant. The provision of $0.2 million is recorded in the financial statements of Company S and the fair value of the lawsuit of $1.3 million is included as part of the fair value of the identifiable net assets of $2.7 million as at the date of acquisition on 30 June 20x6. The effects of taxes are ignored in this example.

Analysis

Similar to the analysis above, from the perspective of Company P in the consolidated financial statements, there are two components to the transaction, that is, the acquisition of Company S and the settlement of the legal suit between Company S and itself. However, in this case, the settlement of $1.3 million is paid by Company S to Company P as part of the business combination transaction.

As the settlement is separately accounted for from the business combination transaction, the fair value of the lawsuit liability is extinguished from the fair value of the identifiable net assets transferred by Company S in connection with the business combination transaction. Therefore, the fair value of the net assets transferred will increase by $1.3 million to $4 million. Company P will recognize a gain on settlement of lawsuit of $1.3 million in the consolidated financial statements in accordance with B52(a) of IFRS 3. In substance, the total amount transferred as consideration for the business combination transaction is effectively $5.8 million ($4.5 million + $1.3 million) for the purpose of calculation of the goodwill.

In the separate financial statements of Company P, the cash transferred of $4.5 million will continue to be recognized in the books as investment in Company S.

Calculate the goodwill on acquisition

	$	
Consideration transferred	5,800,000	[4.5 million + 1.3 million]
Less: Fair value of identifiable net assets of Company S	(4,000,000)	[2.7 million + 1.3 million]
Goodwill on consolidation	1,800,000	

Prepare the accounting entries

In the consolidated financial statements of Company P

30 Jun 20x6	Dr Share capital and equity of Company S	2,500,000		
	Dr Net identifiable assets	1,500,000		[4 million – 2.5 million]

	(Excess of fair value over net book value)		
	Dr Goodwill	1,800,000	
	Cr Gain on settlement of lawsuit		1,300,000
	Cr Investment in Company S		4,500,000

(*Being settlement of lawsuit and elimination of share capital and pre-acquisition reserves of Company S*)

In the separate financial statements of Company P

30 Jun 20x6	Dr Investment in Company S	4,500,000	
	Cr Cash		4,500,000
	(*Being investment in Company S*)		

For the purpose of illustrating the principles in B52 of IFRS 3 to the settlement of a pre-existing contractual relationship, Illustration 3C.2 adapted from IE54 to IFRS 3 is presented below.

ILLUSTRATION 3C.2 Settlement of a pre-existing contractual relationship

Company P has a ten-year supply contract with Company S in which Company S supplies Company P with 4G semiconductor parts at fixed rates. Based on the current market prices, the fixed rates in the supply contract are higher than the rates at which Company P could pay for similar semiconductor parts from another supplier. The contract is unfavorable from Company P's perspective. Embedded within the terms in the supply contract is a termination clause that allows Company P to terminate the contract before the end of the ten-year term by paying a $6 million penalty. As at the date of acquisition, there are four years remaining under the supply contract and Company P pays $50 million to acquire 100% interest in Company S.

The fair value of the identifiable net assets of Company P at the date of acquisition is $48 million. Included in the total fair value of the net identifiable assets of Company S is an intangible asset of $8 million related to the fair value of the supply contract with Company P. There are two components to the intangible asset of $8 million. $3 million out of $8 million represents a component that is "at market." This component relates to Company S's pricing of the semiconductor parts that is comparable to the pricing for current market transactions for the same or similar items. The remaining $5 million relates to the component for pricing that is unfavorable to Company P (that is, favorable to Company S) given that the price charged to Company P is higher than the price of current market transactions for similar items. Company S has no other identifiable assets or liabilities related to the supply contract, and Company P has not recognized any assets or liabilities related to the supply contract before the business combination.

Analysis

In the consolidated financial statements of Company P, there are essentially two aspects to this transaction. They are, namely, the acquisition of Company S and the settlement of the unfavorable supply contract between Company S and itself. The settlement of this pre-existing contractual relationship (that is, the supply contract) is accounted for separately from the business combination transaction.

In essence, part of the amount transferred for the transaction by Company P is utilised in the settlement of this supply contract. In accordance with paragraph B52(b) of IFRS 3, Company P will calculate a loss on the settlement of

the supply contract of $5 million. This is derived as the lower of the $6 million stated settlement amount in the supply contract and the amount by which the contract is unfavorable to Company P separately from the business combination. The $5 million would be the amount that is deducted from the $50 million transferred for purposes of accounting for the settlement of the supply contract by Company P. Accordingly, the purchase consideration transferred for the acquisition of Company S is $45 million.

The component of $5 million will also be excluded from the fair value of the identifiable net assets of Company S transferred as part of the business combination. Conversely, the $3 million "at-market" component of the contract is part of goodwill, that is, it will be included as part of the fair value of the identifiable net assets for the computation of goodwill. Hence, the fair value of the identifiable net assets transferred would be $43 million.

In the separate financial statements of Company P, the cash transferred of $50 million will be recognized in the books as investment in Company S.

Calculate the goodwill on acquisition

	$	
Consideration transferred	45,000,000	[50 million - 5 million]
Less: Fair value of identifiable net assets of Company S	(43,000,000)	[48 million - 5 million]
Goodwill on consolidation	2,000,000	

Prepare the accounting entries

In the consolidated financial statements of Company P

Dr Share capital and equity of Company S Dr Net identifiable assets (Excess of fair value over net book value)	43,000,000	
Dr Goodwill	2,000,000	
Dr Loss on settlement of supply contract	5,000,000	
Cr Investment in Company S		50,000,000

(Being settlement of supply contract and elimination of share capital and pre-acquisition reserves of Company S)

In the separate financial statements of Company P

Dr Investment in Company S	50,000,000	
Cr Cash		50,000,000

(Being investment in Company S)

It should be noted that the amount recognized as a gain or loss for the effective settlement of the relationship will be affected by whether Company P had recognized an amount in its financial statements previously.

If a scenario were to be assumed such that Company P, in applying IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, had to recognize a provision of $6 million for the onerous supply contract prior to the business combination. In this case, Company P would recognize a gain on the settlement of the supply contract of $1 million in the profit or loss at the acquisition date instead of $5 million as discussed above. This is derived as the difference between the loss on the contract of $5 million (as discussed above) and the $6 million loss previously provided for. In

essence, Company P has in effect settled a recognized liability of $6 million for $5 million, resulting in a gain of $1 million.

REMUNERATING EMPLOYEES FOR FUTURE SERVICES

The second example of separate transaction, which is not to be included as part of the acquisition accounting for a business combination under paragraph 52 of IFRS 3, pertains to transactions that remunerate employees or former owners of the acquiree for future services.

It is not uncommon in business combination transactions for the acquirer to enter into arrangements with employees or the former owners of the acquiree to either preserve existing employee compensation arrangements or even enhance employee compensation benefits with the intention of retaining these employees in the post-combination group. These employees or selling shareholders may be key employees that were and will continue to be instrumental to the success of the acquiree and it is in the best interest of the acquirer and the combined group that they continue to stay with the acquiree after the business combination.

Such employee compensation arrangements may take on different forms. They may take the form of direct cash remuneration for post-combination employment services or payment that is contingent on the employees meeting a post-combination performance target.[39] In some cases, the acquirer may also exchange share-based awards held by the employees or former owners of the acquiree with its own awards.

Furthermore, it is fairly common for employment contracts of key employees and senior management to include what is known as “golden parachute” arrangements. Essentially, such arrangements provide that these personnel would receive an additional bonus when their services are terminated as a result of a business combination transaction. Such arrangements may be embedded within the employment contract at the onset of employment without anticipation of any business combination transaction.

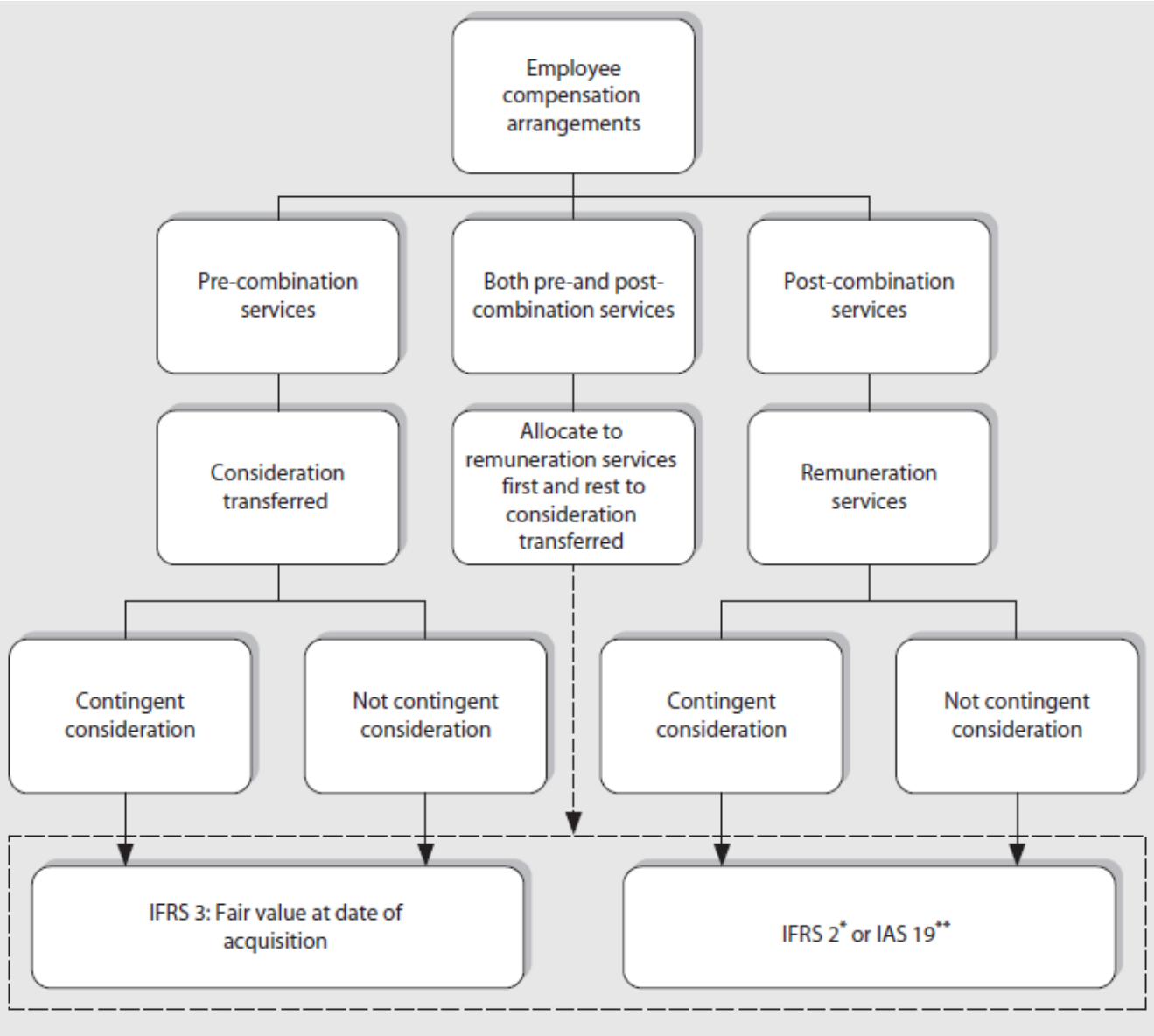
It is important to analyze carefully the nature of these employee compensation arrangements in order to apply the proper accounting treatment. In essence, such payment could be made for (i) pre-combination employment services, (ii) post-combination employment services, or (iii) a combination of both pre- and post-combination services. Figure 3C.4 depicts this and the appropriate accounting treatment for each classification.

It is important to differentiate the amounts that are paid for post-combination remuneration services from those that were paid in exchange for the acquiree as the accounting treatment differs for each type of payment. For payments that are made for post-combination remuneration services, these amounts are accounted for separately from the business combination transaction as they are, in substance, amounts paid for the employees’ future services, and not in exchange for the identifiable net assets of the acquiree at the date of acquisition. Conversely, amounts that are attributed to pre-combination services are accounted for as part of the consideration transferred in the business combination transaction, that is, they are included in the determination of the goodwill on acquisition. For employee compensation arrangements that are paid for both pre- and post-combination services, the amounts paid will be allocated to payment for post- combination services and consideration transferred in exchange for the acquiree. A possible scenario in this case would be where an acquirer replaces the share-based payment awards held by employees of the acquiree at the date of acquisition and such awards held by the employees prior to the transaction do not expire on business combination. The accounting treatment for share-based payment transactions in business combination will be discussed in more details below.

As depicted in Figure 3C.4, employee compensation arrangements can be structured as contingent payment transactions. Paragraph B54 of IFRS 3 clarifies that the nature of such arrangement in the transaction has to be brought to bear in determining whether such contingent payments to employees or former owners are contingent consideration in the business combination or are separate transactions. Specifically, understanding the reasons for

including contingent payments in the acquisition agreement, the identity of the initiator of the agreement, and timing of the arrangement will be helpful in assessing the nature of the arrangement.

FIGURE 3C.4 Employee compensation arrangements in a business combination



* If settled in shares or amounts linked to acquirer's shares
** If settled in forms e.g. cash or assets (other than shares or amounts linked to acquirer's shares)

Indicators in Assessing Whether Payment is Remuneration or Consideration

In situations where it is not clear whether an arrangement for payments to employees or selling shareholders (regardless of whether it is a contingent payment) is part of the exchange for the acquiree or is a transaction that is separate from the business combination, paragraph B55 of IFRS 3 requires the acquirer to consider the following

indicators as set out in Figure 3C.5. While the application guidance refers to contingent consideration, it also applies to other forms of employment compensation arrangements such as cash remuneration.

FIGURE 3C.5 Indicators in determining whether payment is remuneration or consideration

Indicator	Payment type	Attributes (IFRS 3:B55)
Continuing employment (by employees or selling shareholders)	**Remuneration**	► Contingent consideration arrangement in which the payments are automatically forfeited if employment terminates
	Consideration	► Contingent consideration arrangement is not affected by employee termination, that is, will continue to be paid even if employee leaves
Duration of continuing employment	**Remuneration**	► Period of required employment coincides with or is longer than the contingent payment period
	Consideration	► Period of required employment is shorter than the contingent payment period
Level of remuneration relative to other key employees	**Remuneration**	► Employee remuneration other than the contingent payments is not at a reasonable level relative to other key employees in the combined entity (that is it could be much lower)
	Consideration	► Employee remuneration other than the contingent payments is at a reasonable level relative to other key employees in the combined entity
Incremental payment to selling shareholders who become employees	**Remuneration**	► If selling shareholders, who do not become employees, receive lower contingent payments on a per-share basis than the selling shareholders who become employees of the combined entity
	Consideration	► If selling shareholders who do not become employees receive comparable contingent payments on a per-share basis with the selling shareholders who become employees of the combined entity
Number of shares owned by selling shareholders who become employees*	**Remuneration**	► Selling shareholders who owned substantially all of the shares in the acquiree continue as key employees; contingent payment arrangement in substance is a profit sharing scheme for additional remuneration
	Consideration	► Selling shareholders who continue as key employees owned only a small number of shares of the acquiree and all selling shareholders receive the same amount of contingent consideration on a per-share basis
Linkage of contingent consideration to valuation of acquiree	**Remuneration**	► Contingent payment formula is not linked to valuation of the acquiree but is consistent with prior profit-sharing arrangements
	Consideration	► Initial consideration transferred at the acquisition date is based on the low end of a range established in the valuation of the acquiree and the contingent formula is linked to valuation approach
Formula for determining consideration	**Remuneration**	► Formula for contingent payment is determined based on specified percentage of earnings that is intended to be a profit-sharing arrangement to remunerate employees for services rendered
	Consideration	► Formula for contingent payment is determined on the basis of a multiple of earnings that is intended to establish or verify the fair value of the acquiree

* Pre-acquisition ownership interests held by parties related to selling shareholders who continue as key employees (such as family members) should also be considered (B55(e) of IFRS 3).

In addition to the indicators shown in Figure 3C.5, paragraph B55 of IFRS 3 states that any other agreements entered into with the selling shareholders should be assessed as well. The terms and conditions to these agreements entered into with the selling shareholders (for example, agreements not to compete) and the income tax treatment of contingent payments may indicate that contingent payments are attributable to something other than consideration for the acquiree. The application guidance provided an example, which the acquirer in connection with the acquisition, entered into a property lease arrangement with a significant selling shareholder. If the lease payments specified in the lease contract are significantly below market, some or all of the contingent payments to the lessor, (which is the selling shareholder) as required by a separate arrangement for contingent payments might be, in substance, payments for the use of the leased property that the acquirer should recognize separately in its post-combination financial statements. In contrast, if the lease contract specifies lease payments that are consistent with market terms for the leased property, the arrangement for contingent payments to the selling shareholder may be contingent consideration in the business combination.

page 132

page 133

We believe all the indicators listed in paragraph B55 of IFRS 3 should be considered in assessing whether compensation arrangements made to employees or selling shareholders are remuneration or as part of consideration transferred for the acquiree. Although continuing employment by employees or selling shareholders who become employees is listed as an indicator, the syntax of the application guidance is structured such that if this condition is met, it is conclusive rather than indicative. A contingent consideration arrangement in which the contingent payments are automatically forfeited if employment terminates is remuneration for post-combination services. Therefore, if the remaining portion of the contingent consideration arrangement is not predicated on continuing employment (that is, the payments will be paid if the conditions to the contingent consideration is met, regardless of whether the employee continues to be employed by the acquiree), the rest of the indicators are considered in determining whether the remaining portion are payment for remunerations services or as part of consideration transferred.

The application of the principles above is demonstrated in IE 58 that accompanies IFRS 3. For the purposes of illustration, we have adapted the fact pattern below.

ILLUSTRATION 3C.3 Employee compensation arrangements: Remuneration versus consideration transferred

On 1 January 20x1, Company S appointed a new chief executive officer under a ten-year contract. The employment contract included a golden parachute arrangement in which Company S will pay the chief executive officer $5 million if Company S is acquired before the contract expires. There is no term or condition within the contract that requires the chief executive officer to satisfy any post-combination service period in order to be entitled to the amount.

Company P acquires Company S eight years later on 31 December 20x8 for $200 million. The chief executive officer was still serving at the acquisition date and hence will receive the additional payment. The fair value of the identifiable net assets and book value of Company S (both of which include the amount payable to the chief executive officer at the date of acquisition) amounted to approximately $165 million and $145 million respectively. The effects of taxes are ignored in this illustration.

Analysis

Company P will have to first establish whether the $5 million payable to the chief executive officer, which crystallizes at the date of acquisition constitutes remuneration for post-combination services or part of the consideration transferred in exchange for Company S at the date of acquisition.

page 134

Applying the thought process framework, as set out in paragraph B54 of IFRS 3 and articulated above,

(1) *Reasons for the transaction*

Company S entered into the employment agreement with the chief executive officer on 1 January 20x1 when the chief executive officer was first employed, that is, prior to the commencement of negotiations for the business combination. The purpose of the golden parachute arrangement was to secure the services of the chief executive officer. Furthermore, the chief executive officer is not required to provide any services in the post-combination period to be entitled to the $5 million. Therefore, the agreement was not arranged primarily to provide benefits to Company P or the combined entity.

(2) *Identity of the initiator of the arrangement*

Company S was the party who initiated the golden parachute arrangement with the chief executive officer and the intention is for the benefits to accrue to Company S, without contemplation of any change in control. Company P was not a party involved in the negotiation of the arrangement

(3) *Timing when the arrangement was entered*

The employment contract that included the golden parachute arrangement was entered into when the chief executive officer was employed, that is, it was not entered into during the negotiations for the acquisition by Company P.

Based on the fact pattern above, the golden parachute arrangement to the chief executive officer is not remuneration for post-combination services. It is, in substance, payment for pre-combination services provided to Company S. Accordingly, the liability of $5 million will be included as part of Company S's identifiable net assets transferred at the date of acquisition in the application of the acquisition method under IFRS 3.

Calculation of goodwill

	$	
Consideration transferred	200,000,000	
Less: Fair value of identifiable net assets of TC	(165,000,000)	[Inclusive of $5 million payable]
Goodwill on consolidation	35,000,000	

Prepare accounting entries

In the consolidated financial statements of Company P

Dr Share capital and equity of Company S	145,000,000		
Dr Net identifiable assets	20,000,000	[165 million – 145 million]	
(Excess of fair value over book value)			
Dr Goodwill	35,000,000		
Cr Investment in Company S		200,000,000	
Being elimination of share capital and pre-acquisition reserves of Company S			

In the separate financial statements of Company P

Dr Investment in Company S	200,000,000	
Cr Cash		200,000,000
Being investment in Company S		

Conversely, if the circumstances were to be varied such that Company S enters into a similar agreement with the chief executive officer under the advice of Company P during the negotiations for the business combination, the objective of the arrangement might be to provide termination pay to the chief executive officer. Hence, Company P or the combined entity is the primary beneficiary of the agreement. In this case, Company P will account for the liability of $5 million to pay the chief executive officer in its financial statements separately from the business combination. Accordingly, $5 million will be deducted from the consideration transferred and the same amount will be added to the fair value of the identifiable net assets of Company S transferred (as the liability is excluded), and accounted for separately from the business combination, as set out below.

Calculation of goodwill

	$	
Consideration transferred	195,000,000	[200,000,000 – 5,000,000]
Less: Fair value of identifiable net assets of Company S	(170,000,000)	[165,000,000 + 5,000,000]
Goodwill on consolidation	25,000,000	

Prepare accounting entries

In the consolidated financial statements of Company P

Dr Remuneration due to CEO	5,000,000		
Cr Investment in Company S		5,000,000	
Being separate accounting for payment of remuneration of CEO			
Dr Share capital and equity of Company S	145,000,000		
Dr Net identifiable assets	25,000,000		[170 million – 145 million]
Dr Goodwill	25,000,000		
Cr Investment in Company S		195,000,000	
Being elimination of share capital and pre-acquisition reserves of Company S			

In the separate financial statements of Company P

Dr Investment in Company S	200,000,000	
Cr Cash		200,000,000
Being investment in Company S		

ILLUSTRATION 3C.4 Contingent payment to key employees

On 1 January 20x2, Company P, a listed company, acquired 100% interest in Company S, which specializes in hearth manufacturing, from its founder owner.

The purchase consideration for the acquisition is cash consideration amounting to $40 million. Included in the purchase and sale agreement for Company S, Company P has also committed to pay additional consideration amounting to 50% of the net profit after tax of Company S at the end of the fifth year, after the date of acquisition on the condition that the average annual net profit after tax of Company S for the 5 years is at least $2.8 million. In exchange for this, the founder owner has to enter into a service employment agreement with Company P for a period of five years, and if the founder owner terminates employment within these five years, 80% of the additional consideration will be forfeited.

page 136

The fair value of the identifiable net assets of Company S at the date of acquisition of 1 January 20x2 amounts to approximately to $36 million. Book value of Company S as at the same date stands at approximately $33.5 million. Based on external valuation, the fair value of the additional consideration as at 1 January 20x2 is approximately $5 million. The effects of taxes are ignored in this illustration.

Analysis

The additional consideration payable meets the definition of contingent consideration[40] under IFRS 3. Company P has an obligation to transfer cash to the founder owner of Company S as part of the exchange for control of Company S if specified future events occur or conditions are met, that is, if the average net profit after tax of Company S for the five years after the date of acquisition is at least $2.8 million. Following this, Company P will have to establish whether this contingent consideration constitutes remuneration for post-combination services or part of the consideration transferred in exchange for Company S at the date of acquisition.

Applying the thought process framework as set out in paragraph B54 of IFRS 3,

(1) *Reasons for the transaction*

The objective of the transaction was primarily to procure the employment services of the founder owner subsequent to the acquisition. This is demonstrated by the fact that the founder owner is required to continue employment with Company S for a period of five years and 80% of the contingent consideration payment will automatically be forfeited if employment terminates. Furthermore, the formula for contingent payment calculation is determined based on specified percentage (that is, 50%) of net profit after tax on the fifth year after acquisition and this appears to be intended as a profit-sharing arrangement to remunerate the founder owner for the services rendered.

(2) *Identity of the initiator of the arrangement*

Company P was the party who initiated the contingent consideration arrangement with the founder as part of the purchase and sale agreement of Company S, primarily for the benefit of Company P and the combined entity.

(3) *Timing when the arrangement was entered*

The contingent consideration arrangement was finalized during the negotiations for the acquisition by Company P and was included in the purchase and sale agreement.

On the basis of the fact pattern above, 80% of the contingent consideration arrangement is remuneration for post-combination services as that amount is automatically forfeited if employment terminates. The fair value of the contingent consideration is $5 million and 80% of the fair value that amounts to $4 million will be accounted for as remuneration, separate from the business combination transaction. As this portion does not constitute contingent consideration for the business combination transaction, Company P is not required to measure this portion of the additional consideration at fair value at the date of acquisition. Instead, Company P will account for the remuneration expense in accordance with IAS 19.

page 137

Insofar as the remaining 20% is concerned, the founder owner, in this case, will get 20% of the contingent consideration as long as the criterion is met. This is regardless of whether he or she continues employment. In other words, the 20% is not tied to employment services. Hence, this remaining 20% of the fair value of the contingent consideration amounting to $1 million will be included as part of the consideration transferred for the purpose of applying acquisition accounting under IFRS 3.

Calculation of goodwill

	$	
Consideration transferred*	41,000,000	[40,000,000 + 1,000,000]
Less: Fair value of identifiable net assets of Company S	(36,000,000)	
Goodwill on consolidation	5,000,000	

** inclusive of contingent consideration*

Prepare accounting entries

In the consolidated financial statements of Company P

Dr Share capital and equity of Company S	33,500,000		
Dr Net identifiable assets	2,500,000		[36 million – 33.5 million]
Dr Goodwill	5,000,000		
Cr Investment in Company S		41,000,000	

Being elimination of share capital and pre-acquisition reserves of TC

In the separate financial statements of AC

Dr Investment in TC	41,000,000	
Cr Cash		40,000,000
Cr Payable to founder – contingent consideration		1,000,000

Being investment in Company S

Explanatory note:
No accounting entry is required for the 80% of the contingent consideration as at the date of acquisition. Company P will record the remuneration expenses when the services are received in accordance with IAS 19 *Employee Benefits*.

Share-based payment transactions

In a business combination, it is common for the acquirer to exchange its share-based payment awards (replacement awards) for awards held by the employees of the acquiree. There are a number of reasons for this. On the financial reporting front, such employee share options held by the employees will constitute non-controlling interests in the acquiree if the awards held by these employees are not replaced by the acquirer, which the acquirer will have to account as such in the consolidated financial statements. On the performance measurement and motivational front, replacing awards held by the employees with that of the acquirer's may serve to align the employees' interests toward

contributing to the overall performance of the parent and the post-combination business. It is generally the case that the shares of the acquirer are more valuable and/or more liquid than that of the acquiree.

In situations where the acquirer replaces the acquiree's share-based payment transactions with those of the acquirer, paragraph 30 of IFRS 3 stipulates that the acquirer should measure the liability or equity instrument relating to the replacement awards in accordance with IFRS 2 *Share-Based Payment*[41] at the acquisition date. Specifically, B56 of IFRS 3 requires such exchanges to be accounted for as modifications of share-based payment awards under IFRS 2.

This requirement is manifested in the detailed attribution process discussed in IFRS 3. In the situation where the awards held by the employee do not expire on business combination, IFRS 3 requires an attribution of either all or a portion of the fair value of the acquirer's replacement grant at the acquisition date as consideration transferred for the business combination. The implication is that this amount attributed as consideration transferred will be included in the computation of the goodwill on acquisition. The remainder will be recognized as remuneration cost, that is, as an expense in the post-combination financial statements for the services to be received over the period to when the replacement award vests in accordance with IFRS 2. The reason for this allocation process is because with the acquisition, the acquirer continues to have an obligation to the employees in respect of the past services that they provided to the acquiree. This is demonstrated by the fact that the awards issued by the acquiree do not expire on business combination. Hence, when an unexpired award is replaced by the acquirer, a portion of the "value of the replacement award reflects the acquiree's obligation that remains outstanding at the date of the business combination, and is accounted for as part of the consideration transferred in the business combination." (IFRS 3:B56) The accounting for the replacement of unexpired awards is the same regardless of whether they are replaced voluntarily by the acquirer, or whether the acquirer has an obligation (by contract or otherwise) to replace because the commercial substance in both scenarios is the same. The mechanics of the apportionment process is discussed in further details below.

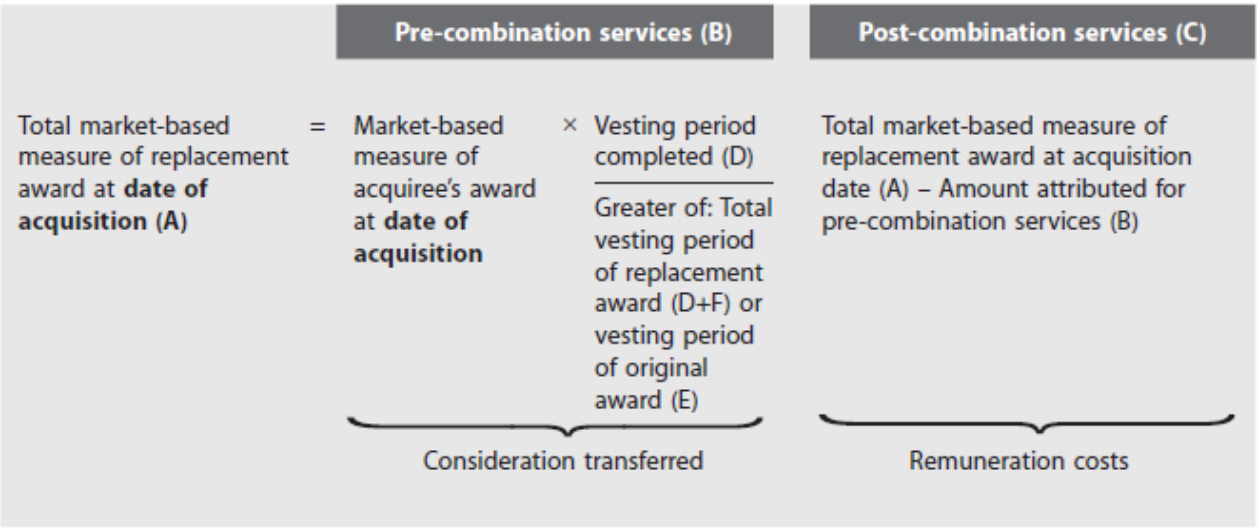
The exception to the above general principle is when the existing awards held by the employees would expire as a result of the business combination and the acquirer, in this case chooses to replace these awards even though it is not obliged to. In this circumstance, the entire value of the replacement award is recognized as remuneration cost in the post-combination financial statements, that is, none of the value will be attributed as part of consideration transferred. The rationale for this is that the new replacement award granted can only be for future services as the acquirer has no obligation to the employees in respect of past services as evidenced by the expiry of the awards.

It may also well be a case where the acquirer chooses not to replace the awards held by the employees in the business combination transaction. In this situation, the employee share awards, to the extent that they are classified as equity, constitute non-controlling interest at the date of acquisition. As these options do not represent present ownership interests, which entitle their holders to a proportionate share of net assets upon liquidation, IFRS 3 requires them to be measured at fair value at the date of acquisition. Paragraphs B62A and B62B of IFRS 3 provide more guidance on the accounting treatment, and this is discussed in greater detail under accounting for non-controlling interests in Chapter 4.

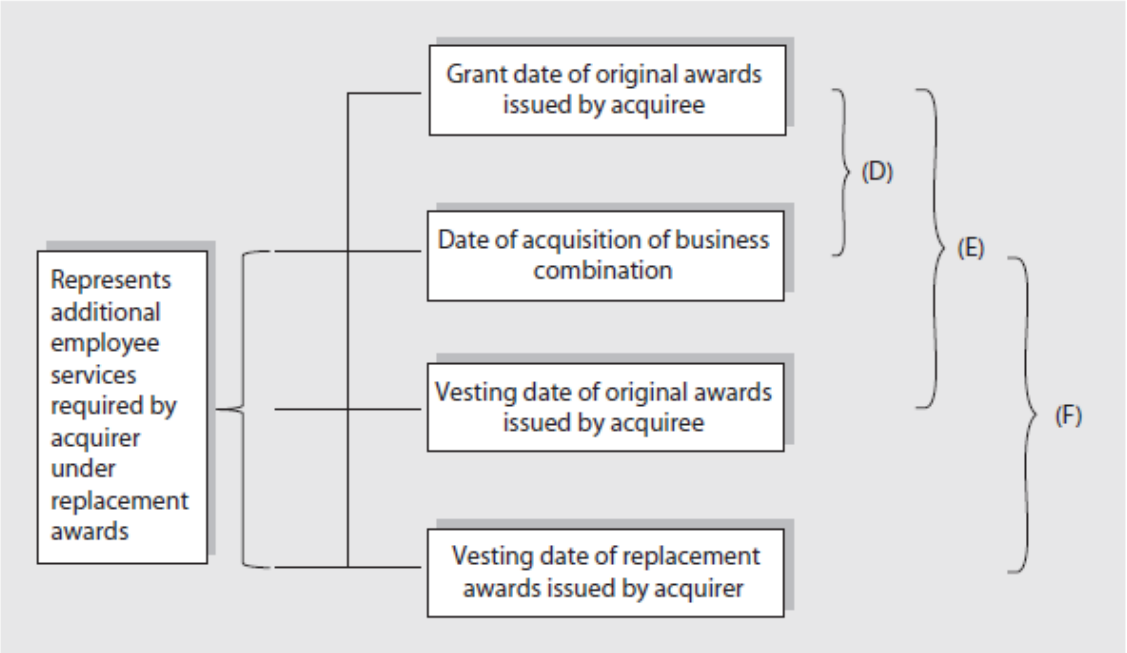
Principles of Attribution for Replacement Awards

Paragraphs B56 to B62 of IFRS 3 provide detailed guidance on how to determine the portion of the replacement award that is part of the consideration transferred for the acquiree and the portion that is remuneration cost for post-combination service. This is illustrated Figure 3C.6:

FIGURE 3C.6 Attribution of share-based payment awards



Determination of the greater of the total vesting period of replacement award or vesting period of original award



In a nutshell, the acquirer should determine the portion of the replacement award that is part of the consideration transferred for the acquiree in the following manner:

1. Determine at the date of acquisition, the fair values of the replacement award and the acquiree's award in accordance with the market-based measurement method set out in IFRS 2 (that is, the market-based measure).
2. Determine the following parameters:

   - Pre-combination vesting period before the date of acquisition, that is, the period where services were provided by the employees up to the date of acquisition – (D) in the diagram above
   - Post-combination vesting period for the new replacement award, that is, the additional period of services to be provided by employees under the replacement awards – (F) in the diagram above
   - Vesting period under the original acquiree's award – (E) in the diagram above

3. Determine the amount to be attributed to the pre-combination service that will be included in the consideration transferred via the following formula: page 140

$$\text{Amount to be attributed to pre-combination service and hence consideration transferred} = \text{Market-based measure of acquiree's award at } \textbf{date of acquisition} \times \frac{\text{Vesting period completed}}{\text{Greater of total vesting period of replacement award or vesting period of original award}}$$

4. Determine the post-combination remuneration cost, which is the excess of the market-based measure of the replacement award over the amount determined in step 3 above. This remuneration cost will be recognized as an expense in accordance with the principles of IFRS 2.

IFRS 3 provides four examples (IE 64 to IE 71) to guide the application of the above requirements. The fact pattern of two of the examples have been adapted below for purposes of demonstrating the application of the above principles.

ILLUSTRATION 3C.5 Replacement share awards in a business combination

On 1 January 20x5, Company P acquires the entire share capital of $400,000 comprising of 400,000 ordinary shares in Company S. Retained earnings at that date amounted to $100,000. In previous years, Company S has issued employee share awards for which the balance in the employee share option reserve stands at $75,000 as at 1 January 20x5. The purchase consideration is $800,000 in cash. Net assets of Company S as at 1 January 20x5 amounted to $575,000. The fair value of the net identifiable assets as at 1 January 20x5 is $750,000. Tax effects are ignored in this illustration.

As part of the business combination, Company P provides replacement awards that require one year of post-combination service in exchange for the share-based payment awards of Company S held by employees who had completed the vesting period before the business combination. The market-based measure of the replacement and Company S's awards at the acquisition date amounted to $110,000 and $100,000, respectively. When originally granted, Company S's awards had a vesting period of four years. As of the acquisition date, Company S's employees holding unexercised awards had rendered a total of seven years of service since the grant date.

Analysis

Notwithstanding that Company S's employees have already rendered all of the service (that is, the employees have completed the four years of service to be unconditionally entitled to the options issued by Company S), Company P is still required, in accordance with paragraph B59 of IFRS 3, to attribute a portion of the replacement award to post-combination remuneration cost as the replacement awards require one year of service subsequent to the combination.

The total vesting period is five years that is, the original vesting period for the original acquiree award before the acquisition date (four years) plus the vesting period for the replacement awards (one year). Given that the vesting period of the original award is four years, the greater of the total vesting period of five years should be used as the denominator in the above formula.

Hence, applying the formula above, the portion to be attributed to pre-combination services is based on the market-based measure of the Company S's award at the acquisition date ($100,000) multiplied by the ratio of the pre-combination vesting period (four years) to the total vesting period (five years). Accordingly, Company P will attribute $80,000 ($100,000 × 4/5 years) to the pre-combination vesting period. This amount would be included in the consideration transferred in the business combination. The excess of the market-based measure of the replacement award of $110,000 over the amount attributed for the pre-combination vesting period of $80,000, that is, $30,000 is attributed to the post-combination vesting period. It is recognized as remuneration cost in Company P's post-combination financial statements in accordance with IFRS 2. page 141

Calculation of fair value uplift on acquisition (i.e. excess of fair value over book value)

Fair value uplift on acquisition = $750,000 − $575,000
= $175,000

Calculation of goodwill on acquisition

Consideration transferred = $800,000 + $80,000 (being the amount attributed for pre-combination service)
= $880,000

Goodwill	=	Fair value of consideration transferred	+	Amount of non-controlling interests at acquisition date	− Recognized net identifiable assets of acquiree measured in accordance with IFRS 3
		= $880,000	+	0	− $750,000
		= $130,000			

Explanatory note:

1. In the computation of the consideration transferred, only the $80,000 is included. The remaining $30,000 is attributed to post-combination remuneration cost in the consolidated financial statements.
2. There is no non-controlling interest as the original award issued by Company S in the subsidiary has been replaced by the awards issued by Company P.

In the consolidated financial statements of Company P

Dr Share capital	400,000	
Dr Retained earnings	100,000	
Dr Employee share options	75,000	
Dr Net identifiable assets (Excess of fair value over book value)	175,000	
Dr Goodwill	130,000	
Cr Investment in subsidiary		880,000
Being elimination of share capital and investment account		

In the separate financial statements of Company P

Dr Investment in subsidiary	880,000	
Employee share option reserve – equity		80,000
Cash		800,000
Being issuance of replacement awards at date of acquisition and investment in subsidiary		

Explanatory note:

1. No accounting entry is made for the amount of $30,000, which was attributed to post-combination remuneration costs. The amount will be recognized in the consolidated financial statements in accordance with the principles in IFRS 2.
2. In the separate financial statements of Company P, the replacement share issuance is recognized as an equity-settled share-based payment in accordance with paragraph 43C of IFRS 2. While IFRS 2 addresses only the credit entry, we believe that the debit entry should be made to investment in subsidiary as we are of the view that the parent (Company P), while not the receiving party of the goods and services from

the employees, had paid for that service on behalf of the subsidiary. Hence, the amount paid in substance represents additional investment in the subsidiary.

ILLUSTRATION 3C.6 Replacement share awards in business combination

Assume the same facts as in Illustration 3.4 with the exception that in this scenario, Company P provides replacement awards that require one year of post-combination service in exchange for share-based payment awards of Company S. Of the original four year's vesting period, Company S's employees had fulfilled two years of service.

The fair value of the replacement and Company S's awards at the acquisition date amounted to $110,000 and $100,000 respectively.

Analysis

As of the acquisition date, Company S's employees had rendered only two years out of the required four years' services. Therefore, under the original award, they would have been required to render an additional two years of service for these awards to vest. Hence, only a portion of the Company S's awards is attributable to pre-combination service.

As the replacement awards require only one year of post-combination service and given that the employees have already completed two years of service, the total vesting period is therefore, three years.

Hence, the portion attributable to pre-combination services is based on the market-based measure of the acquiree award as at the date of acquisition ($100,000) multiplied by the ratio of the pre-combination vesting period (two years) to the greater of the total vesting period (three years), or the original vesting period of Company S's award (four years). Thus, Company P will attribute $50,000 ($100,000 × 2/4 years) to pre-combination service, and this amount will be included in the consideration transferred for the business combination. The remainder of $60,000 ($110,000 - $50,000) is attributed to post-combination service and will be recognized as remuneration cost in Company P's post-combination financial statements.

Calculation of goodwill on acquisition

Consideration transferred = $800,000 + $50,000 (being the amount attributed for pre-combination service)
= $850,000

Goodwill	=	Fair value of consideration transferred	+	Fair value of consideration transferred	− Recognized net identifiable assets of acquiree measured in accordance with IFRS 3
		= $850,000	+	0	− $750,000
		= $100,000			

Preparation of the accounting entries

In the consolidated financial statements of Company P

Dr Share capital	400,000
Dr Retained earnings	100,000
Dr Employee share options	75,000

Dr Net identifiable assets (Excess of fair value over book value)	175,000	
Dr Goodwill	100,000	
Cr Investment in subsidiary		850,000

Being elimination of share capital and investment account

In the separate financial statements of Company P

Dr Investment in subsidiary	850,000	
Employee share option reserve - equity		50,000
Cash		800,000

Being issuance of replacement awards at date of acquisition and investment in subsidiary

TRANSACTION FOR PAYMENT OF ACQUISITION COSTS

In the third scenario under paragraph 52 of IFRS 3, the standard requires a transaction that reimburses the acquiree or its former owners for paying the acquirer's acquisition-related costs to be accounted for separately from the business combination transaction.

Paragraph 53 of IFRS 3 defines acquisition-related costs as costs that "the acquirer incurs to effect a business combination. Such costs include finder's fees; advisory, legal, accounting, valuation, and other professional or consulting fees; general administrative costs, including the costs of maintaining an internal acquisitions department; and costs of registering and issuing debt and equity securities."

IFRS 3 requires the acquirer to expense acquisition-related costs in the periods in which the costs are incurred and the services are received, with the exception that costs incurred to issue debt or equity securities will be recognized in accordance with IAS 32[42] and IFRS 9.

Transactions that reimburse the acquiree or its former owners for paying the acquirer's acquisition-related costs is accounted for as a separate transaction because acquisition-related costs are neither part of the consideration transferred in exchange for the acquiree nor part of the fair value of the identifiable net assets transferred by the acquiree. They are essentially expenses incurred by the acquirer as part of the business combination transaction in anticipation of future economic benefits. Hence, any arrangement by the acquirer to reimburse the acquiree or its former owners for the payment of acquisition-related expenses on behalf of the acquirer has to be accounted for separately.

Furthermore, as explained in the paragraph 370 of the Basis to Conclusions to IFRS 3, the Board had explicitly included this requirement in the Standard to address concerns that acquirers might modify business combination transactions to avoid recognising acquisition-related costs as expenses, given that they are required to be expensed as part of the cost of the business acquired. For example, a buyer might arrange with the selling shareholders to make payments to the buyer's vendors on its behalf. To facilitate the negotiations and sale of the business, the selling shareholders might agree to make those payments if the total amount to be paid to the selling shareholders upon closing of the business combination transaction is sufficient to reimburse them for payments made on the behalf of the buyer. If these "disguised" reimbursements were treated as part of the consideration transferred for the business, the acquirer might not recognize those expenses and the amount of goodwill recognized for that business might be overstated.

ILLUSTRATION 3C.7 Accounting for reimbursement of acquisition costs paid by acquiree

On 30 June 20x6, Company X, which is domiciled in Singapore, acquired 100% shareholdings interest in Company Y in the United States. As part of the sale and purchase transaction, Company X had commissioned a law firm in the United States to perform legal due diligence. The cost of the legal due diligence amounted to $900,000. For convenience, Company X had requested Company Y to pay for legal due diligence on its behalf and that amount will be reimbursed by Company X through the consideration paid. As at the date of acquisition, the amount had been paid by Company Y.

The total amount paid by Company X in exchange for Company Y amounted to $6.9 million. The fair value of the identifiable net assets transferred by Company Y as at 30 June 20x6 amounted to approximately $5.8 million. Book value at the same date amounted to approximately $5.2 million. The effects of taxes are ignored in this illustration.

Analysis

The reimbursement of the cost of the legal due diligence amounting to $900,000 paid on behalf of Company Y by Company X will be accounted for separately from the acquisition of Company Y in accordance with paragraph 52(c) of IFRS 3. As the amount is reimbursed through the consideration paid, Company X will deduct this amount from the total amount paid of $6.9 million. Accordingly, the consideration transferred for the acquisition will be $6 million.

Calculation of goodwill

	$	
Consideration transferred	6,000,000	[6,900,000 – 900,000]
Less: Fair value of identifiable net assets of Company Y	(5,800,000)	
Goodwill on consolidation	200,000	

Prepare accounting entries

In the consolidated financial statements of Company X

Dr Due diligence expense	900,000		[Note 1]
Cr Investment in Company Y		900,000	
Being acquisition-related costs expensed in the consolidated financial statements of Company X			

Dr Share capital and equity of Company Y	5,200,000		
Dr Net identifiable assets (Excess of fair value over book value)	600,000		[5.8 million – 5.2 million]
Dr Goodwill	200,000		
Cr Investment in Company Y		6,000,000	
Being elimination of share capital and pre-acquisition reserves of TC			

In the separate financial statements of Company X

Dr Investment in Company Y	6,900,000	
Cr Cash		6,900,000
Being investment in Company Y and reimbursement of acquisition-related costs		

Explanatory note:

Company Y has recorded an amount receivable from Company X in its standalone financial statements upon payment made for the due diligence expense on Company X's behalf. Upon receipt of the consideration for the transaction, $900,000 was applied to settle the receivable and the receivable was consequently derecognized. Hence, an entry is required to recognize the acquisition-related cost as an expense in the consolidated financial statements of Company X.

QUESTIONS

Q3.1 Impairment risks

Goodwill under IFRS 3 *Business Combinations* is the difference between the aggregate of the fair value of consideration transferred, the amount of non-controlling interests at acquisition date, and the fair value of previously held equity interests and the net fair value of identifiable assets and liabilities. Goodwill has to be tested for impairment by companies and any impairment losses will have to be expensed off.

Required:

Using insights from the article, "Is Goodwill an Asset?" by L.T. Johnson and K.R. Petrone (*Accounting Horizons*, September 1998), advise companies on how they can minimize the risk of having to expense off huge impairment losses in future.

Q3.2 Special purpose entities

You have recently graduated and joined the ranks of an auditing firm. Soon after joining the firm, your overworked audit manager calls you to his office. "This client of ours seems to have interests in various special purpose entities. We need someone to update us on the accounting treatment of SPEs with respect to group reporting. I heard that you were an outstanding student and are ready to take on any challenge, so you should relish this little research assignment! After that, I'd like you to make a presentation to the audit team so that they can learn from your research."

After thinking through the "assignment," you scribbled your action plan:

(a) Provide background understanding of SPEs, particularly with respect to common reasons for their existence. Some real-life examples will be useful.

(b) Identify the accounting issues with regard to group reporting relating to SPEs.

(c) Explain how specific provisions in accounting standards deal with the accounting issues identified.

You recalled that as a student, you used to do keyword searches in the library databases. You will try these sources for a start. You also intend to surf the Internet for other helpful materials. The various articles and sources will be cited in your presentation so as to show your manager that your research has been properly and diligently carried out.

CASE

C3.1 International Airlines Group

The International Airlines Group (IAG) was formed during 2011 and is the parent company of Aer Lingus, British Airways, Iberia, and Vuelling. It is a Spanish registered company with shares traded on both the London and Spanish stock exchanges. Source the annual report and other public announcements and analysts reports to analyze the manner by which the business combination was achieved. You may visit the group's website http://www.iairgroup.com.

Required:

1. Explain the legal processes and structuring that took place to effect the business combination of IAG and the subsidiaries.
2. Analyze the acquisition method with respect to the business combination of IAG and its subsidiaries:
   (a) Who was the acquirer? Provide evidence of control.
   (b) What were the significant assets and liabilities of the subsidiaries that were the subject of fair valuation?
   (c) How was goodwill determined? Explain the special complexities relating to goodwill determination for this business combination.

CONCEPT QUESTIONS

CQ3.1 Acquisition Accounting

Acquisition accounting requires special accounting treatment that is not permitted or required in normal accounting outside of a business combination. Provide at least three examples of special accounting treatment under IFRS 3 *Business Combinations* that are not permitted or required by other accounting standards.

CQ3.2 Debate on options permitted on the measurement of non-controlling interests under IFRS 3

IFRS 3, unlike US GAAP, allows non-controlling interests at acquisition date to be recognized at either full fair value or a proportionate share of the fair value of identifiable net assets of the acquiree at acquisition date.

Suggestion for instructor: Break the class into groups of three or four persons to allow them to discuss among themselves the option that they will choose and why. After the small group discussion, ask the class to vote for the option that they will choose. Get different individuals to explain the reasons for their choice.

Required:

Which option will you choose and why? Explain the stakeholders' perspective that you are upholding in your choice.

CQ3.3 Forms of business combinations

A business combination is when an acquirer obtains control of one or more businesses. In reality, there are different ways to achieve this objective.

Required:

1. Describe four forms of business combinations by which an acquirer may obtain control of one or more businesses.
2. Explain the differences in forms of business combinations with respect to the following questions:
   - What is legally acquired in the transaction?
   - Who is the seller?
   - What is the legal entity (entities) and what is the economic entity?
   - Is there a need for consolidation?
   - Who has control of the economic entity?

PROBLEMS

P3.1 Fair value of consideration transferred

Scenario A

A Co acquired a controlling interest in B Co and entered into the following transactions on acquisition date, 1 July 20x3.

1. Cash payment to owners of B Co	$4,000,000
2. Loan payable to banks to finance the acquisition of B Co	$3,200,000
3. Fair value of shares issued to owners of B Co	$5,000,000
4. Book value of shares issued to owners of B Co	$4,000,000
5. Cost of issuing equity	$40,000
6. Deferred consideration, payable at the end of 5 years	$8,000,000
7. Present value of deferred consideration at an interest rate of 5% p.a.	$6,268,209

Required:

Prepare the journal entries that A Co would record to reflect the above transactions on 1 July 20x3. Unamortized discount or premium, where applicable, should be shown separately.

Scenario B

A Co acquired a controlling interest in B Co and entered into the following transactions on acquisition date, 1 July 20x3.

1. Cash payment to owners of B Co	$1,000,000
2. Loan payable to banks to finance the acquisition of B Co	$2,200,000
3. Fair value of land transferred to owners of B Co	$500,000
4. Book value of land transferred to owners of B Co	$400,000
5. Contingent refund, amount paid by seller at the end of 2 years	$300,000
6. Present value of $300,000 at an appropriate interest rate	$272,109
7. Probability of refund occurring	0.20

Required:

Prepare the journal entries to record the above transactions on 1 July 20x3 in the books of A Co. Unamortized discount or premium, where applicable, should be shown separately.

P3.2 Determining the consideration transferred

On 1 January 20x6, P purchased 80% of the equity of S from S's existing owners. The following transactions arose on or just prior to the acquisition date.

Issue of P's shares to S's existing owners	1,200,000	shares (Note c)
Immediate cash payment	$ 500,000	
Deferred cash payment	$1,000,000	payable five years from 1 January 20x6
Due diligence fees paid to consultants	$ 20,000	
Cost of issuing shares by P	$ 5000	
Equipment transferred in settlement by P:		
Net book value of equipment	$ 40,000	
Fair value of equipment	$ 50,000	
Contingent payment to P by sellers	$ 300,000	(Note a)
Number of P's shares before new issue	2,000,000	
Number of S's shares at date of acquisition	1,800,000	

Additional information:

(a) The existing owners of S undertook to pay P an amount of $300,000 if the profit of S falls below $1,000,000 per year in 20x6 and 20x7. Average profit after tax of S had exceeded $1,500,000 in the last five years and there are no indications that profit will decline in the future.

(b) P's effective interest rate was 5% per annum.

(c) At the date of exchange of shares:

(i) The fair value of the equity of P was $4,000,000.

(ii) The fair value of the equity of S was $3,200,000.

The fair value of S includes the fair values of goodwill and identifiable net assets as at the date of acquisition. The fair value of P includes the effects of the acquisition of S. The fair value of non-controlling interests as at acquisition date was $640,000.

(d) The book and fair values of S's identifiable net assets on 1 January 20x6 are as follows:

	S Book value	S Fair value
Intangible assets	$0	$700,000
Other identifiable assets	2,500,000	2,500,000
Identifiable liabilities	(500,000)	(500,000)
Net identifiable assets	$2,000,000	$2,700,000

Tax rate of 20% applies to fair value adjustments.

Required:

1. Determine the fair value of consideration transferred in accordance with IFRS 3 *Business Combinations* if a proportional interest of P's fair value is the most reliable measure of the shares issued by P. Identify the specific components of consideration transferred.
2. Determine the fair value of consideration transferred in accordance with IFRS 3 *Business Combinations* if a proportional interest of S's fair value is the most reliable measure of the shares acquired by P. Identify the specific components of consideration transferred.
3. Assuming that the fair value of P is used to determine the fair value of shares issued (that is, (1) above), prepare the journal entries in P's books to record the investment in S and the other transactions entered into on 1 January 20x6. page 150
4. Assuming (1) above, prepare the consolidation entry to eliminate the investment in S and to recognize the goodwill and fair value adjustment(s).

P3.3 Determining the consideration transferred

During January 20x5, P Co performed due diligence tests on S Co. On 1 February 20x5, P Co completed the purchase of 80% of S Co from V Co, the existing owner of S Co.

The following expenditures were incurred by P Co during January 20x5:

Payment to consultants to conduct due diligence checks on S Co	$200,000
Number of ordinary shares issued by P Co to V Co	6,000,000
Fair value per share of P Co at date of share issue, reliably measured	$3
Salary of business development manager of P Co for January 20x5	$20,000
Travelling and hotel expenses incurred by the business development manager in relation to the acquisition of S Co	$15,000
Undiscounted cash payment payable to V Co at the end of five years	$1,000,000
Interest payable to V Co for deferred payment	6% per annum
Legal fees to execute sales agreement with V Co	$30,000
Assumption of the liabilities of V Co (P assumes legal obligation to pay off the short-term liabilities of V Co in settlement of purchase price)	$200,000
Stamp duties and other incidentals of share issue to V Co	$10,000

Details relating to S Co as at 1 February 20x5:

Share capital	$4,000,000
Retained earnings	5,600,000
Other reserves	1,200,000
As reported in the interim financial statements of S Co	$10,800,000
Fair value of unrecognized intangible asset	$2,000,000

(a) Estimated useful life of intangible asset from 1 February 20x5 was five years.

(b) Fair value of non-controlling interests as at 1 February 20x5 was $4,700,000.

(c) The financial year-end is 31 December. Tax rate is 20%. Recognize tax effects on fair value adjustments.

Required:

1. Determine the consideration transferred in accordance with IFRS 3 *Business Combinations*.
2. Show the journal entry or entries in P's books to record the expenditures incurred by P Co in 20x5.
3. Show partial consolidation entries for the year ended 31 December 20x5.

P3.4 Fair value of consideration transferred

A Co acquires a controlling interest in B Co. The following information relates to transactions occurring on or before the acquisition date, 1 July 20x0:

Cash payment to owners of B Co	$4,000,000
Loan payable to banks to finance the acquisition of B Co	5,000,000
Fair value of shares issued to owners of B Co	6,400,000
Book value of shares issued to owners of B Co	3,600,000
Cost of issuing equity	90,000
Deferred consideration, payable at the end of 5 years	8,000,000
Present value of deferred consideration	6,268,209
Additional payment made by A Co if contingent event occurs	1,000,000
Contingent event:	
Profit of B Co for year ending 31 Dec 20x1	> $5 million
Period for profit target	Year ending 31 Dec 20x1
Date of payment of contingent payment	31 Dec 20x1
Probability of profit of B Co > $5 million in 20x1	0.6
Probability of profit of B Co < $5 million in 20x1	0.4
Cost of capital of A Co	5% p.a.
Cost of capital of former owners	7% p.a.
Actual profit for B Co for year ended 31 Dec 20x1	$4 million
Fair value of buildings transferred to owners of B Co	$6,000,000
Book value of buildings transferred to owners of B Co	$5,500,000
Valuation and due diligence fees	$130,000

The financial year end falls on 31 December.

Required

1. Show the journal entries to record the above transactions in A Co's books as at 1 July 20x0.
2. Prepare the amortization table on the deferred consideration for the period from 1 July 20x0 to 30 June 20x5.
3. Show the journal entry to record the interest on the deferred consideration for the year ended 31 December 20x1.
4. Show the journal entry to record the terminal entry for the contingent consideration as at 31 December 20x1.

P3.5 Different forms of business combination

P Co is keen to acquire the business of S Co on 1 January 20x1 and it can do so in one of two ways. P Co will issue shares with fair value of $700,000 as settlement for the acquisition under each alternative.

(a) *Alternative 1:* P Co acquires 100% of the net assets (including cash) of S Co through a purchase agreement with S Co.

(b) *Alternative 2:* P Co acquires 100% of the ownership interest of S Co from the owners of S Co.

Details of the net assets of P Co and S Co on 1 January 20x1 are shown below. Tax rate is 20%. Recognize the deferred tax effects, if any, on the difference between the fair value and the book value of identifiable net assets.

	P Co Book value	S Co Book value	S Co Fair value
Intangible asset from contracts		–	$ 30,000
Investment in S Co	$ 700,000		
Fixed assets	420,000	$300,000	350,000
Inventory	130,000	40,000	60,000
Accounts receivable	200,000	100,000	90,000
Cash	100,000	20,000	20,000
Accounts payable	(150,000)	(80,000)	(80,000)
Net assets	$1,400,000	$380,000	$470,000
Share capital	$ 700,000	$200,000	
Retained earnings	700,000	180,000	
Equity	$1,400,000	$380,000	$470,000

1. Under Alternative 1, show the journal entry to record the purchase of net assets of S Co by P Co in its separate financial statements on 1 January 20x1.
2. Under Alternative 2, show the journal entry to record the acquisition in P Co's separate financial statements on 1 January 20x1.
3. Under Alternative 2, complete the consolidation worksheet below to show the group statement of financial position on 1 January 20x1.

	P CO Book value	S CO Book value	Dr	Cr	Total
Investment in S Co	$ 700,000	–			
Fixed assets	420,000	$300,000			
Inventory	130,000	40,000			
Accounts receivable	200,000	100,000			
Cash	100,000	20,000			
Accounts payable	(150,000)	(80,000)			
Net assets	$1,400,000	$380,000			
Share capital	$ 700,000	$200,000			
Retained earnings	700,000	180,000			
Equity	$1,400,000	$380,000			

P3.6 Fair value of consideration transferred

On 1 January 20x1, P Co entered into an agreement with Tuscany Co to acquire the net assets and business of Tuscany Co. The following transactions arose on 1 July 20x1 to execute the agreement with respect to the acquisition.

Cash payment paid to Tuscany Co	$1,000,000
Loan payable to banks to finance the acquisition of the business	$400,000
Fair value of land transferred to Tuscany Co	$2,000,000
Book value of land transferred to Tuscany Co	$800,000
Cost of executing acquisition agreement	$40,000
Contingent refund receivable at the end of 5 years	$1,200,000

Under the acquisition agreement, Tuscany Co will refund P Co $1,200,000 if Tuscany fails to meet profit targets. P Co estimates that there is 50% probability of receiving the refund at the end of five years. The cost of capital of Tuscany Co is 5% per annum while that of P Co is 3% per annum. The fair and book values of identifiable net assets of Tuscany Co at date of acquisition were as follows:

	Book value	Fair value
Inventory	$ 100,000	$ 156,000
Intangible assets	–	25,000
Other net assets	1,665,000	1,665,000
Total	$1,765,000	$1,846,000

Tax rate is 20%

Required

1. Prepare the journal entries to recognize the acquisition in P Co's books and other related entries during the year ended 31 December 20x1.

2. Prepare journal entries for the year ended 31 December 20x2.
3. Assuming that the acquired business met profit targets at the end of five years, what journal entry should P Co pass as at that date?

P3.7 Reverse acquisition

On 1 July 20x3, Small Ltd issued 10 million new shares to owners of Sumo Pte Ltd in exchange for all of Sumo Pte Ltd's shares. The share exchange is the result of a reverse acquisition of Small Ltd by Sumo Pte Ltd. The number of shares and other financial information just before the share issue was as follows:

	Small Ltd	Sumo Pte Ltd
Number of existing ordinary shares before the share exchange	400,000	6,000,000
Market price per share	$20	
Fair value per share		$10

	Small Ltd	Sumo Pte Ltd
Share capital	$500,000	$12,000,000
Retained earnings	120,000	22,000,000
Revaluation reserves	–	500,000
Shareholders' equity	$620,000	$34,500,000

There were no material under- or over-valued identifiable net assets of either Small or Sumo as of 1 July 20x3. The market price of Small Ltd rose as a result of market reactions to the news of the reverse acquisition.

Required

Assuming that the fair value per share of Sumo Pte Ltd is more reliably determinable than the inflated market price per share of Small Ltd, prepare the consolidation adjustment to eliminate the investment in the acquiree by the acquirer as at 1 July 20x3.

P3.8 Reverse acquisition versus normal acquisition

Sumo Pte Ltd initiated a share exchange agreement with Trim Ltd, a publicly listed company, whereby Trim Ltd would issue 16 million new ordinary shares in exchange for 100% ownership of Sumo Pte Ltd. On 1 July 20x1, all parties to the agreement executed the share exchange. The shareholders' equity of Trim and Sumo on 1 July 20x1 were as follows:

	Trim Ltd	Sumo Pte Ltd
Share capital	$20,000,000	$ 50,000,000
Retained earnings	5,000,000	30,000,000
Revaluation reserves	2,000,000	20,000,000
Shareholders' equity	$27,000,000	$100,000,000

The number of ordinary shares before the share exchange and the fair value per ordinary share of Trim Ltd and Sumo Pte Ltd are shown below:

	Trim Ltd	Sumo Pte Ltd
Fair value of entity	$30,000,000	$120,000,000
Number of ordinary shares	4,000,000	8,000,000
Fair value per ordinary share	$7.50	$15.00

(a) *Provision for loss under a guarantee:* During 20x0, Trim Ltd sold land to a customer and gave a special guarantee to refund the customer the difference between the market value of the land on 1 July 20x4 and the original sales price. The following outcomes are deemed reliable:

	Probability	Settlement
Best outcome	0.60	$ 0
Moderate outcome	0.30	200,000
Worst outcome	0.10	500,000

Trim Ltd did not recognize the provision on its separate financial statements because the provision was deemed as not "probable."

(b) *Rights under a License:* Trim Ltd has a non-transferable license to operate a toll booth at a bridge crossing. Trim Ltd collects toll fees for the government and retains a portion as fee for managing the booth. The license fee has a remaining useful life of three years from 1 July 20x1. The expected annual fee income of Trim Ltd are as follows:

	Probability	Fee
High traffic	0.50	$1,000,000
Moderate traffic	0.30	500,000
Low traffic	0.20	140,000

(c) *Undervaluation of inventory:* As at 1 July 20x1, the book value of Sumo's identifiable net assets was close to fair value with the exception of the following:

Fair value of inventory	$18,000,000
Book value of inventory	24,000,000

Seventy percent of the inventory was re-sold during December 20x1.

The tax rate was 20% throughout. The cost of capital of Trim Ltd was 5% per annum.

Required

1. Assuming that the share exchange was in effect a reverse takeover (RTO), use the fair value of the acquirer's shares to determine the fair value of consideration transferred by Sumo.
2. Assuming an RTO scenario, determine the goodwill acquired in accordance with IFRS 3.
3. In July 20x4, a final settlement of $200,000 was made under the guarantee.
   (a) Show the entry to record the final settlement in Trim's books (no record had been made previously for the guarantee).

(b) Show the entry that would have been passed for the final settlement in the acquirer's books (although the economic entity does not have records, hypothetically assume that the books are kept).

(c) Show the consolidation adjustment to bring the entry in (a) to the entry in (b).

4. On 30 June 20x2, Trim Ltd revised its fee income under the high traffic scenario to $800,000. Explain how the acquirer should account for the following in its economic entity financial statements (with calculations) with respect to the license fee in 20x2 under each of the following situations:

   (a) The revision arose because of a failure to use information that was available as at acquisition date.

   (b) The revision arose because of new information on traffic conditions after acquisition date.

5. Assuming that the share exchange was not a RTO and that the fair value of Trim's shares are reliably measurable, calculate the goodwill acquired in accordance with IFRS 3.

P3.9 Normal versus reverse acquisition

Under the terms of a contract between Topaz Ltd and Diamond Pte Ltd, Topaz will issue 5,000,000 shares to the existing shareholders of Diamond in exchange for the entire 2,000,000 shares of Diamond.

Additional information:

(a) Topaz has 2,000,000 outstanding shares before the share issue.

(b) Fair value of Topaz shares is $2 per share and fair value of Diamond's shares is $6 per share.

(c) Assume that the fair value of shares has incorporated the effects of the acquisition.

(d) Assume that the share issue is accepted in full by existing shareholders of Diamond.

Financial statement information as at date of exchange is as follows:

	Topaz	Diamond
Projected annual revenue	$20,000,000	$50,000,000
Net fair value of identifiable net assets	2,000,000	9,000,000
Book value of net assets	1,800,000	$8,000,000

Required:

1. Assuming that it is a "normal" acquisition,

   (a) What is the fair value of consideration transferred if:

      (i) Fair value of Topaz's share is reliably determined (and Diamond's share is not)?

      (ii) Fair value of Diamond's share is reliably determined (and Topaz's share is not)?

   (b) Assuming (a)(i) above, what is the goodwill on consolidation?

   (c) What is the amount of net assets of the combined entity as at the date of acquisition assuming (a)(i) above?

2. Assuming that it is a "reverse" acquisition,

   (a) What is the fair value of consideration transferred if:

      (i) Fair value of Diamond's share is reliably determined (and Topaz's share is not)?

      (ii) Fair value of Topaz's share is reliably determined (and Diamond's share is not)?

(b) What is the goodwill on consolidation under the scenario in (a)(i) above?

(c) What is the amount of net assets of the combined entity as at the date of acquisition assuming (a)(i)?

3. Based on the information above, how would you assess whether the above arrangement is a "normal" or "reverse" acquisition? What other information would you require?

P3.10 Reverse versus normal acquisition

During April 20x3, Small Ltd, a publicly listed company, agreed to issue 8.5 million new ordinary shares to the shareholders of Big Pte Ltd in exchange for 100% ownership of Big Pte Ltd. On 1 July 20x3, all parties to the agreement executed the share exchange.

The shareholders' equity of Small and Big immediately prior to the share exchange were as follows:

	Small Ltd	Sumo Pte Ltd
Share capital	$500,000	$15,000,000
Retained earnings	$120,000	$18,000,000
Revaluation reserves	$50,000	$2,000,000
Shareholders' equity	$670,000	$35,000,000

The number of ordinary shares before the share exchange and the fair value per ordinary share of Small Ltd and Big Pte Ltd are shown below:

	Small Ltd	Big Pte Ltd
Fair value of entity	$1,000,000	$40,000,000
Number of ordinary shares	2,000,000	4,000,000
Fair value per ordinary share	$0.50	$10.00

Provision for environmental damages

During 20x2, Small Ltd was found to be guilty of breaching environmental laws. In the past, Small Ltd had publicly announced its policy of rectifying environmental damage caused by its operations. The outcome of the court judgment is unknown as at 1 July 20x3. Small disclosed this amount as a contingent liability in its separate financial statements. However, legal counsel had advised Small on the likelihood of the final settlement as follows:

	Probability	Settlement
Outcome A	0.35	$100,000
Outcome B	0.35	$80,000
Outcome C	0.30	$50,000

The expected date of final settlement was 1 July 20x6. The cost of capital of Small Ltd was 10% per annum.

License contract

Small had a non-cancellable contract to use the rights under a license for a period of ten years from 1 July 20x3. The annual contracted license fee, payable at the start of the year, was $100,000 while the annual market license fee at the date of acquisition was $150,000. Small recognized the license fee as an expense as and when incurred.

Identifiable net assets of Big Pte Ltd

As at 1 July 20x3, the book value of Big's identifiable net assets was close to fair value with the exception of the following:

Fair value of buildings	$2,000,000
Book value of buildings	$1,200,000

The buildings had a remaining useful life of 20 years from 1 July 20x3.

The tax rate was 20% throughout.

Required:

1. Assuming that the share exchange was in effect a reverse takeover (RTO), use the fair value of the acquirer's shares to determine the fair value of consideration transferred by Big. (To facilitate comparability across answers, use at least four decimal points to determine ownership interest.)
2. Assuming the RTO scenario, prepare the consolidation adjustments for the year ended 31 December 20x3 with Big as the acquirer, to eliminate the investment in the subsidiary and to amortize the differences between the fair value and book value of identifiable net assets. Where there is a difference between the principal sum and the fair value for financial assets or liabilities, record the difference in an unamortized discount or premium account.
3. In July 20x6, the courts imposed a fine of $60,000 on Small.
   (a) Show the entry to record the final settlement in Small's books (no provision had been made previously for the fine).
   (b) Show the consolidation adjustment to be made by Big during 20x6 with respect to the final settlement.
4. Should the acquirer recognize interest on the contract over the period of the lease? Why or why not? page 158
5. Assuming that the share exchange was <u>not</u> a RTO and that the fair value of Small's shares is reliable, prepare the consolidation adjustments for the year ending 31 December 20x3 with Small as the acquirer.

P3.11 Accounting for share-based payments in business combination

On 1 January 20x6, Company X acquires the entire share capital of $500,000 comprising of 500,000 ordinary shares in Company Y. Retained earnings as that date amounted to $100,000. In previous years, Company Y has issued employee share awards for which the balance in the employee share option reserve stands at $80,000 as at 1 January 20x6. The purchase consideration is $950,000 in cash. Net assets of Company Y as at 1 January 20x6 amounted to $680,000. The fair value of the net identifiable assets as at 1 January 20x6 is $820,000.

As part of the business combination, Company X exchanges replacement awards for the share-based payment awards of Company Y, for which employees had completed the vesting period of 5 years before the business combination. No post-combination service is required from the employees in return for the replacement awards. The market-based measure of the replacement and Company Y's awards at the acquisition date amounted to $300,000 and $200,000 respectively.

Calculate the portion of the market based measure of the replacement award at the date of acquisition to be allocated to the pre-combination and post combination services and prepare the accounting entries for the transaction. Ignore the tax effects for the question.

P3.12 Accounting for share-based payments in business combination

Assume the same facts as in P3.11 with the exception that in this case, Company X exchanges replacement awards for the share-based payment awards of Company Y, for which employees had yet to render all the services before

the date of acquisition. As at 1 January 20x6, the employees had rendered three out of a five-year vesting period. No post-combination service is required from the employees in return for the replacement awards.

Calculate the portion of the market-based measure of the replacement award at the date of acquisition to be allocated to the pre-combination and post-combination services and prepare the accounting entries for the transaction. Ignore the tax effects for the question.

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[1] Additionally, companies must provide segment information if they have equity or debt securities that are publicly traded, or if they are in the process of issuing equity or debt securities in public securities markets (IFRS 8).

[2] A predecessor standard of IFRS 3, IAS 22 *Business Combinations* permitted the use of the "uniting of interests" or "pooling of interests" in a business combination where there is no one dominant party that may be identified as an acquirer, that is, a situation best described as a "merger of equals."

[3] IFRS 10 Appendix A.

[4] IFRS 3 Appendix B.

[5] IFRS 3 Appendix B, paragraph B6(a).

[6] IFRS 3 paragraph 43.

[7] IFRS 3 Appendix B, paragraph B6(c).

[8] The acquisition method was previously called the purchase method under IFRS 3 *Business Combination* (2004). The term "purchase" was deemed restrictive by the International Accounting Standards Board as certain business combinations may arise from contract alone.

[9] Typically subject to approval by shareholders and regulatory requirements.

[10] In the separate financial statements of the acquirer, these acquisition-related costs are capitalized as part of the cost of investment in the acquirer.

[11] *Basis of conclusions to IFRS 3*, paragraph BC367.

[12] The date when the acquisition is announced and a binding agreement arises is also called the "closing date."

[13] "Push-down" accounting whereby the fair value adjustments are recognized in the acquiree's financial statements is not permitted by IFRS.

[14] Fair value is the "price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at measurement date" (IFRS 3 Appendix A citing IFRS 13).

[15] For a non-contractual relationship, the acquirer recognizes a gain or loss at fair value if the pre-existing relationship is settled by the business combination.

[16] If the settlement provision (ii) is less than the amount by which the contract is favorable or unfavorable (i), the difference is included as part of the business combination accounting.

[17] Typically, the present value of the future cash inflows from the rights exercisable in future.

[18] This term is from IFRS 3 Appendix B, paragraph B33.

[19] This term is from IFRS 3 Appendix B, paragraph B32.

[20] As defined in IFRS 3 Appendix A.

[21] As defined in IFRS 3 Appendix B, paragraph B37.

[22] IFRS 13 paragraph 86.

[23] IAS 37 paragraph 14.

[24] IAS 37 paragraph 10.

[25] IAS 1 *Presentation of Financial Statements*, paragraph 82(b).

[26] However, if the proceeds from the recovery of the asset is tax-exempt, no recognition of a deferred tax liability is required. Recovery must be determined in relation to the nature of the asset. For example, fixed assets and intangible assets are generally held for production rather than for re-sale. The absence of a capital gains tax may not preclude the recognition of a deferred tax liability as the economic benefits from these assets are revenues from goods and services that are subject to tax.

[27] IFRS 3 paragraph 19.

[28] IFRS 3 Basis of Conclusions, BC209.

[29] IFRS 3 Basis of Conclusions, BC210.

[30] Johnson, L.T., and K.R. Petrone, 1998. "Is Goodwill an Asset?" *Accounting Horizons*, September, 12(3), pp. 293–304.

[31] Financial Accounting Standards Board, 1999, 2001. Exposure Draft of Statement of Financial Accounting Standard 141 *Business Combinations*, Norwalk, CT.

[32] The target could take the form of equity of an entity, asset, or a group of assets. In the case where the target is a corporate entity, consolidated financial statements will have to be prepared under the requirements of IFRS 10 as the purchaser has obtained control over the target. However, because the target in this instance does not meet the definition of a business, the purchaser will account for this transaction as an acquisition of assets in its consolidated financial statements. As both entities are separate legal entities, separate financial statements apart from the consolidated financial statements of the group may also be maintained if it is required by laws and regulations of the local jurisdiction. In the case where the target is an asset or group of assets, only one set of financial statements is prepared, that is, the standalone financial statements of the purchaser. The purchaser will apply asset acquisition accounting in its standalone financial statements and the assets acquired are subsumed within the standalone financial statements.

[33] In the case of these subsidiaries that are not themselves investment entities and whose main purposes and activities are providing services that relate to the investment entity's investment activities, such subsidiaries shall be consolidated. However, if such entities are themselves investment entities, they must be measured at fair value through profit and loss.

[34] These investments include equity investments, non-financial asset investments as well as any debt instruments that have the potential to be held indefinitely such as perpetual debt instruments (i.e. exit strategies are not required for debt instruments with limited life).

[35] For instance, investment entities must elect the exemption from equity method in IAS 28 for investments in associates and joint ventures.

[36] The parties to the combination would refer to the acquirer and the acquiree and their owners, directors, and managers (including their agents).

[37] Generally, a gain on settlement will be recognized in the consolidated financial statements of the acquirer when the settlement of the pre-existing relationship is favorable to the acquirer and vice versa.

[38] IFRS 3 clarifies that an unfavorable contract is a contract that is unfavorable in terms of current market terms. It is not necessarily an onerous contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it.

[39] Such contingent consideration is also known as "earn-outs" in practice.

[40] IFRS 3 defines a contingent consideration as an obligation of the acquirer to transfer additional assets or equity interests to the former owners of an acquiree as part of the exchange for control of the acquiree if specified future events occur or conditions are met.

[41] IFRS 3 refers to the fair value determined under IFRS 2 as "market-based measure." The reason for this is because the application of the measurement method in IFRS 2 generally does not result in the amount at which market participants would exchange an award at a particular date, that is, its fair value at that date. Therefore, IFRS 3 provides this exception to the measurement principle for share-based payment awards.

[42] Paragraphs 35 and 37 of IAS 32 require the transaction costs of an equity transaction to be accounted for as a deduction from equity to the extent they are incremental costs directly attributable to the equity transaction that otherwise would have been avoided.

CHAPTER

4

Group Reporting III

Accounting for Business Combinations and Non-controlling Interests under IFRS 3 in Post-acquisition Periods

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

LO1 Understand the rationale for elimination of investment;

LO2 Understand the concept of non-controlling interests;

LO3 Appreciate the alternative measurement basis for non-controlling interests under IFRS 3;

LO4 Know how to prepare consolidation journal entries relating to goodwill, depreciation, and amortization of differences between book values and fair values of identifiable assets, contingent liabilities of acquired subsidiaries, and non-controlling interests;

LO5 Know how to prepare consolidation journal entries to allocate current and past income to non-controlling interests; and

LO6 Understand the components of non-controlling interests and know how to analytically determine their balances.

INTRODUCTION

In Chapter 3, we saw how the acquisition method requires the acquirer to recognize and measure the identifiable net assets of the acquiree at fair value, and also recognize the residual that is called goodwill. Although there are different forms of business combinations, they share the same features — there is an acquirer who gains control of one or more businesses. In substance, the acquisition of a subsidiary is effectively the acquisition of its net assets. Chapter 3 highlights the recognition and measurement principles that govern all types of business combinations. The acquirer should recognize and measure identifiable net assets at fair value. What is the impact of the fair value measurement in subsequent periods? This chapter focuses on the subsequent effects when the identifiable net assets are sold, consumed, extinguished, or amortized. Since the acquirer recognizes and measures the identifiable net assets at fair value, the sale, consumption, use, or settlement of the assets and liabilities of the acquiree should also be recorded at acquisition-date fair value. The acquirer also has to test for impairment of goodwill. In this chapter, we go deeper into the type of business combinations that result in the acquisition of subsidiaries, and show how consolidation journal entries are passed to record the subsequent effects of the acquisition.

The chapter explains accounting for non-controlling interests, and shows how the balance of non-controlling interests can be analyzed with respect to three components. The chapter illustrates consolidation journal entries to recognize non-controlling interests' share of equity.

The chapter also illustrates the accounting for business combinations in multiple periods. In consolidation, certain past consolidation adjusting entries have to be re-enacted to reflect adjustments that were passed in previous periods. This chapter explains the re-enactment process.

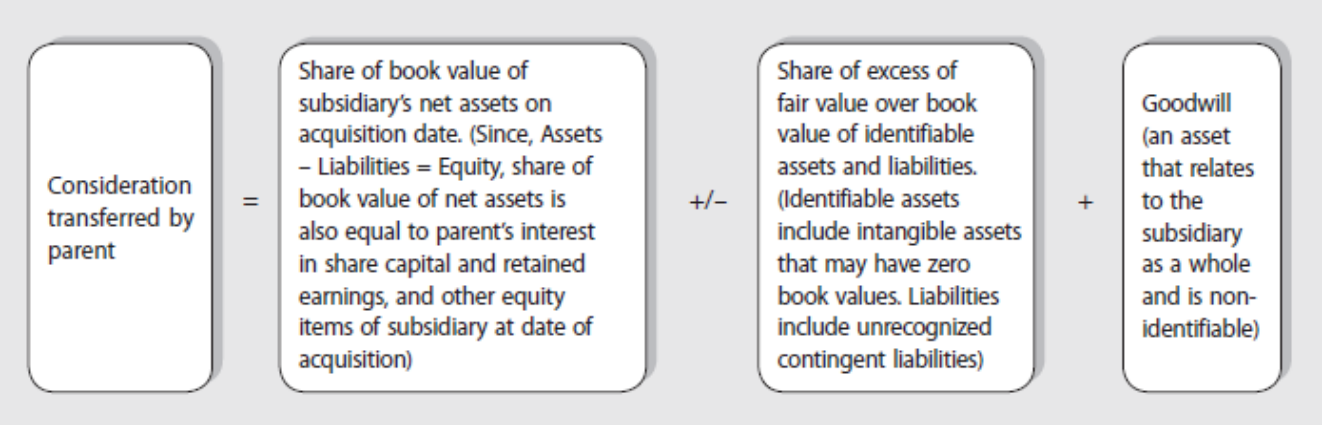
ELIMINATION OF INVESTMENT IN A SUBSIDIARY

The first intragroup transaction that has to be eliminated in the consolidation worksheet is the investment by the parent in the subsidiary. Without the elimination, a double-counting of assets arises — the investment asset in the parent's statement of financial position is duplicated by the individual assets and the liabilities of the subsidiary acquired. By virtue of its power and ability to affect the variable returns of a subsidiary, the parent has control over the assets and liabilities of its subsidiary, and should, therefore, recognize the assets and liabilities of the subsidiary on the combined statement of financial position.

Hence, the consolidation process entails *asset substitution* whereby the investment in a subsidiary in the parent's separate financial statements is eliminated and substituted with the identifiable assets and liabilities of the subsidiary resulting in a residual called goodwill.

Consider what the parent is buying through its investment in a subsidiary. Essentially, the investment is a payment for three elements as shown in Figure 4.1.

FIGURE 4.1 What a parent is paying for through its investment in a subsidiary



In the group or consolidated financial statements, the investment account must be zero.

In other words, all items that have been recognized in the investment account must be "reversed" during the consolidation process and substituted with the three elements in Figure 4.1.

page 161

Why Eliminate the Investment Account?

An *asset substitution process* takes place whereby the investment account is replaced by the identifiable assets and liabilities of the subsidiary through the combination of the statement of financial position of the subsidiary with that of the parent. Hence, elimination of the investment account is necessary to avoid recognizing an asset in two forms.

On the equity side, an entity is not able to invest in itself; neither can it issue shares to itself. Share capital issued by a subsidiary has to be eliminated on consolidation. Further, any pre-acquisition retained earnings or pre-acquisition reserves of the subsidiary should not be included in consolidated equity. Pre-acquisition retained earnings arose prior to the acquisition of control by the parent, making it inappropriate to consolidate these earnings with the retained earnings of the parent. Hence, the investment in a subsidiary by a parent must be eliminated against the share capital, retained earnings, and other equity items of the subsidiary at the date of acquisition.

After eliminating the investment in a subsidiary against the share capital, retained earnings, and other equity items of the subsidiary that exist at the date of acquisition, a differential remains. As shown in Figure 4.1, the differential comprises two components, which are goodwill and the excess or deficit of fair value over book value of identifiable net assets of the acquired subsidiary.

Re-enactment of the Elimination of Investment Entry

We have explained the basis for eliminating the investment in subsidiary account. In a subsequent year, the elimination of the investment has to be repeated because the parent's legal entity financial statements would include the investment in subsidiary balance. The elimination of investment entry has to be re-enacted for as long as the investment exists. The elimination process takes place in consolidation, where the building blocks are the legal entity financial statements. Consolidation journal entries are, therefore, important as they adjust the combined balances of the legal financial statements of parent and subsidiaries to arrive at proper consolidated balances. The consolidation worksheets, as introduced in Chapter 3, present the combination of the parent's and subsidiary's legal entity financial statements, and show the consolidation adjustments to arrive at the consolidated financial statements. We will see in this chapter that certain past consolidation adjustments have to be re-enacted in the current year to reflect the consolidated balances as at the beginning of the year.[1]

page 162

The mechanics of consolidation requires the following three steps:

1. Showing the balances in the legal entity financial statements of the parent and the subsidiary in the consolidation worksheet;

2. Posting the consolidation journal entries in the worksheet; and
3. Summing up (1) and (2) to arrive at the consolidated balances.

Illustration 4.1 shows how the investment in a subsidiary of a parent is eliminated against the share capital and pre-acquisition retained earnings of the subsidiary. The pre-acquisition retained earnings are the retained earnings as at acquisition date. These retained earnings should not be included in the parent's consolidated financial statements as they arose before acquisition date and do not reflect the cumulative earnings of the new economic entity. The same principle applies to other components of equity such as revaluation reserves, foreign currency translation reserves, and other comprehensive income components. Under the acquisition method, the parent has to recognize the previously unrecognized intangible asset of the subsidiary in the consolidated financial statements. Deferred tax effects of the unrecognized intangible asset has to be also recognized. The residual is goodwill. In preparing the consolidated financial statements, the parent has to eliminate the investment at each reporting date. For as long as the investment remains in the books of the parent, the investment has to be eliminated on consolidation. In this example, the parent acquired a 100% interest. Later on in the chapter, we go deeper into the accounting for non-controlling interests where a parent's controlling interests are less than 100%.

ILLUSTRATION 4.1 Elimination of investment in subsidiary

Parent Co bought a 100% interest in Subsidiary Co for $200,000. At the date of acquisition, Subsidiary Co had the following equity balance:

Share capital	$50,000
Retained earnings	30,000
Equity	80,000

At acquisition date, Subsidiary Co had an unrecognized intangible asset that had a fair value of $50,000. The tax rate at acquisition date was 20%.

In the consolidation worksheet below, we show the legal entity financial statements of Parent and Subsidiary. We then show the consolidation adjustments and the consolidated statement of financial position. You can see from the worksheets how the Investment in Subsidiary balance is eliminated against the share capital and retained earnings of Subsidiary Co. The investment does not offset the equity of the subsidiary perfectly and gives rise to a differential. The differential comprising of the intangible asset, deferred tax liability, and goodwill are recognized in the consolidated financial statements.

	Parent	Subsidiary	Consolidation Adjustments Dr	Consolidation Adjustments Cr	Consolidated Statement of Financial Position
Assets					
Investment in Subsidiary	$200,000			$200,000	$ 0
Goodwill (Note 2)			$ 80,000		80,000
Other net assets (Note 1)	300,000	$80,000	50,000	10,000	420,000
	$500,000	$80,000	$130,000	$210,000	$500,000
Equity					
Share capital	$100,000	$50,000	$ 50,000		$100,000
Retained earnings	400,000	30,000	30,000		400,000
	$500,000	$80,000	$ 80,000	$ 0	$500,000
			$210,000	$210,000	
Note 1:					
Increase in other net assets due to recognition of intangible asset					$ 50,000
Decrease in other net assets due to recognition of deferred tax liability					(10,000)
Net increase in other net assets					$ 40,000
Note 2: Goodwill is the excess of the investment over the fair value of identifiable net assets:					
Investment in Subsidiary			$200,000		
Book value of equity or net assets			(80,000)		
Fair value of intangible asset		$50,000			
Book value of intangible asset		0			
Excess of fair value over book value		$50,000			
Deferred tax effects		(10,000)			
			(40,000)		
Goodwill			$ 80,000		

The consolidation journal entry (CJE) that is passed is as follows:

CJE1: Elimination of investment in subsidiary

Dr Share capital	50,000	
Dr Retained earnings	30,000	
Dr Goodwill	80,000	
Dr Intangible asset	50,000	
Cr Investment in Subsidiary		200,000
Cr Deferred tax liability		10,000
	210,000	210,000

CJE1 has to be re-enacted at each reporting date for as long as Parent has control over Subsidiary. Without CJE1, the investment is un-eliminated and the goodwill is unrecognized. We need to remember that the building blocks of the consolidation worksheet are the legal entity financial statements of the parent and its

subsidiaries. There are no carry-forward balances in consolidation, and each consolidation process is a fresh-start approach requiring the parent to re-enact certain consolidation adjustments.

EFFECTS OF AMORTIZATION, DEPRECIATION, AND DISPOSAL OF UNDERVALUED OR OVERVALUED ASSETS AND LIABILITIES SUBSEQUENT TO ACQUISITION

In Chapter 3, we saw how business combinations can take different forms. An acquirer can acquire directly the business and recognize the identifiable net assets and goodwill on to its own legal entity financial statements. In this situation, the accounting is more straightforward. The acquirer will account for the acquired net assets in the same manner as assets purchased from third parties. If the acquired net assets included intangible assets, these would be recognized at fair value to reflect the exchange transaction. Subsequently, the acquirer would record the amortization on the basis of the initial fair value. In the direct acquisition of the net assets of a business, there is no need for the acquirer to prepare consolidation worksheets to show the effects of the acquisition. The legal entity financial statements of the acquirer would include the assets and liabilities of the enlarged entity. However, when the acquirer gains control of another entity, the acquirer has to consolidate the other entity to reflect the effects as if the acquirer had acquired the other entity's net assets. The acquirer would have to pass consolidation journal entries to recognize the acquisition-date fair values. Subsequently, the acquirer would have to pass consolidation journal entries to recognize the amortization of the acquisition-date fair values. The accounting is a little more complex than the situation when the acquirer acquires the net assets directly. Nonetheless, the effects in both types of business combinations must be the same.

From the discussion above, we note that IFRS 3 requires the following to be recognized:

1. Fair value of identifiable net assets of the acquiree as at acquisition date;
2. Intangible assets and contingent liabilities that meet the recognition criteria in IFRS 3, and that are not normally recognized in the separate financial statements of the acquiree;
3. Deferred tax liability or deferred tax asset arising from the above two items; and
4. Goodwill as a residual.

Since these adjustments are passed through the consolidated financial statements each year, the extinguishment of the fair value changes must also be reflected in the consolidated financial statements. From the group's perspective, subsequent extinguishment of assets and liabilities of the subsidiary must be determined based on the fair values recognized as at the date of acquisition. *Under the acquisition method, the acquirer is deemed to have acquired the identifiable net assets, both recognized and unrecognized, and the unidentifiable goodwill asset at fair values. The fair value of the assets of the acquiree at date of acquisition becomes the new "cost" to the group.* Subsequent amortization, depreciation, and cost of sales of the acquired assets are determined based on the fair value as at date of acquisition. The "set-up" entry (the elimination of the consideration transferred and the recognition of fair value adjustments) and the "amortization" entry (when the identifiable assets or liabilities are extinguished, disposed of, depreciated, amortized, or written off for impairment losses) must be repeated each year until the date of disposal of the investment in subsidiary or the date when control is lost. The process by which the fair value differences are extinguished is referred to as the "amortization" of the excess of the fair value over the book value of identifiable assets and liabilities.

page 165

New internally-generated goodwill or subsequent appreciation in fair values are not recognized subsequent to acquisition date. The acquisition method recognizes fair value only at the critical event — the acquisition date. Subsequent to this date, the accounting for assets and liabilities is governed by the respective accounting standards. For example, research and development expenditures incurred after acquisition date will be subject to the recognition criteria in IAS 38 *Intangible Assets*. Research expenditures are expensed off and development expenditures are capitalized only if certain conditions are met.

Recall that the building blocks for consolidation are the separate financial statements of the parent and the subsidiary. Since the assets and liabilities on the subsidiary's statement of financial position are carried at book values, the "set-up" entry is necessary to adjust the book values to fair values. When an identifiable asset is disposed of or depreciated, a consolidation entry is required to adjust to acquisition-date fair value (FV), the cost of sales, or depreciation expense that is recorded at book value (BV) in the separate financial statements. Book value refers to the carrying amounts in the legal entity financial statements. Hence, in a period when the identifiable asset is sold or depreciated,

$$\text{BV of expense in separate financial statements} + \text{(FV – BV) adjustment to expense} = \text{FV of expense in consolidated financial statements}$$

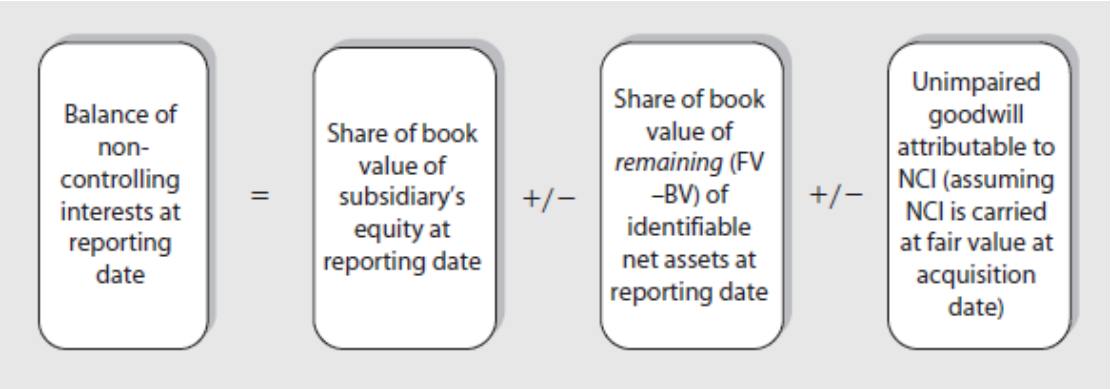
Accounting for Non-controlling Interests under IFRS 3

The concept of non-controlling interests has been introduced in Chapter 3. Non-controlling interests (previously referred to as "minority interests" in the 2004 version of IFRS 3) arise only in the consolidated financial statements where one or more subsidiaries are not wholly owned by the parent. IFRS 10 Appendix A defines non-controlling interests as follows:

> Non-controlling interest is the equity in a subsidiary not attributable, directly or indirectly, to a parent.

In essence, non-controlling interests have a share in any change in equity or net assets of the acquired subsidiary. We can analyze the balance in non-controlling interests to the three components that we saw in Figure 4.1. While Figure 4.1 reflects the parent's share of equity in a subsidiary at acquisition date with respect to the three components, Figure 4.2 shows that a similar relationship applies to non-controlling interests' share in equity of a subsidiary at any reporting date. The balance of non-controlling interests changes from period to period; hence, we can analyze the balance to the three components at any time. Figure 4.2 shows the three components that are included in the balance of non-controlling interests at reporting date.

FIGURE 4.2 Analysis of non-controlling interests



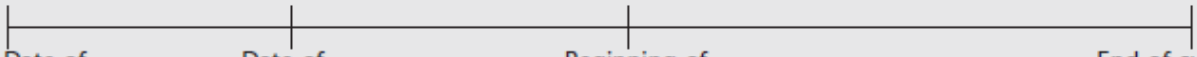
As we saw in Chapter 3, non-controlling interests can be measured in one of two ways. If non-controlling interests are measured at fair value at acquisition date, the third component will feature in the analysis. However, if non-controlling interests are measured as a proportion of identifiable net assets (excluding goodwill), the analysis will comprise only the first two components.

The analysis of non-controlling interests permits us to check our processes and gives us a quick way to assess the balance of non-controlling interests. However, another way of arriving at the non-controlling interests is to build up the balance chronologically through the consolidation process.

Figure 4.3 shows the reconstruction of non-controlling interests over time, beginning from acquisition date to the end of the current period.

FIGURE 4.3 Reconstructing non-controlling interests on the statement of financial position

Consider the following diagrammatic representation of the timeline that shows the components in the balance of non-controlling interests (NCI).



Date of incorporation	Date of acquisition	Beginning of current year	End of current year
	NCI have a share of 1. Share capital 2. Retained earnings 3. Other equity 4. Fair value differentials 5. Goodwill	NCI have a share of 1. Change in share capital 2. Change in retained earnings 3. Change in other equity 4. Past amortization of fair value differential 5. Past impairment of goodwill	NCI have a share of 1. Profit after tax 2. Current amortization of fair value differential 3. Current impairment of goodwill 4. Dividends as a repayment of profits 5. Change in other equity

At acquisition date, non-controlling interests would have been attributed the following three components if the fair value alternative is applied:

1. Book value or carrying amount of equity or net assets (that is, the amounts recognized in the subsidiary's legal entity financial statements);
2. Differences between the fair value and the book value or carrying amount of identifiable net assets (that is, the fair value differentials arising as at acquisition date); and
3. Goodwill (the unrecognized unidentifiable asset of the subsidiary).

You should take note that the first component attributed to non-controlling interests is the balance of equity (that is, share capital, retained earnings, other comprehensive income, and other equity components). These equity components would have arisen over the period from incorporation date to acquisition date. Hence, NCI as a collective body would have had an interest in the acquiree even before the acquisition date.

The timeline shows the continuous build-up of the balance of non-controlling interests. Unlike other accounts in the financial statements, the non-controlling interests do not exist in the legal books of the subsidiary. Non-controlling interests are equity interests in the economic entity and they feature in the consolidated financial statements only.

As no consolidation "ledgers" are kept, there are no "running balances" of non-controlling interests. The consolidation journal entries relating to non-controlling interests must be re-enacted each year to arrive at the current balance of non-controlling interests.

At each reporting date, the group will "re-create" the non-controlling interests account in the consolidated financial statements by recognizing the sequential build-up:

1. As of acquisition date;

2. From acquisition date to the beginning of the current period; and
3. During the current period.

Since the consolidation journal entries are repeated each year, we describe the process as a "re-enactment" of the attribution of equity to non-controlling interests.

Unlike a parent, which is entitled to consolidate retained earnings of a subsidiary from the date of acquisition, non-controlling interests as a collective body are entitled to their share of retained earnings of the subsidiary from incorporation. *There is no distinction between pre-acquisition and post-acquisition retained earnings for non-controlling interests*. The same applies to other comprehensive income; non-controlling interests collectively have a share of accumulated other comprehensive income arising from incorporation date to the current date. Hence, non-controlling interests have a share in the equity in a subsidiary at any given time when ownership in the subsidiary is held by parties other than the parent.

Because non-controlling interests have a share of the residual interest in the net assets of a subsidiary, they are normally a credit balance. Recall the accounting equation under the entity theory:

$$\text{Total equity (parent's and non-controlling interests')} = \text{Assets} - \text{Liabilities}$$

The above equation shows that equity on the consolidated statement of financial statement must include both the interests of equity owners of the parent and non-controlling interests of partially owned subsidiaries. IFRS 10 makes it clear that non-controlling interests are equity items and must be shown separately from the equity of the owners of the parent. On the other side of equation, total assets less total liabilities must be reported. Even if a subsidiary is only partly owned by the parent, the assets and liabilities of the subsidiary must be reported in full.

Non-controlling Interests' Goodwill

In Chapter 2, we explain how the parent and entity theories determine the presentation and measurement of non-controlling interests in the consolidated financial statements. In Chapter 3, we also considered the alternative bases permitted for the measurement of non-controlling interests at acquisition date. IFRS 3 paragraph 19 allows non-controlling interests in the acquiree at acquisition date to be measured at either:

1. Fair value; or
2. As a proportion of the recognized amounts of the acquiree's identifiable net assets.

When the acquiree has both present ownership interests (that is, issued shares) and potential ordinary shares (for example, convertible bonds or options), the non-controlling interests' share of the potential ordinary shares must be measured at fair value. The option to measure non-controlling interests at fair value or a proportion of the recognized amounts of identifiable net assets of the acquiree applies only to the shares actually issued.

When non-controlling interests are measured at fair value, goodwill attributable to non-controlling interests will be recognized in the consolidated financial statements. Under the fair value basis, non-controlling interests comprise the following three components:

1. Share of book value of identifiable net assets of the subsidiary;
2. Share of (fair value – book value) of identifiable net assets of the subsidiary at acquisition date; and
3. Goodwill attributable to non-controlling interests at acquisition date.

Under the fair value basis, non-controlling interests are determined with reference to either active market prices of equity shares of the subsidiary at acquisition date or other valuation techniques (IFRS 3 App B:B44). Fair value per share of non-controlling interests may differ from fair value per share of the acquirer because a control premium may be paid by the acquirer (IFRS 3 App B:B45). For example, in a takeover bid, an acquirer may pay a 20% premium

over market price to gain control of the acquiree. The premium is included in goodwill paid for by the acquirer but is not proportionally attributable to non-controlling interests.

Under the second option where non-controlling interests are measured as a proportion of the acquiree's identifiable net assets, non-controlling interests comprise the following two components:

1. Share of book value of identifiable net assets of the subsidiary; and
2. Share of (fair value — book value) of identifiable net assets of the subsidiary at acquisition date.

Non-controlling interests' goodwill is not recognized under the second option under IFRS 3. The second option retains the treatment of non-controlling interests in IFRS 3 (2004).

The fair value basis permitted for the measurement of non-controlling interests at acquisition date brings revised IFRS 3 closer to the *entity theory*. The entity theory upholds consistency in accounting measurements of the assets and liabilities of the combined entity, regardless of who the stakeholders are. The entity theory does not support a fragmented valuation model as embodied in the parent theory, which focuses on information primarily for the shareholders of the parent company. The same accounting policy is applied to determining non-controlling interests' share of net assets as well as that of the group's. Hence, goodwill is recognized in full for the entity and fair value of identifiable assets and liabilities are valued in full to reflect both parent's and non-controlling interests' share. Although the acquisition of the subsidiary is entered into by the parent and not the non-controlling interests, IFRS 3 requires the fair value of the identifiable net assets of the subsidiary at date of acquisition to be recognized in full, as if the non-controlling interests were also a party to the acquisition.

However, the second alternative permitted by IFRS 3 with respect to recognizing non-controlling interests as a proportion of fair value of identifiable net assets and not full fair value diverges from the entity theory. In Chapter 3, we note that the Statement of Financial Accounting Standard (SFAS) 141R *Business Combinations* issued by the Financial Accounting Standards Board (FASB) in the US has chosen to adopt solely the fair value basis in the measurement of non-controlling interests. In permitting a choice, IFRS 3 is still some way from ensuring its objectives of comparability among IFRS-compliant companies and convergence with US GAAP.

Although the entity theory is not without its critics, it provides a conceptual basis to recognize, measure, and present non-controlling interests in a consistent manner. Unless otherwise indicated, the illustrations and end-of-chapter questions apply the fair value basis to accounting for non-controlling interests in line with the entity theory.

Other Applications of the Entity Theory to Non-controlling Interests

The entity theory views all shareholders of the combined entity as equity holders. Under IFRS 10, non-controlling interests are to be presented as a component of equity in the consolidated financial statements. IFRS 10 paragraphs 22 and B94 (Appendix B) state:

> A parent shall present non-controlling interests in the consolidated statement of financial position within equity separately from the equity of the owners of the parent.
>
> An entity shall attribute the profit or loss and each component of other comprehensive income to the owners of the parent and to the non-controlling interests. The entity shall also attribute total comprehensive income to the owners of the parent and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Under the entity theory, the depreciation and amortization of fair value differentials that affect the parent also apply to the non-controlling interests. The chart in Figure 4.3 shows the build-up of non-controlling interests over time, beginning from acquisition date to the end of the current period.

Recognizing Non-controlling Interests at Fair Value on Acquisition Date

IFRS 3 requires the recognition of non-controlling interests at either fair value or a proportion of identifiable net assets as at the date of acquisition. Hence, a consolidation entry is re-enacted each year to credit non-controlling

interests' at acquisition-date amount. In Illustration 4.1, we saw how the investment in subsidiary account is eliminated against share capital and pre-acquisition retained earnings of the subsidiary giving rise to goodwill and fair value differentials. If the parent owns less than 100% of the subsidiary, non-controlling interests have to be recognized. The recognition of non-controlling interests at the date of acquisition is normally integrated with the elimination of investment entry. Under the fair value basis, the entry is as follows:

Dr Share capital of subsidiary
Dr Retained earnings at date of acquisition
Dr Other equity of subsidiary at date of acquisition
Dr Goodwill (acquirer's and non-controlling interests' share)
Dr Identifiable net assets (excess of fair values over book values)
Dr/Cr Deferred tax asset/liability on fair value adjustments
  Cr Identifiable net assets (excess of book values over fair values)
  Cr Investment in subsidiary
  Cr Non-controlling interests (Fair value of non-controlling interests)

Under the alternative basis that recognizes non-controlling interests as a proportion of identifiable net assets, goodwill, and non-controlling interests recognized are generally smaller amounts than as recognized under the fair value basis:

Dr Share capital of subsidiary
Dr Retained earnings at date of acquisition
Dr Other equity of subsidiary at date of acquisition
Dr Goodwill (acquirer's goodwill only)
Dr Identifiable net assets (excess of fair values over book values)
Dr/Cr Deferred tax asset/liability on fair value adjustments
  Cr Identifiable net assets (excess of book values over fair values)
  Cr Investment in subsidiary
  Cr Non-controlling interests (NCI % × Fair value of identifiable net assets)

In Illustration 4.2, we show how the goodwill for non-controlling interests is calculated, if the fair value basis is applied.

ILLUSTRATION 4.2 Determining non-controlling interests' goodwill

The fair value of non-controlling interests that owned 10% of Subsidiary A as at 31 December 20x1 (acquisition date) was $25,000. The financial statements of Subsidiary A at acquisition date are shown below. On that date, Subsidiary A had unrecognized intangible assets that had a fair value of $40,000. Deferred tax liabilities should be recognized on the intangible assets at the tax rate of 20%. Determine non-controlling interests' goodwill as at acquisition date.

Subsidiary A
Statement of Financial Position
As at 31 December 20x1 (acquisition date)

Net assets	$160,000		
Equity:			
Share capital	$140,000		
Retained earnings	20,000		
	$160,000		
Fair value of non-controlling interests			$25,000
Fair value of identifiable net assets:			
Book value of equity		$160,000	
Fair value of intangible assets		40,000	
Deferred tax on intangible assets		(8,000)	
		$192,000	
Non-controlling interests' share of fair value of identifiable net assets			19,200
Non-controlling interests' goodwill			$ 5,800

As with the nature of goodwill, non-controlling interests' goodwill should not include identifiable elements. Non-controlling interests' goodwill is the excess of fair value of non-controlling interests over non-controlling interests' share of fair value of identifiable net assets. The following equation shows the calculation of non-controlling interests' goodwill at acquisition date:

$$\text{Non-controlling interests' goodwill} = \text{Fair value of non-controlling interests} - (\text{Percentage of non-controlling interests} \times \text{Fair value of identifiable net assets})$$

Under the alternative basis, where non-controlling interests are measured as a proportion of identifiable net assets, non-controlling interests' goodwill is zero. The amount to be recognized as non-controlling interests is $19,200 that comprises non-controlling interests' share of identifiable net assets only.

Allocation of the Changes in Equity from the Date of Acquisition to the Beginning of the Current Period

Non-controlling interests have a share of retained earnings and other equity over time. As stated earlier, there is no distinction between pre-acquisition or post-acquisition profits for non-controlling interests. The elimination of investment entry allocates pre-acquisition retained earnings, to non-controlling interests. Another entry, as shown below, is required to allocate the change in retained earnings from the date of acquisition to the beginning of the current period to non-controlling interests. After allocating non-controlling interests' share of both pre- and post-acquisition retained earnings to non-controlling interests, only the parent's share of the post-acquisition retained earnings of a partially-owned subsidiary remains. Group retained earnings comprises parent's retained earnings and post-acquisition retained earnings of subsidiaries attributable to parent's shareholders.

Dr Retained earnings (NCI % × Change in retained earnings from date of acquisition to beginning of current period)

Cr Non-controlling interests

Why is it necessary to debit retained earnings? Since the consolidation worksheet includes the full retained earnings of the subsidiary, this entry is necessary to transfer that portion of the subsidiary's retained earnings that belongs to non-controlling interests to non-controlling interests' equity in the statement of financial position.

Allocation of Current Profit after Tax to Non-controlling Interests

Non-controlling interests are entitled to a share of **current profit after tax** of a subsidiary. The attribution or allocation entry is as follows:

Dr Income to non-controlling interests (income statement)

Cr Non-controlling interests (statement of financial position)

The same attribution principle applies to other comprehensive income. Non-controlling interests are attributed their share of other comprehensive income arising during a period. Other comprehensive income in IAS 1 *Presentation of Financial Statements* refers to revaluation surplus or deficit on property, plant, and equipment and intangible assets, re-measurement gains or losses on defined benefit plans, foreign currency translation reserves on net investments, fair value gains or losses on fair value through other comprehensive income (FVOCI) securities, and gains or losses on cash flow hedging relationships. The attribution entry is as follows:

Dr Other comprehensive income to Non-controlling interests (statement of profit or loss and other comprehensive income)

Cr Non-controlling interests (statement of financial position)

Non-controlling interests are always presented on an *after-tax basis*. Hence, the attribution of profit to non-controlling interests in the income statement is shown below the profit after tax line. Any adjustment to non-controlling interests should be reflected on an after-tax basis (if tax adjustments are required).

The attribution of profit to non-controlling interests is not an expense item and should not be shown above the profit after tax line. The attribution is simply giving to non-controlling interests their share of profit. Without the attribution, the retained earnings of the group would be overstated and the non-controlling interests' share of equity would be understated. An example of the presentation of attribution of profit to non-controlling interests is shown in the annual report extracts of Keppel Corporation Limited below:

page 172

Annual report extract

Consolidated Profit and Loss Account

For the financial year ended 31 December 2018

	Note	2018 $'000	2017 $'000
Revenue	23	**5,964,781**	5,963,773
Materials and subcontract costs		**(4,187,631)**	(3,957,402)
Staff costs	24	**(987,830)**	(1,027,019)
Depreciation and amortisation		**(182,386)**	(212,380)
Impairment loss on financial assets		**95,457**	(130,110)
Other operating income - net		**531,089**	164,184
Operating profit	25	**1,042,566**	801,046
One-off financial penalty & related costs[i]		**–**	(618,722)
Investment income	26	**9,991**	19,871
Interest income	26	**164,260**	137,928
Interest expenses	26	**(198,443)**	(189,227)
Share of results of associated companies	9	**221,518**	290,533
Profit before tax		**1,239,892**	441,429
Taxation	27	**(283,747)**	(244,049)
Profit for the year		**956,145**	197,380
Attributable to:			
Shareholders of the Company		**943,829**	196,025
Non-controlling interests	5	**2,316**	1,355
		956,145	197,380
Earnings per ordinary share	28		
– basic		**52.0 cts**	10.8 cts
– diluted		**51.7 cts**	10.7 cts

[i] One-off financial penalty and related costs arose from Keppel Offshore & Marine's global resolution with criminal authorities in the United States, Brazil and Singapore and related legal, accounting and forensics costs.

Consolidated Statement of Comprehensive Income

For the financial year ended 31 December 2018

	2018 $'000	2017 $'000
Profit for the year	**956,145**	197,380
Items that may be reclassified subsequently to profit and loss account:		
Available-for-sale assets		
– Fair value changes arising during the year	–	1,619
– Realised and transferred to profit and loss account	–	(28,815)
Cash flow hedges		
– Fair value changes arising during the year, net of tax	**(238,794)**	357,211
– Realised and transferred to profit and loss account	**132,017**	(49,852)
Foreign exchange translation		
– Exchange difference arising during the year	**(132,866)**	(220,787)
– Realised and transferred to profit and loss account	**5,574**	(9,537)
Share of other comprehensive income of associated companies		
– Available-for-sale assets	–	719
– Cash flow hedges	**20,031**	(8,384)
– Foreign exchange translation	**(42,821)**	(93,232)
	(256,859)	(51,058)
Items that will not be reclassified subsequently to profit and loss account:		
Financial assets, at FVOCI		
– Fair value changes arising during the year	**(31,566)**	–
Foreign exchange translation		
– Exchange difference arising during the year	**(3,545)**	(17,311)
Share of other comprehensive income of associated companies		
– Financial assets, at FVOCI	**581**	–
	(34,530)	(17,311)
Other comprehensive expense for the year, net of tax	**(291,389)**	(68,369)
Total comprehensive income for the year	**664,756**	129,011
Attributable to:		
Shareholders of the Company	**656,303**	144,491
Non-controlling interests	**8,453**	(15,480)
	664,756	129,011

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Amortization of Fair Value Differentials

Since non-controlling interests are credited with a share of the excess of fair value over book value (or debited with any shortfalls of fair value from book value) of identifiable assets and liabilities as at the date of acquisition, they must also bear the subsequent amortization of these fair value differentials. For example, if a fixed asset of an acquiree is undervalued at acquisition date, the higher depreciation charge subsequent to acquisition reduces the non-controlling shareholders' share of current profit after tax.

Allocation of Dividends to Non-controlling Interests

Dividends declared by a subsidiary offset the dividend income of its parent. However, the offset will not be perfect if non-controlling interests are present. For example, Subsidiary A declares dividends of $1,600,000 to its shareholders. Parent owns 60% of Subsidiary A. In this situation, the allocation of dividends between parent and non-controlling interests, and the consolidation elimination entries are as follows:

$$\begin{aligned}\text{Dividends attributable to non-controlling interests} &= \text{Non-controlling interests \%} \times \text{Dividends declared by subsidiary} \\ &= 40\% \times \$1{,}600{,}000 \\ &= \$640{,}000\end{aligned}$$

$$\begin{aligned}\text{Dividend income}^{2} \text{ recorded by parent} &= \text{Parent's ownership interests \%} \times \text{Dividends declared by subsidiary} \\ &= 60\% \times \$1{,}600{,}000 \\ &= \$960{,}000\end{aligned}$$

The consolidation elimination entry is as follows:

Dr Dividend income (parent)	960,000	
Dr Non-controlling interests (SFP)	640,000	
Cr Dividends declared (subsidiary)		1,600,000

The elimination entry reverses the profit and loss effects of dividends in the consolidated income statement. As the subsidiary is partially owned, dividends declared will not offset dividend income fully. The debit to non-controlling interests in the consolidated statement of financial position (SFP) indicates that non-controlling interests' residual stake in the net assets of the subsidiary has been reduced by the dividends declared. Dividends attributable to non-controlling interests are effectively a repayment of profits by a subsidiary. After elimination, dividends declared by a subsidiary should be a nil figure. The only dividends reported in the consolidated financial statements are those that are declared by the parent company.

Analytical Check on the Non-controlling Interests' Balance

Essentially, non-controlling interests in a subsidiary have a share in the same components that the parent has under the acquisition method if the fair value basis is adopted. However, if non-controlling interests are recognized as a proportion of fair value of identifiable net assets, only two of the three components in Figure 4.4 apply to non-controlling interests. The two components are the share of book value of net assets or shareholders' equity of a subsidiary and the share of the balance of unamortized fair value adjustments. [If non-controlling interests have both present ownership interests (for example, ordinary shares) and potential ownership interests (for example, options), only present ownership interests may be measured as a proportion of identifiable net assets. The potential ownership interests have to be measured at full fair value.]

Since non-controlling interests have a share in shareholders' equity of a subsidiary, any "unrealized profit" included in the subsidiary's retained earnings have to be removed from the retained earnings before allocation to non-controlling interests. Unrealized profit from upstream sale (this is a sale from the subsidiary to the parent, which is further discussed in Chapter 5) is a profit that is not yet earned from the group's perspective, and should be adjusted out from the subsidiary's retained earnings. The profit is also deemed as unrealized from the non-controlling interests' point of view.

Hence, under the fair value basis, we can decompose non-controlling interests as shown in Figure 4.4.

FIGURE 4.4 Components of non-controlling interests

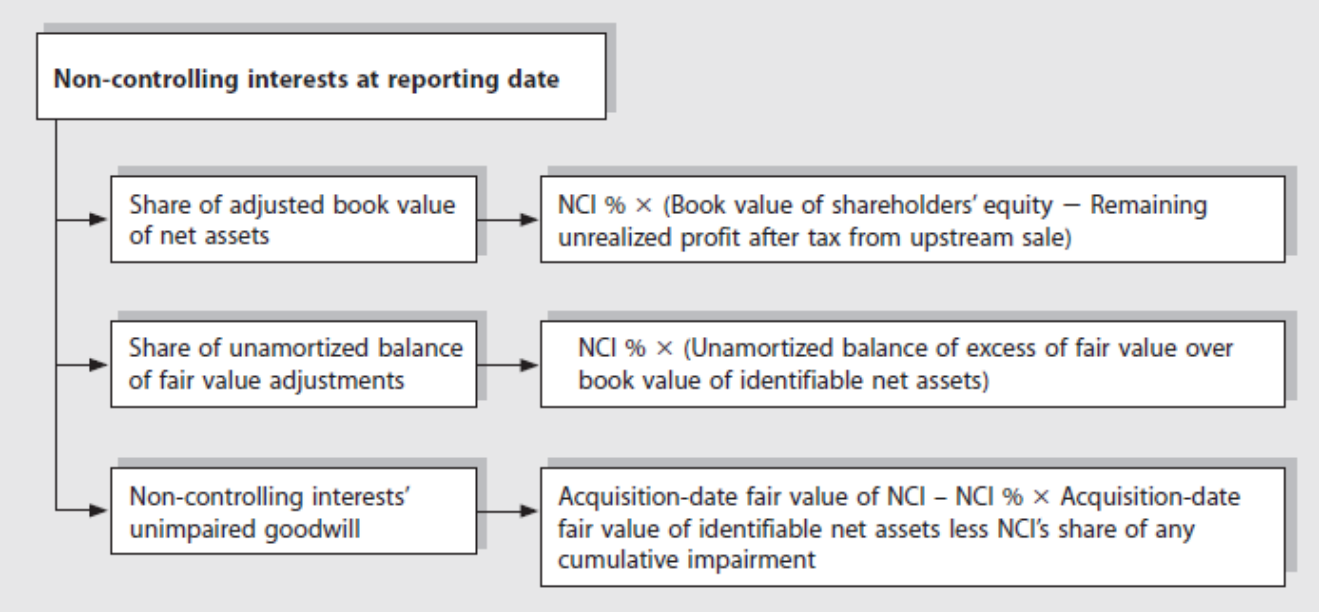

Table 4.1 illustrates the movement in non-controlling interests' balance.

TABLE 4.1 Analytical check on non-controlling interests' balance

Event	Components		
	Book value of identifiable net assets	Fair value less book value of identifiable net assets	Goodwill
Date of acquisition (re-enacted each year)	Share of book value of net assets or equity of subsidiary as at acquisition date	Share of fair value adjustments of identifiable net assets as at acquisition date	Non-controlling interests' goodwill
From acquisition date to beginning of current period (re-enacted each year)	+/– Share of post-acquisition profit / (loss) of subsidiary +/– Share of other changes in equity	–/+ Past cumulative amortization of fair value adjustments of identifiable net assets	– Past cumulative impairment of goodwill
Current period	+/– Share of profit/loss of subsidiary after tax – Share of dividends	–/+ Current amortization of fair value adjustments of identifiable net assets	– Current impairment of goodwill

	+/– Share of other changes in equity		
Non-controlling interests' balance at year-end	= Share of adjusted book value of net assets or equity of subsidiary at end of current period	= Share of unamortized balance of fair value adjustments of identifiable net assets at year-end	= Non-controlling interests unimpaired goodwill

Table 4.1 shows that under the fair value basis, non-controlling interests balances comprise the following three components:

1. Book value of equity,
2. Difference between fair value and book value of identifiable net assets; and
3. Goodwill.

For item (1), non-controlling interests have a share in both the upward and downward movements in changes in book value of equity (that is, the amount that is recognized in the legal entity financial statements of the subsidiary). For items 2 and 3, only extinguishment or impairment of fair value differentials and goodwill are recognized. Extinguishment or impairment of fair value differentials and goodwill will reduce the balance of non-controlling interests. They reflect that the initial net assets attributable to non-controlling interests have declined in carrying amount.

Hence, the balance of non-controlling interests as determined from the sum of consolidation journal entries can be checked with reference to the reporting date balance of the components above.

The equation as shown in Table 4.1 is as follows:

$$\text{Non-controlling interests' balance} = \left(\begin{array}{l} \text{Non-controlling interests' share of} \\ 1.\ \text{book value of net assets or equity of subsidiary,} \\ 2.\ \text{unamortized balance of fair value adjustment; and} \\ 3.\ \text{unimpaired balance of goodwill.} \end{array} \right)$$

The equation shows the relationship between non-controlling interests in the statement of financial position under IFRS 3 and the subsidiary's equity. The equation provides an indirect way of checking the non-controlling interests' balance in the consolidation worksheet. However, the check is not a fool-proof check on accuracy. If one of the components is in error, the check will affirm consistency but not the accuracy of the balance.

Illustrations 4.4 and 4.7 show how the check may be used. Several other illustrations in Chapters 5–7 demonstrate how the analytical check may be used in more complex settings.

Can Non-controlling Interests Be a Debit Balance?

Non-controlling interests' share of losses in a subsidiary may exceed their share of the subsidiary's share capital, retained earnings, and other equity items. IFRS 10 paragraph B94 (Appendix B) requires the non-controlling interests to have a deficit balance under such a circumstance. This is a departure from the previous standard IAS 27 (revised 2003) that requires non-controlling interests to be carried at zero balance, with further losses being borne by the majority shareholders, unless the non-controlling interests have a binding obligation to make further investments to make good the losses, and they have the ability to do so.

There are two views on the merits of permitting non-controlling interests to be a debit balance. One opposing view is that the parent who has control of the subsidiary should bear the responsibility of supporting an insolvent subsidiary through guarantees or additional funding. Although a parent may not have any legal responsibility to support its

subsidiary in insolvency, it is seen by the business community to be giving an implicit guarantee through the preparation of consolidated financial statements (refer to Chapter 2 for the discussion on the underlying rationale for preparing consolidated financial statements). Proponents of this view also support the fact that the parent should absorb the negative equity of non-controlling interests as the latter have no control over the operations of the subsidiary. Using the limited liability argument, one can also say that non-controlling interests stand to lose only their investment in the subsidiary and have no legal or constructive obligation to bear any further losses.

On the other hand, the International Accounting Standards Board (the Board) concluded that non-controlling interests as equity holders participate proportionally in the risks and rewards of a subsidiary and that the parent, as with the non-controlling interests, has no further obligation to contribute assets to a failing subsidiary.[3] We show an example of how non-controlling interests can be a debit balance in Illustration 4.3. This is an extension of Illustration 4.2.

ILLUSTRATION 4.3 Non-controlling interests as a debit balance

Assume the facts as presented in Illustration 4.2. In 20x5, Subsidiary A had become insolvent. The intangible asset and goodwill that arose on acquisition date was fully impaired as at 31 December 20x5. The financial statements of Subsidiary A as at 31 December 20x5 are shown below. Show the balance of non-controlling interests in Subsidiary A as at 31 December 20x5.

page 178

Subsidiary A
Statement of Financial Position
As at 31 December 20x5 (current reporting date)

Net assets	$(100,000)
Equity:	
Share capital	$ 140,000
Retained earnings	(240,000)
	$(100,000)

Although the fair value of non-controlling interests as at acquisition date was a positive amount of $25,000, it had turned into a deficit balance of $10,000 as at current reporting date. Both parent and non-controlling interests will share proportionally in the losses. The parent of Subsidiary A will recognize its share of the negative equity of $90,000 in its consolidated statement of financial position. The consolidated statement of financial position will include an excess of liabilities over assets of $100,000 on the one side and negative non-controlling interests of $10,000 and a loss in retained earnings of $90,000 on the other side.

Comprehensive Example of Accounting for Non-Controlling Interests

Illustration 4.4 shows the re-enacted entries for non-controlling interests in consolidation using the fair value basis for non-controlling interests. The illustration also shows the analytical check of non-controlling interests that substantiates the balance of non-controlling interests to the three components as explained in Table 4.1.

ILLUSTRATION 4.4 Accounting for non-controlling interests

Pluto Co acquired a 60% interest in Saturn Co on 2 January 20x1 when Saturn's share capital and retained earnings were $80,000 and $30,000 respectively. Book values at the date of acquisition were close to fair values. Fair value of non-controlling interests as at the date of acquisition was $75,000. A control premium was paid by Pluto to acquire Saturn. The accounting policy is to recognize non-controlling interests at fair value at acquisition date. The following financial statements relate to Pluto Co and Saturn Co for the year ended 31 December 20x8.

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x8

	Pluto Co	Saturn Co
Operating profit	$160,000	$60,000
Dividend income from Saturn	18,900	0
Net profit before tax	$178,900	$60,000
Tax expense	(48,900)	(18,000)
Net profit after tax	$130,000	$42,000
Retained earnings, 1 January	110,000	38,200
Dividends declared	(100,000)	(31,500)
Retained earnings, 31 December	$140,000	$48,700

Statement of Financial Position
As at 31 December 20x8

	Pluto Co	Saturn Co
Investment in Saturn Co cost	$117,000	$ 0
Other assets	578,000	294,700
Total assets	$695,000	$294,700
Share capital	$300,000	$ 80,000
Retained earnings	140,000	48,700
Long-term liabilities	200,000	130,000
Current liabilities	55,000	36,000
Equity and liabilities	$695,000	$294,700

Required:

1. Show the consolidation journal entries that have to be passed for the year ended 31 December 20x8.
2. Perform an analytical check on the non-controlling interests as at 31 December 20x8.
3. Prepare the consolidation worksheets for the year ended 31 December 20x8.

(Illustration 4A.1 in Appendix 4A shows the answers for 1–3 above prepared under the alternative accounting policy of recognizing non-controlling interests as a proportion of identifiable net assets of subsidiary at acquisition date).

1. Consolidation journal entries that have to be passed for the year ended 31 December 20x8

CJE1: Elimination of investment in Saturn as at date of acquisition

Dr Share capital (Saturn)	80,000	
Dr Opening retained earnings (Saturn)	30,000	
Dr Goodwill	82,000	
Cr Investment in Saturn		117,000
Cr Non-controlling interests		75,000

The amount of non-controlling interests is measured at fair value of $75,000 at acquisition date. Since the book value of identifiable net assets is close to its fair value, we may use the book value of equity ($80,000 of share capital and $30,000 of retained earnings) as a proxy for the fair value of identifiable net assets.

$$\begin{aligned}\text{Goodwill} &= \left(\begin{matrix}\text{Consideration}\\ \text{transferred}\end{matrix} + \begin{matrix}\text{Amount of}\\ \text{non-controlling interests}\end{matrix}\right) - \begin{matrix}\text{Fair value of identifiable}\\ \text{net assets at acquisition date}\end{matrix}\\ &= \$117{,}000 + \$75{,}000 - \$110{,}000\\ &= \$82{,}000\end{aligned}$$

Since there is a control premium paid by Pluto, the goodwill attributable to Pluto and the non-controlling interests are not proportional to each other.

$$\begin{aligned}\text{Goodwill attributable to Pluto} &= \begin{matrix}\text{Consideration}\\ \text{transferred}\end{matrix} - \begin{matrix}\text{Pluto's share of identifiable}\\ \text{net assets at acquisition date}\end{matrix}\\ &= \$117{,}000 - (60\% \times \$110{,}000)\\ &= \$117{,}000 - \$66{,}000\\ &= \$51{,}000\end{aligned}$$

page 180

$$\begin{aligned}\begin{matrix}\text{Goodwill attributable to}\\ \text{non-controlling interests}\end{matrix} &= \begin{matrix}\text{Fair value of}\\ \text{non-controlling interests}\end{matrix} - \begin{matrix}\text{Non-controlling interests' share of}\\ \text{identifiable net assets at acquisition date}\end{matrix}\\ &= \$75{,}000 - (40\% \times \$110{,}000)\\ &= \$75{,}000 - \$44{,}000\\ &= \$31{,}000\end{aligned}$$

CJE2: Allocation of change in retained earnings of Saturn to non-controlling interests from the date of acquisition to beginning of current period

Dr Opening retained earnings (Saturn)	3,280	
Cr Non-controlling interests		3,280
Retained earnings on 1 January 20x8 (beginning of year)		$38,200
Retained earnings on 2 January 20x1 (acquisition date)		30,000
Change in retained earnings		$ 8,200
Non-controlling interests' share at 40%		$ 3,280

CJE3: Allocation of share of current profit after tax of Saturn to non-controlling interests

Dr Income to Non-controlling interests (I/S)	16,800

Cr Non-controlling interests (SFP)		16,800

Non-controlling interests' share of current profit = 40% × $42,000 = $16,800

CJE4: Elimination of dividends declared by Saturn

Dr Dividend income (Pluto) (60% × $31,500)	18,900	
Dr Non-controlling interests (SFP) (40% × $31,500) . . .	12,600	
Cr Dividends declared by Saturn		31,500

Explanatory notes:

CJE1: This journal entry has to be re-enacted each year for as long as Pluto has an investment in Saturn. Recall that consolidation is a combination of the separate legal entity financial statements of Pluto and Saturn. Since the separate financial statements of parent include the investment account, there will be a double-counting of assets if the investment account is added with the individual assets and liabilities of the subsidiary. Non-controlling interests are measured at fair value at acquisition date in accordance with the stated accounting policy. Hence, recognized goodwill of $82,000 includes non-controlling interests' goodwill as at acquisition date.

CJE2: Since CJE1 sets up the non-controlling interests' position as at acquisition date, the share of changes in post-acquisition retained earnings (that is, the difference between the retained earnings from the date of acquisition to the beginning of the year) has to be credited to the non-controlling interests' account. Dividends paid during the post-acquisition period up to 1 January 20x8 would be included in the net change figure. The combined effect of CJE1 and CJE2 reinstates the balance of non-controlling interests as at the beginning of the current period.

A similar entry would be passed if Saturn had cumulative other comprehensive income as at the beginning of the current period. Another consolidation journal entry would allocate share of change in post-acquisition other comprehensive income to non-controlling interests.

CJE3: This entry essentially reduces consolidated profit after tax retained by Pluto's shareholders by allocating non-controlling interests' share to the non-controlling interests' account in the statement of financial position. If a subsidiary is profitable, the entry to the income statement will be a debit entry (that is, an allocation of profit to non-controlling interests); if the subsidiary is loss-making, a credit entry will indicate that part of the loss is borne by the non-controlling interests.

A similar entry would be passed if Saturn had current other comprehensive income. Non-controlling interests would have a share of current other comprehensive income.

CJE4: Non-controlling interests' share of dividends is debited to the non-controlling interests' account in the statement of financial position to show a partial recovery or realization of the cumulative profits attributable to non-controlling interests.

2. Analytical check on the non-controlling interests as at 31 December 20x8

Reconstruct the non-controlling interests account in the statement of financial position:

Non-controlling interests			
Dividends as repayment of profit (CJE4) ...	$12,600	As at date of acquisition (CJE1)	$75,000
		Share of change in retained earnings to beginning of year (CJE2)	3280
Balance at 31 December 20x8	82,480	Share of current profit after tax (CJE3) ...	16,800
	$95,080		$95,080

Analytical check on non-controlling interests:

Saturn's book value of net assets as at 31 December 20x8	$128,700	
Non-controlling interests' share of net assets	$ 51,480	(40% × $128,700)
Non-controlling interests' goodwill	31,000	(refer to CJE1)
Non-controlling interests' balance	$ 82,480	

3. Consolidation worksheets for the year ended 31 December 20x8

Income Statement and Partial Statement of Changes in Equity For Year Ended 31 December 20x8					
			Consolidation adjustments		
	Pluto Co	Saturn Co	Dr	Cr	Consolidated totals
Operating profit	$ 160,000	$ 60,000			$220,000
Dividend income from Saturn	18,900	0	$ 18,900		0
Net profit before tax.....	$ 178,900	$ 60,000			$220,000
Tax expense	(48,900)	(18,000)			(66,900)
Net profit after tax.....	$ 130,000	$ 42,000			$153,100
Profit attributable to non-controlling interests			16,800		(16,800)
Profit attributable to shareholders	$130,000	$ 42,000			$136,300
Retained earnings, 1 January	110,000	38,200	30,000 3,280		114,920
Dividends declared	(100,000)	(31,500)		31,500	(100,000)
Retained earnings, 31 December	$ 140,000	$ 48,700	$ 68,980	$ 31,500	$151,220

Statement of Financial Position As at 31 December 20x8					
			Consolidation adjustments		
	Pluto Co	Saturn Co	Dr	Cr	Consolidated totals
Investment in Saturn, cost	$117,000	$ 0		$117,000	$ 0
Other assets	578,000	294,700			872,700
Goodwill			$ 82,000		82,000
Total assets	$695,000	$294,700	$ 82,000	$117,000	$954,700
Share capital	$300,000	$ 80,000	$ 80,000		$300,000
Retained earnings	140,000	48,700	68,980	$ 31,500	151,220
Non-controlling interests			12,600	75,000	82,480
				3,280	
				16,800	
Long-term liabilities	200,000	130,000			330,000
Current liabilities	55,000	36,000			91,000
Total liabilities and equity	$695,000	$294,700	$161,580	$126,580	$954,700
			$243,580	$243,580	

Explanatory notes:

- The building blocks of the worksheet are the separate financial statements of Pluto and Saturn.
- A debit and credit column is included for consolidation adjustments.
- The consolidated totals are from the summation of the separate financial statement amounts and the consolidation adjustments.
- The total of debit and credit adjustments from the income statement will be transferred to retained earnings in the statement of financial position.
- The total of debit and credit adjustments from the income statement will not be equal; however, the total of debit and credit adjustments must be equal in the statement of financial position.

page 183

ILLUSTRATION 4.5 Presentation of Non-controlling Interests

Consider the presentation of non-controlling interests in the consolidated financial statements of Pluto and Saturn from Illustration 4.4:

Consolidated Income Statement For Year Ended 31 December 20x8	
Net profit before tax	$220,000
Tax expense	(66,900)
Net profit after tax	$153,100
Profit attributable to non-controlling interests	$ 16,800
Profit attributable to parent's shareholders	136,300
	$153,100

Consolidated Statement of Changes in Equity
For Year Ended 31 December 20x8 (extract)

Retained earnings, 1 January	$114,920
Net profit after tax attributable to parent's shareholders	136,300
Dividends declared	(100,000)
Retained earnings, 31 December	$151,220

Statement of Financial Position
As at 31 December 20x8 (condensed)

Other assets	$872,700
Goodwill	82,000
Total assets	$954,700
Share capital	$300,000
Retained earnings	151,220
Parent's shareholders' equity	$451,220
Non-controlling interests	82,480
Total equity	$533,700
Long-term liabilities	$330,000
Current liabilities	91,000
Total liabilities	$421,000
Total liabilities and equity	$954,700

Here are a few noteworthy points with respect to the presentation of non-controlling interests:

1. Consolidated profit after tax of $153,100 is the combined profit of Pluto and Saturn (after eliminating intercompany transactions) that has to be allocated to Pluto's shareholders and the non-controlling interests of Saturn.
2. Non-controlling interests are presented as a separate component of equity in the statement of financial position. Non-controlling interests in the statement of financial position represent the residual interests that the non-controlling shareholders of a partially-owned subsidiary have in the net assets of that subsidiary.
3. Since non-controlling interests are a separate component of equity, the terms "retained earnings" and "share capital" in the consolidated statement of financial position belong wholly to the parent's shareholders.

Illustration 4.6 shows the amortization entries that are required when non-controlling interests are measured at fair value on acquisition date. The amortization entries under the alternative basis when non-controlling interests are measured as a proportion of identifiable net assets are the same. Illustration 4A.2 in Appendix 4A shows the entries prepared under the accounting policy where non-controlling interests have a proportionate share of identifiable net assets at acquisition date.

ILLUSTRATION 4.6 Amortization of fair value differentials

P Co paid a cash consideration of $6,200,000 and issued 1,000,000 of its own shares to acquire 80% ownership interest in S Co on 1 January 20x5. The fair value of P Co's shares at the date of acquisition was $3 per share. The book and fair values of assets, liability and contingent liability, and the remaining useful lives of leased property and in-process research and development (R&D) of S Co as at date of acquisition are as follows:

	Book value	Fair value	Remaining useful life
Leased property . . .	$4,000,000	$5,000,000	20 years
In-process R&D . . .		2,000,000	10 years
Other assets	1,900,000	1,900,000	
Liabilities	(1,200,000)	(1,200,000)	
Contingent liability .		(100,000)	
Net assets	$4,700,000	$7,600,000	
Share capital	$1,000,000		
Retained earnings .	3,700,000		
Shareholders' equity	$4,700,000		

Additional information:

(a) The contingent liability of $100,000 met the recognition criteria in IFRS 3. The contingent liability was recognized as a provision for loss by the acquiree in its legal entity financial statements in December 20x5. The differences between fair value and book value of identifiable net assets above gave rise to a deferred tax liability at a tax rate of 20%.

(b) Fair value of non-controlling interests as at the date of acquisition was $2,300,000, which was proportional to the fair value of consideration transferred by P Co (that is, P Co did not pay a control premium or enjoyed a discount on the acquisition). The fair value of non-controlling interests was recognized as at the date of acquisition.

(c) Net profit after tax of S Co for the year ended 31 December 20x5 was $1,000,000. No dividends were declared during 20x5. Shareholders' equity as at 31 December 20x5 was $5,700,000.

Required:

1. Prepare the consolidation adjustments for P Co for 20x5.
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x5.

Determination of consideration transferred

$$\begin{aligned}\text{Consideration transferred} &= \text{Cash consideration} + \text{Fair value of shares issued} \\ &= \$6{,}200{,}000 + (1{,}000{,}000 \times \$3) \\ &= \$6{,}200{,}000 + \$3{,}000{,}000 \\ &= \$9{,}200{,}000\end{aligned}$$

The consideration transferred comprises the acquirer's interest in the following:

- Book value of identifiable net assets
- Difference between fair value over book value of identifiable net assets:
  - Excess of fair value over book value of the leased property;
  - Fair value of in-process R&D (since this is identifiable and has a reliably measurable fair value, it should be recognized in the business combination);

- Fair value of contingent liability (although not recognized by the acquiree, it meets the criteria in IFRS 3 and has a fair value that is reliably measurable and should be recognized in the business combination); and
- Deferred tax liability (recognized on the fair value adjustments).

- Goodwill (the residual)

1. Consolidation adjustments for P Co in 20x5

CJE1: Elimination of investment in subsidiary as at acquisition date

Dr Share capital	1,000,000			
Dr Opening retained earnings	3,700,000			
Dr Leased property	1,000,000			
Dr In-process R&D	2,000,000			
Dr Goodwill	4,480,000	(Note 2)		
Cr Contingent liability . .			100,000	
Cr Deferred tax liability (net)			580,000	(Note 1)
Cr Investment in S Co . .			9,200,000	
Cr Non-controlling interests			2,300,000	(Note 2)

Note 1:

$$\text{Deferred tax liability on fair value adjustments} = \text{Tax rate} \times \left(\begin{array}{c} \text{Excess of fair value} \\ \text{over book value of} \\ \text{leased property} \end{array} + \begin{array}{c} \text{Fair value of} \\ \text{in-process} \\ \text{R\&D} \end{array} - \begin{array}{c} \text{Fair value of} \\ \text{contingent} \\ \text{liability} \end{array} \right)$$

$$= 20\% \times (\$1{,}000{,}000 + \$2{,}000{,}000 - \$100{,}000)$$
$$= 20\% \times \$2{,}900{,}000$$
$$= \$580{,}000$$

Explanatory note:

The net increase in assets arising from the fair value adjustments of $2,900,000 implies higher future taxable income. Hence, future tax payable on the future taxable income has to be recognized in the form of a deferred tax liability. The deferred tax asset arising from the contingent liability is offset against the deferred tax liabilities. IAS 12 *Income Taxes* requires an entity to offset deferred tax assets and deferred tax liabilities if there is a legal right of set-off of current tax assets and current tax liabilities; and the related income taxes are levied by the same taxation authority on the same taxable entity or different taxable entities that intend to settle on a net basis (paragraph 74).

Note 2:

$$\text{Goodwill} = \text{Consideration transferred} + \text{Amount of non-controlling interests at acquisition date} - \text{Recognized amount of identifiable net assets at acquisition date}$$

$$= \$9{,}200{,}000 + \$2{,}300{,}000 - (\$7{,}600{,}000 - \$580{,}000)$$
$$= \$11{,}500{,}000 - \$7{,}020{,}000$$
$$= \$4{,}480{,}000$$

Since non-controlling interests' fair value is proportional to the fair value of consideration transferred by P Co, the goodwill attributable to non-controlling interests is 20% of entity goodwill of $4,480,000.

CJE2: Depreciation and amortization of excess of fair value over book value for the year ended 31 December 20x5

Dr Depreciation of leased property	50,000	($1 million/20 years)		
Dr Amortization of in-process R&D	200,000	($2 million/10 years)		
Cr Accumulated depreciation				50,000
Cr Accumulated amortization				200,000

CJE3: Reversal of entry relating to provision for loss

Dr Provision for loss			100,000	
Cr Loss expense				100,000

Explanatory note:

Since a contingent liability was already recognized on 1 January 20x5 in the consolidated financial statements, the recognition of a provision by the acquiree in its legal entity financial statements results in double-counting; hence, this reversal entry is necessary. The contingent liability expense should not be recognized as a post-acquisition expense. The effect of the reversal entry is to increase net earnings of the acquiree by $100,000.

CJE4: Tax effects on amortization of fair value adjustments and entry relating to provision for lawsuit

Dr Deferred tax liability (net)			30,000	
Cr Tax expense				30,000

Tax effects are as follows:

Depreciation of excess of fair value over book value of leased property	$ 50,000
Amortization of in-process R&D	200,000
Reversal of loss from contingent liability	(100,000)
Subsequent amortization of fair value adjustments	$150,000
Tax rate	20%

Reduction in tax expense arising from amortization	$ 30,000

Explanatory note:

Since the amortization of fair value adjustments results in a reduction in profit of $150,000, a consequent reduction in tax expense of $30,000 arises. The reduction in tax expense is a reversal of the deferred tax liability that was recognized in CJE1.

CJE5: Allocation of current income to non-controlling interests		
Dr Income to non-controlling interests	176,000	
Cr Non-controlling interests		176,000
Net profit after tax		$1,000,000
Excess depreciation		(50,000)
Excess amortization		(200,000)
Reversal of loss from contingent liability		100,000
Tax effects on fair value adjustments		30,000
Adjusted net profit after tax		$ 880,000
Non-controlling interests' share at 20%		$ 176,000

Explanatory note:

CJE5 allocates income to non-controlling interests. As explained in Table 4.1, non-controlling interests have a share in the extinguishment of the initial fair value differences and in the impairment of goodwill. (If non-controlling interests are recognized as a proportion of identifiable net assets, they will share in only the extinguishment of the initial fair value differences and not the impairment of goodwill). Note that the top line item in CJE5's working is the net profit after tax that represents the increase in the book value of equity of the subsidiary. The other adjustments relate to the extinguishment of the fair value differentials. Non-controlling interests fall in carrying amount when the initial net assets carried at fair value are used, consumed, sold, or depreciated. Overall, non-controlling interests have a share of $176,000 of adjusted profit, which represents the increase in book value and a decrease in the fair value differentials that were initially allocated to non-controlling interests.

2. Analytical check on the balance of non-controlling interests as at 31 December 20x5

First, reconstruct the balance of non-controlling interests as at 31 December 20x5.

Non-controlling interests as at acquisition date (CJE1)	$2,300,000
Income allocated to NCI for 20x5 (CJE5)	176,000
Non-controlling interests as at 31 December 20x5	$2,476,000

Next, reconcile the balance to the three components that non-controlling interests have a share in.

Book value of identifiable net assets as at 31 December 20x5	$ 5,700,000	
Unamortized balance of fair value adjustments as at 31 December 20x5:		
Leased property ($1,000,000 × 19/20)		950,000

In-process R&D ($2,000,000 × 9/10)	1,800,000	
	$ 2,750,000	
After-tax unamortized balance at 80%	2,200,000	
Adjusted net assets of S Co	$7,900,000	
Non-controlling interests at 20%	$ 1,580,000	(ALT 2)
Goodwill attributable to non-controlling interests . .	896,000	
	$ 2,476,000	(ALT 1)

Explanatory notes:

Goodwill attributable to non-controlling interests is included in the balance of non-controlling interests as we are recognizing non-controlling interests at full fair value on acquisition date (we describe this as Alternative 1). If non-controlling interests are recognized as a proportion of identifiable net assets at acquisition date, goodwill will not be included in the final balance of non-controlling interests (we describe this as Alternative 2). The calculation of goodwill attributable to non-controlling interests is shown in the shaded box below. In this illustration, goodwill attributable to non-controlling interests is proportional to goodwill of the acquirer because there is no control premium.

- Control premium is determined by comparing the consideration transferred by the parent and the fair value of non-controlling interests. (It may appear circular, but essentially, the fair value of non-controlling interests should be determined independently, for example, through valuation techniques). If the consideration transferred is proportionally more than the fair value of non-controlling interests, there is a control premium. In the opposite situation, a control discount (which often arises in a fire sale) arises. In this example, consideration transferred is $9.2 million and the fair value of non-controlling interests is $2.3 million. The ratio of the two is 4:1, which is consistent with the ratio of their ownership interests.
- In other illustrations where the fair value of non-controlling interests is not proportional to fair value of consideration transferred by the parent (for example, where the parent pays a control premium to acquire a subsidiary), the goodwill attributable to non-controlling interests must be separately identified in the reconciliation.
- We show here how the goodwill for non-controlling interests (NCI) is calculated:

page 189

Goodwill attributable to non-controlling interests
= Acquisition-date fair value of non-controlling interests — NCI's share of acquisition-date fair value of identifiable net assets less NCI's share of any cumulative impairment of goodwill
= $2,300,000 – 20% × $7,020,000
= $2,300,000 – $1,404,000
= $896,000

Illustration 4.7 explains the consolidation adjustments that are passed in two consecutive years if non-controlling interests are measured at fair value. Illustration 4A.3 in Appendix 4A shows the equivalent entries if the non-controlling interests are measured as the proportion of fair value of identifiable net assets, excluding goodwill.

ILLUSTRATION 4.7 Multi-year consolidation

On 31 December 20x1, P Co purchased 90% of S Co's outstanding ordinary shares from S Co's present shareholders for $8.26 million cash and issuance of one million shares of P Co's ordinary shares, which had a market value of $5 million. The statements of financial position of S Co and P Co at the date of acquisition (also the financial year-end)

are shown below. Assume that all fair value adjustments have tax effects and give rise to either a deferred tax liability or deferred tax asset. However, goodwill impairment loss does not have any tax effects. Fair value of non-controlling interests at acquisition date was $1,400,000. Tax rate was 20% throughout. Assume an accounting policy where the non-controlling interests are recognized at fair value on acquisition date.

	S Co		P Co
	Book value	Fair value	Book value
Assets:			
Land	$ 780,000	$ 1,170,000	$ 1,560,000
Leased buildings – net	5,200,000	6,500,000	10,400,000
Equipment – net	2,600,000	2,210,000	9,100,000
Investment in S Co			13,260,000
Inventories	650,000	780,000	1,170,000
Receivables – net	390,000	390,000	910,000
Other current assets	520,000	520,000	780,000
Cash	260,000	260,000	1,690,000
	$10,400,000	$11,830,000	$38,870,000
Equity and liabilities:			
Ordinary shares	$ 6,500,000		$25,870,000
Retained earnings	1,170,000	$ 8,970,000*	5,590,000
Other liabilities	910,000	910,000	2,600,000
Loan payable	1,820,000	1,820,000	4,810,000
Contingent liabilities		130,000	
	$10,400,000	$11,830,000	$38,870,000

* Fair value of identifiable net assets as at the date of acquisition.

Information on S Co's net profit after tax and dividends declared during 20x2 are as follows:

P Co's dividend income from S	$409,500
S Co's net profit after tax	728,000
S Co's dividends declared	455,000

There were no other changes to equity. In 20x2, the following information applies to undervalued and overvalued assets and goodwill:

(a) Undervalued inventories of $130,000 – sold in 20x2

(b) Undervalued land of $390,000 – still held by S Co; no depreciation

(c) Undervalued buildings of $1,300,000 – useful life 50 years from 1 January 20x2

(d) Overvalued equipment[4] of $390,000 – useful life five years from 1 January 20x2

(e) Contingent liabilities of $130,000 – materialized (paid off) in 20x2 (these liabilities met the recognition criteria of IFRS 3)

(f) Goodwill — impairment loss of $520,000 in 20x2 recognized

In 20x3, the following information applies:

(g) Undervalued land of $390,000 — land was sold in 20x3

(h) Undervalued buildings of $1,300,000 — useful life 50 years from 1 January 20x2

(i) Overvalued equipment of $390,000 — useful life five years from 1 January 20x2

(j) Net profit after tax of S Co for 20x3 — $400,000

(k) No dividends were declared by S Co during 20x3.

(l) Recognize the tax effects of fair value adjustments.

Deferred tax assets should be set-off against deferred tax liabilities of S Co.

Required:

1. Prepare the consolidation adjustments for 20x2.
2. Prepare the consolidation adjustments for 20x3.

Schedule of unamortized excess of fair value over book value

Unamortized excess of fair value over book value	Adjustment in group's statement of financial position on 31 December 20x1	Amortization of excess in group's income statement in 20x2	Impact on non-controlling interest's share of profit after tax
Undervalued inventories	Inventories increased by $130,000	Net profit reduced by $130,000 (higher cost of sales)	NCI's share of profit reduced by $13,000
Undervalued land	Land increased by $390,000	No impact because land is not depreciable	No impact
Undervalued buildings	Buildings increased by $1,300,000	Net profit reduced by $26,000 (higher depreciation of buildings)	NCI's share of profit reduced by $2600
Overvalued equipment	Equipment decreased by $390,000	Net profit increased by $78,000 (lower depreciation of equipment)	NCI's share of profit increased by $7,800
Contingent liabilities	Contingent liabilities increased by $130,000	Net profit increased by $130,000 (contingent expense reduced by $130,000). Refer to explanatory note.	NCI's share of profit increased by $13,000
Deferred tax liability (net)	Deferred tax liability (net) increased by $260,000, that is, 20% of fair value adjustments above ($130,000 + $390,000 + $1,300,000 – $390,000 – $130,000)	Net increase to net profit before tax from the above adjustments = $52,000 Tax expense on the increased profit = 20% × $52,000 = $10,400 Refer to the explanatory notes below on the rationale for the deferred tax entry.	NCI's share of tax on increased profit = 10% × $10,400 = $1,040
Goodwill	Goodwill increased by $5,950,000 Refer to computation	Impairment loss of $520,000 is recognized as an expense	NCI has a share of goodwill impairment loss of $52,000

Computation of goodwill

Consideration transferred	
Cash	$ 8,260,000
Value of new P Co shares issued	5,000,000
	$13,260,000
Fair value of non-controlling interests at acquisition date	1,400,000
	$14,660,000
Less net fair value of identifiable net assets (Note 1)	(8,710,000)
Goodwill (Note 2)	$ 5,950,000

Note 1:

Fair value of net assets of S Co	
Fair value of assets	$11,830,000
Less fair value of liabilities	(2,730,000)
Contingent liabilities	(130,000)
	$ 8,970,000
Fair value adjustments:	
Fair value of identifiable net assets	$ 8,970,000
Book value of identifiable net assets	(7,670,000)
Excess	$ 1,300,000
Deferred tax liability (net) on fair value adjustments	$ (260,000)
After-tax fair value of identifiable net assets	$ 8,710,000

Note 2:

$$\text{Goodwill attributable to parent} = \$13{,}260{,}000 - (90\% \times \$8{,}710{,}000)$$
$$= \$5{,}421{,}000$$

$$\text{Goodwill attributable to non-controlling interests} = \$1{,}400{,}000 - (10\% \times \$8{,}710{,}000)$$
$$= \$529{,}000$$

In this illustration, goodwill attributable to parent and non-controlling interests are not proportional to each other because of a control premium paid by the parent.

1. Consolidation adjustments for 20x2

CJE1: Elimination of investment in S Co as at acquisition date	
Dr Ordinary shares (S Co)	6,500,000

Dr Opening retained earnings (S Co)	1,170,000	
Dr Goodwill	5,950,000	
Dr Inventories	130,000	
Dr Land	390,000	
Dr Buildings – net	1,300,000	
Cr Investment in S Co		13,260,000
Cr Equipment – net		390,000
Cr Contingent liabilities		130,000
Cr Deferred tax liability (net)		260,000
Cr Non-controlling interests		1,400,000

CJE2: Impairment of goodwill and amortization of excess of fair values of identifiable net assets recognized in the income statement (I/S) and statement of financial position (SFP)

Dr Cost of sales (I/S)	130,000	
Dr Depreciation – buildings (I/S)	26,000	
Dr Impairment of goodwill (I/S)	520,000	
Dr Accumulated depreciation – equipment (*SFP*)	78,000	
Dr Contingent liabilities (*SFP*)	130,000	
Dr Tax expense (I/S)	10,400	
Cr Inventories (*SFP*)		130,000
Cr Accumulated depreciation – buildings (*SFP*)		26,000
Cr Goodwill (*SFP*)		520,000
Cr Depreciation – equipment (I/S)		78,000
Cr Contingent liability expense (I/S)		130,000
Cr Deferred tax liability (net) (*SFP*)		10,400

Explanatory note:

What is the rationale for the consolidation adjustment on contingent liabilities? Remember that the contingent liabilities were accrued in the consolidated statement of financial position as at 31 December 20x1, but not in the individual statement of financial position of S Co as at that date. On payment, in 20x2, S Co recorded the following entries in its financial statements:

(a)	Dr Expense	130,000	
	Cr Cash		130,000

However, the group had accrued for such a liability on 31 December 20x1 in the consolidated financial statements. On payment, the entry at the group level should have been:

(b)	Dr Contingent liabilities	130,000	
	Cr Cash		130,000

Since the consolidation worksheets are built upon the separate financial statements of a parent and its subsidiaries, we need to put through a consolidation entry to adjust the effects of entry (a) above to be in line with entry (b).

Hence, the consolidation adjustment reverses out the debit entry to expense and shows the reduction of the contingent liability.

(c)	Dr Contingent liabilities	130,000	
	Cr Expense		130,000

Explanatory note:

What is the rationale for the deferred tax entry? A deferred tax liability was set up as at date of acquisition to recognize the potential increase in future tax payable that will arise when the fair value adjustments are realized. These fair value adjustments are realized when the asset is sold or depreciated.

In the financial statements of S Co, depreciation and cost of sale expense are determined based on book values and not their fair values. Hence, relative to the group's perspective, S's net profit before tax for Year 2 is lower by $52,000 than what it should be.

	Increase/Decrease in pre-tax profit of S
As recorded in S's books:	
Lower cost of sales relating to undervalued inventory	$ 130,000
Lower depreciation charge on buildings	26,000
Higher depreciation charge on equipment	(78,000)
Increase in expense on contingency	(130,000)
Net decrease in net profit before tax	$ (52,000)

Thus, the tax expense recorded by S Co based on book values is lower by $10,400 (20% of $52,000) than is the case if fair values at 31 December 20x1 had been used as a basis to amortize and depreciate the assets. Since the tax expense of S Co is understated from the group's perspective, a consolidation adjustment has to be passed:

Dr Tax expense	10,400	
Cr Deferred tax liability (net)		10,400

The tax expense entry in 20x2 increases the deferred tax liability because the amortization adjustments are income-increasing in 20x2. A reversal of the deferred tax liability arises only from 20x3 onward when the amortization adjustments become income-decreasing. The implicit deferred tax assets are set-off against the deferred tax liabilities since both relate to the same taxable entity and the same taxation authority.

Explanatory note:

Why are the cost of sale, depreciation, and other adjustments to the fair value adjustments not multiplied by the parent's ownership interest? The consolidated net profit after tax relates to the entity as a whole, and is presented before the allocation of the subsidiary's after-tax profit to non-controlling interests. Consolidation entries that show the subsequent amortization of undervalued or overvalued assets or liabilities are adjusted against "net profit before tax"; the related deferred tax adjustments are adjusted against "tax expense." Since consolidated "net profit before tax" and "tax expense" relate to the combined shares of both controlling and non-controlling interests, the

consolidation adjustments to these lines should reflect the total adjustments and not the parent's share of the adjustments. However, after the allocation of profit after tax to non-controlling interests, the profit attributable to shareholders belongs purely to the shareholders of the parent. This final figure enters into the retained earnings' balance. Retained earnings as shown in the consolidated financial statements are attributable wholly to the parent company's shareholders, but consolidated net profit after tax is attributable to both the parent company's shareholders and the non-controlling interests. Hence, any consolidation adjustments to retained earnings must reflect only the parent's share of the adjustments, unlike consolidation adjustments to income statement items.

CJE3: Allocation of non-controlling's share of subsidiary's profits for the year

Dr Income to non-controlling interests (I/S)	24,960	
Cr Non-controlling interests (SFP)		24,960

Workings:

Net profit after tax of S for 20x2	$728,000
Increase in cost of sale of undervalued inventories	(130,000)
Increase in depreciation on undervalued building	(26,000)
Decrease in depreciation on overvalued equipment	78,000
Decrease in expense on earlier recognized contingency	130,000
Increase in tax expense as a result of the above adjustments	(10,400)
Impairment loss on goodwill	(520,000)
Adjusted net profit after tax of S	$249,600
NCI's share of adjusted net profit after tax at 10%	$ 24,960

Explanatory note:

Since the set-up entry recognizes non-controlling interests at fair value, non-controlling interests have a share of entity goodwill and, hence, are exposed to impairment loss on goodwill. IAS 36 *Impairment of Assets* requires the impairment loss to be pro-rated between the parent and non-controlling interests on the same basis as that on which profit or loss is allocated (IAS 36 App C: C6). In other words, the impairment loss is not pro-rated in accordance with the proportion of goodwill recognized by parent and non-controlling interests.

CJE4: Elimination of dividends

Dr Dividend income (I/S)	409,500	
Dr Non-controlling interests (SFP)	45,500	
Cr Dividends declared (I/S)		455,000

Reconciliation of non-controlling interests with net assets of subsidiary

First, reconstruct the non-controlling interests' balance from the consolidation adjustments.

Non-controlling interests at date of acquisition	$1,400,000	(CJE1)
Non-controlling interests' share of current profit after tax	24,960	(CJE3)
Less dividends declared to non-controlling interests	(45,500)	(CJE4)
Non-controlling interests as at 31 December 20x2	$1,379,460	

Next, determine the identifiable net assets or shareholders' equity of S Co and the implicit goodwill attributable to non-controlling interests. Non-controlling interests' balance in the statement of financial position should be equal to the sum of non-controlling interests' share of adjusted identifiable net assets or shareholders' equity of the subsidiary and non-controlling interests' goodwill.

Book value of shareholders' equity as at 31 December 20x2 (Note 1)	$ 7,943,000
Unamortized excess of fair value over book value at 31 December 20x2 (Note 2)	1,081,600
Adjusted identifiable net assets of S Co	$ 9,024,600
Non-controlling interests' share of identifiable net assets	$ 902,460
Non-controlling interests' unimpaired goodwill:	
Goodwill attributable to non-controlling interests	529,000
Impairment loss	(52,000)
	477,000
Non-controlling interests as at 31 December 20x2	$ 1,379,460

Note 1: Book value of shareholders' equity as at 31 December 20x2

Share capital		$6,500,000
Retained earnings:		
As at 1 January 20x2	$1,170,000	
Net profit after tax	728,000	
Dividends declared	(455,000)	
As at 31 December 20x2		1,443,000
Book value of shareholders' equity		$7,943,000

Note 2: Unamortized excess of fair value over book value at 31 December 20x2

Undervalued land	$ 390,000	
Undervalued buildings	1,274,000	($1,300,000 × 49/50)
Overvalued equipment	(312,000)	($390,000 × 4/5)
	$1,352,000	
After-tax balance	$1,081,600	($1,352,000 × 80%)

Undervalued inventories and contingent liabilities have zero unamortized balances as at 31 December 20x2

2. Consolidation adjustments for 20x3

Schedule of unamortized excess of fair value over book value

Unamortized excess of fair value over	Adjustment to be re-enacted	Consolidation adjustment in 20x3	Impact on non-controlling interests

book value

Undervalued inventories	Inventories increased by $130,000	Since inventory was sold in 20x2 (cost of sales increased in 20x2), group retained earnings at beginning 20x3 decreased by (90% × $130,000) or $117,000	NCI's share of opening retained earnings decreased by $13,000
Undervalued land	Land increased by $390,000	Profit on sale of land decreased by $390,000 because of the higher carrying amount of the land	NCI's share of profit decreased by $39,000
Undervalued buildings	Buildings increased by $1,300,000	Depreciation of building for current year increased by $26,000; opening retained earnings reduced by (90% × $26,000) or $23,400 to reflect the group's share of prior year's depreciation adjustment of $26,000	NCI's share of profit reduced by $2,600; NCI's share of opening retained earnings reduced by $2,600
Overvalued equipment	Equipment decreased by $390,000	Depreciation of equipment decreased by $78,000; opening retained earnings increased by (90% × $78,000) or $70,200, which is the group's share of the previous year's adjustment to depreciation	NCI's share of profit increased by $7,800; NCI's share of opening retained earnings increased by $7,800
Contingent liabilities	Contingent liabilities increased by $130,000	Previous year's expense decreased by $130,000. Opening retained earnings increased by (90% × $130,000) or $117,000	NCI's share of opening retained earnings increased by $13,000
Deferred tax liability (net)	Deferred tax liability (net) increased by $260,000	Lower tax expense arose as a result of the above adjustments = 20% × ($390,000 + $26,000 – $78,000) = $67,600 With respect to previous year's effects on deferred tax liability, opening retained earnings decreased by (90% × $10,400) or $9,360.	Because NCI's profit is reduced by $33,800 above, the tax expense would also fall. Hence, NCI's share of profit after tax would increase by 20% × $33,800 = $6,760 Previous year's effects would decrease non-controlling interests by $1,040
Goodwill	Goodwill increased by $5,950,000	Impairment loss of $520,000 in the previous year would reduce opening retained earnings by $468,000 (90% × $520,000)	NCI's share of opening retained earnings reduced by $52,000

CJE1: Re-enactment of the elimination of investment in S Co at acquisition date

Dr Ordinary shares (S Co)	6,500,000	
Dr Opening retained earnings (S Co)	1,170,000	
Dr Goodwill	5,950,000	
Dr Inventories	130,000	
Dr Land	390,000	
Dr Buildings – net	1,300,000	
Cr Investment in S Co		13,260,000
Cr Equipment – net		390,000
Cr Contingent liabilities		130,000
Cr Deferred tax liability (net)		260,000
Cr Non-controlling interests		1,400,000

CJE2: Goodwill impairment losses in 20x2

Dr Opening retained earnings	468,000	
Dr Non-controlling interests	52,000	
Cr Goodwill		520,000

Explanatory note:

Goodwill and goodwill impairment are not shown in the separate financial statements; hence, a consolidation adjustment is necessary to re-enact the entries. As non-controlling interests are measured at fair value at acquisition date, they have to bear a proportion of impairment losses. As goodwill impairment was debited to consolidated profit and loss in the previous year, we have to debit the opening retained earnings and non-controlling interests in the statement of financial position to reflect the prior-year entry.

Why is an adjustment to the "opening" retained earnings required? In the statement of changes in equity, the opening balance of retained earnings has to be adjusted to arrive at the same balance that was reported in the previous consolidated financial statements. (The word "opening" does not need to be inserted, but it is included here to differentiate between past and current profits.)

CJE3: Allocation of post-acquisition retained earnings of S Co to non-controlling interests from date of acquisition to beginning of current period

Dr Opening retained earnings	27,300	
Cr Non-controlling interests		27,300
Retained earnings at beginning of current period (1 January 20x3)		$1,443,000*
Retained earnings at acquisition date (31 December 20x1)		1,170,000
Change in retained earnings		$ 273,000
Non-controlling interests' share at 10%		$ 27,300

* Reconstructed, since there were no changes in retained earnings other than profit and dividends.

CJE4: Prior-year disposal and depreciation of undervalued and overvalued

net assets		
Dr Accumulated depreciation – equipment (SFP)	78,000	
Dr Contingent liabilities (SFP)	130,000	
Cr Inventories (SFP)		130,000
Cr Accumulated depreciation – buildings (SFP) . . .		26,000
Cr Deferred tax liability (net) (SFP)		10,400
Cr Opening retained earnings (Note 1)		37,440
Cr Non-controlling interests (SFP) (Note 1)		4,160

Note 1: Prior-year consolidation adjustments

	Debit/Credit
Cost of sales	$(130,000)
Depreciation of buildings	(26,000)
Depreciation of equipment	78,000
Realization of contingent liability	130,000
Increase in tax expense (net)	(10,400)
Total prior-year consolidation adjustments excluding goodwill impairment	$ 41,600

Adjustment to consolidated opening retained earnings (90% × $41,600) = $37,440
Allocated to non-controlling interests (10% × $41,600) = $4,160

Explanatory note:

We multiply the total prior-year consolidation adjustments by the parent's ownership interest to allocate to consolidated retained earnings because the latter (unlike consolidated profit after tax) belongs solely to the parent's shareholders. Non-controlling interests' share of the subsidiary's retained earnings is included separately in the non-controlling interests' balance. Any adjustment to consolidated retained earnings must relate to the parent's share only as retained earnings in the consolidated statement of financial position belong to the parent's shareholders and not the non-controlling interests.

As with the entry on goodwill impairment, this adjustment is necessary to show that the previous year's consolidated profit and loss were adjusted for the disposal, depreciation, and realization of the fair value adjustments of identifiable assets and the contingent liabilities. Past income effects that need to be re-enacted in consolidation are effected to opening retained earnings. In this adjustment, non-controlling interests have a share of the prior-year consolidation adjustments. Since non-controlling interests are credited with the fair value adjustments at acquisition date, the amortization of the fair value adjustments are debited to non-controlling interests subsequently. Table 4.1 presents the movements that affect non-controlling interests.

CJE5: Current adjustments to undervalued and overvalued assets and liabilities		
Dr Profit on sale of land (I/S)	390,000	
Dr Depreciation – Buildings (I/S)	26,000	
Dr Accumulated depreciation – Equipment (SFP)	78,000	

Dr Deferred tax liability (net) (SFP)	67,600	
Cr Land (SFP)		390,000
Cr Accumulated depreciation – Buildings (SFP) . . .		26,000
Cr Depreciation – Equipment (I/S)		78,000
Cr Tax expense (I/S)		67,600

CJE6: Non-controlling interests' share of subsidiary's profits for the year

Dr Income to non-controlling interests (I/S)	12,960	
Cr Non-controlling interests (SFP)		12,960

Workings:

Net profit after tax of S Co for 20x3	$400,000
Current adjustments:	
Higher cost of sales of undervalued land	(390,000)
Depreciation of undervalued buildings	(26,000)
Depreciation of overvalued equipment	78,000
Related tax on above	67,600
Adjusted net profit after tax of S Co	$129,600
NCI's share of adjusted net profit after tax at 10%	$ 12,960

Reconciliation of non-controlling interests with net assets of subsidiary

Non-controlling interests' balance reconstructed from the consolidation adjustments:

Non-controlling interests at date of acquisition	$1,400,000	(CJE1)	
Non-controlling interests' share of past goodwill impairment .	(52,000)	(CJE2)	
Non-controlling interests' share of post-acquisition retained earnings to beginning of the current year	27,300	(CJE3)	
Non-controlling interests' share of prior years' amortization of fair value adjustments	4,160	(CJE4)	
Non-controlling interests' share of current profit after tax . . .	12,960	(CJE6)	
Non-controlling interests at 31 December 20x3	$1,392,420		
Book value of shareholders' equity as at 31 December 20x3 (Note 1)			$8,343,000
Unamortized excess of fair value over book value at 31 December 20x3 (Note 2)			811,200
Adjusted identifiable net assets of S Co			$9,154,200
Non-controlling interests' share of adjusted identifiable net assets			$ 915,420
Non-controlling interests' goodwill			477,000

Non-controlling interests as at 31 December 20x3		$1,392,420

Note 1: Book value of shareholders' equity as at 31 December 20x3

Share capital		$6,500,000
Retained earnings:		
As at 1 January 20x3	$1,443,000	
Net profit after tax	400,000	
Dividends declared	0	
As at 31 December 20x3		1,843,000
Book value of shareholders' equity		$8,343,000

Note 2: Unamortized excess of fair value over book value at 31 December 20x3

Undervalued buildings	$1,248,000	($1,300,000 × 48/50)
Overvalued equipment	(234,000)	($390,000 × 3/5)
	$1,014,000	
After-tax balance	$ 811,200	($1,014,000 × 80%)

Undervalued inventories and land and contingent liabilities have zero unamortized balances as at 31 December 20x3

Other Components of Non-Controlling Interests

It is not unusual for the acquiree to have equity components other than equity shares that are not owned directly or indirectly by the parent. These equity components may not be present ownership interests that entitle their holders to a proportionate share of the net assets of the entity in the event of liquidation. An example of this is the equity component of a compound financial instrument. Conversely, other components could represent present ownership interests but do not entitle their holders to proportionate share of net assets of the company during liquidation. This could take the form of preference shares for which the holders are entitled only to the amount they had paid on acquisition of the preference shares on liquidation.

Such equity components will fall within the definition of non-controlling interests as IFRS 3 defines non-controlling interests as "the equity in a subsidiary not attributable directly or indirectly to a parent." Hence, they will have to be considered as part of non-controlling interests in the formula discussed above to calculate the goodwill on acquisition.

Paragraph 19 of IFRS 3 stipulates the accounting treatment. In essence, all other components of non-controlling interests that are not present ownership interests and do not entitle their holders to a pro rata share of the entity's net assets in the event of liquidation are measured at fair value at the date of acquisition. The reason why they are measured at fair value (the option of measurement at the proportionate share of the acquiree's identifiable net assets is not extended to such instruments) is because these interests could potentially have been measured at zero balance under Alternative 2 as they do not entitle their holders to the entity's net assets. Consequently, third party economic interests will not be reflected in the acquisition accounting under Alternative 2, and this is contrary to the principles

underpinning IFRS 3. The following table shows a list of examples of non-controlling interests and their corresponding measurement basis.

Acquiree's equity components	Measurement basis under IFRS 3
Ordinary shares (held by NCI)	Proportion of identifiable net assets or at fair value
Preference shares with holders entitled to proportionate share of net assets upon liquidation	Proportion of net identifiable assets at fair value
Preference shares with holders **not** entitled to proportionate share of net assets upon liquidation	Fair value
Equity element of compound financial instruments	Fair value
Options/Warrants	Fair value
Employee share options[5]	Market based measure in accordance with IFRS 2 at acquisition date

Essentially, what the measurement requirement in IFRS 3 paragraph 19 means is that the component of non-controlling interest in the formula to compute goodwill comprises two components, that is, non-controlling interests that are present ownership interests, which entitle their holders to proportionate share in the identifiable net assets and those that are not. Both will have to be taken into consideration in calculating goodwill.

page 202

Goodwill =	Fair value of consideration transferred	+ Amount of non-controlling interests at acquisition date		+ Fair value of acquirer's previously held interest in the acquire	− Recognized net identifiable assets of acquiree measured in accordance with IFRS 3
	= Fair value of consideration transferred	+ NCI that are present ownership interests and entitle holders to a pro rata share of net assets	+ NCI that are **not** present ownership interests and **do not** entitle holders to a pro rata share of net assets	+ Fair value of acquirer's previously held interest in the acquire	− Recognized net identifiable assets of acquiree measured in accordance with IFRS 3
	(Fair value)	**(Choice of proportionate share of identifiable assets or fair value)**	**(Fair value)**	**(Fair value)**	**(Generally fair value)**

Appendix 4B presents a comprehensive illustration to show the accounting effect of the above.

GOODWILL IMPAIRMENT TESTS

IAS 36 *Impairment of Assets* requires goodwill to be reviewed annually for impairment loss. Because goodwill is an integral asset in a business unit, it is not assessed for impairment as a stand-alone asset, but is reviewed for impairment as part of a cash-generating unit. In a "bottom-up" approach, goodwill has to be allocated to each of the acquirer's cash-generating units, or groups of cash-generating units, which are expected to benefit from the synergies of the business combination (IAS 36:80). A cash-generating unit is:

1. The lowest level at which the goodwill is monitored for internal management purposes; and
2. Is not larger than a segment determined under IFRS 8 *Operating Segments.*

If the "carrying amount" of a cash-generating unit is greater than its "recoverable amount," an impairment loss arises. The "carrying amount" is the book value of the net assets of the cash-generating unit. The "recoverable amount" is defined as the higher of fair value less costs to sell off the cash-generating unit and its "value in use." Value in use is the present value of future net cash flows arising from the cash-generating unit.

Hence, the first step is to determine the "carrying amount" of a cash-generating unit. Effectively, each cash-generating unit should have its own statement of financial position, and a "carrying amount" should be determined for the net assets of that cash-generating unit. Because the "carrying amount" is compared with the "recoverable amount" of a cash-generating unit as a whole, the carrying amount must include allocated goodwill that is attributable to both the parent and the non-controlling interests.

As discussed earlier in the chapter, IFRS 3 allows two bases of measurement of non-controlling interests as at acquisition date, that is, either at fair value or as a proportion of the fair value of identifiable net assets of the acquiree. Table 4.2 shows the impact of the basis of measurement on goodwill impairment tests.

page 203

TABLE 4.2 Basis of measurement of non-controlling interests and goodwill impairment

Item	Non-controlling interests at fair value at acquisition date	Non-controlling interests as a proportion of identifiable net assets at acquisition date
Goodwill in consolidated financial statements	Includes non-controlling interests' goodwill	Does not include non-controlling interests' goodwill
Carrying amount of cash-generating unit	Goodwill is allocated to cash-generating unit without further adjustment	Goodwill has to be grossed-up to include non-controlling interests' share Notionally adjusted goodwill = Recognized goodwill/Parent's interest
Impairment loss	Impairment loss is shared between parent and non-controlling interests on same basis on which profit or loss is allocated	Impairment loss is borne only by parent as goodwill for non-controlling interests is not recognized

The next step is to determine the "recoverable amount" of the cash-generating unit. Fair value less costs to sell requires an arm's length measure of the price that would be received to sell the cash-generating unit in an orderly transaction between market participants at the measurement date (refer to IFRS 13 *Fair Value Measurement* for elaboration of the definition). Fair value less costs to sell requires use of market-based inputs or market participants' assumptions in the valuation process. Value in use, on the other hand, uses internal or entity-specific inputs to determine the future cash flows that can be generated from a cash-generating unit. Value in use is likely to be more discretionary as assumptions about future cash flows are required. IAS 36, in an anti-conservative stance, allows the higher of the two metrics to be used to determine "recoverable amount." While fair value less costs to sell may be the more objective metric, it may be impracticable at times to determine this measure in the absence of arm's length

benchmarks. Hence, IAS 36 allows an alternative metric in the form of the value in use to be applied in the goodwill impairment test.

If the carrying amount of a cash-generating unit is greater than its recoverable amount, IAS 36 requires the impairment loss to be first allocated to goodwill, and the balance to other assets in proportion to their individual carrying amounts. Goodwill impairment tests have to be carried out on an annual basis, regardless of whether indications of impairment exist. An impairment loss on goodwill, once made, cannot be reversed if subsequent information reveals that the impairment no longer exists. This prohibition does not apply to most other assets; however, fair value through other comprehensive income securities of an equity nature is also subject to this prohibition. The stringency of this rule is probably due to the difficulty of disentangling the effects of a reversal of past loss events from the creation of new internally generated goodwill. Since IAS 38 *Intangible Assets* prohibits the recognition of internally generated goodwill in the absence of an acquisition event, reversing a goodwill impairment loss may inadvertently result in the recognition of new internally generated goodwill.

Figure 4.5 illustrates the decision process on goodwill impairment.

FIGURE 4.5 Goodwill impairment tests

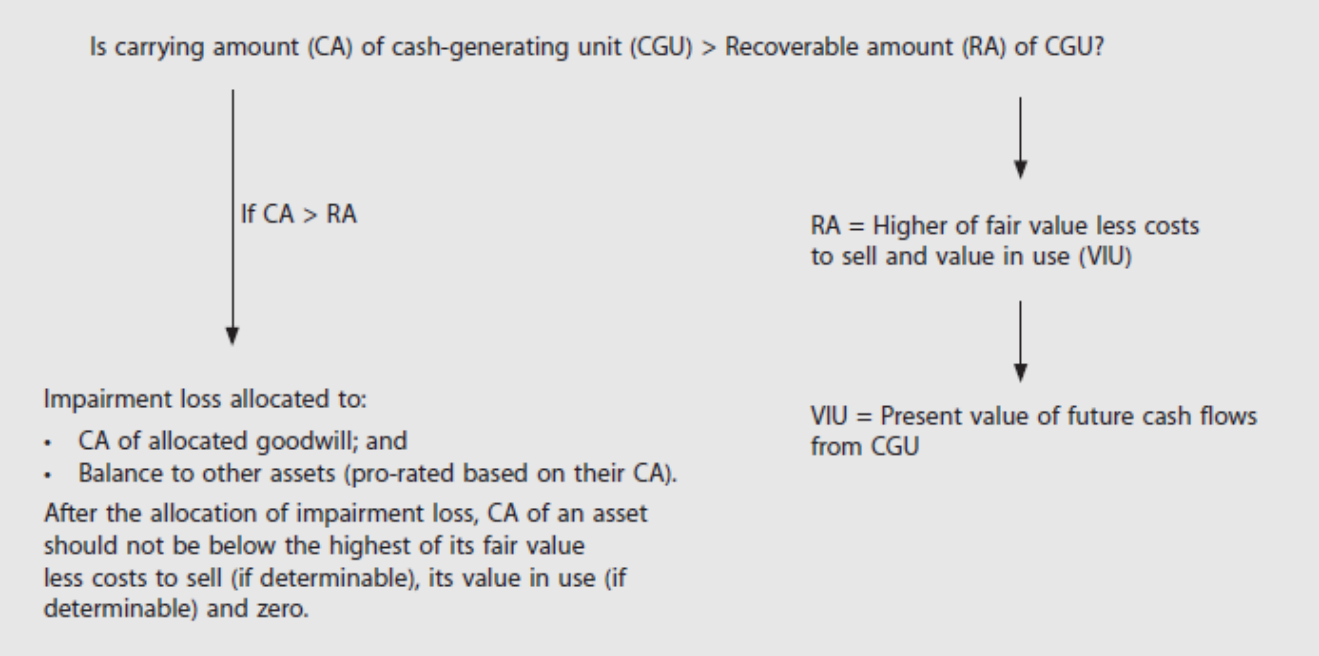

Illustration 4.8 demonstrates the principles of the goodwill impairment tests.

ILLUSTRATION 4.8 Goodwill impairment tests

Company X has 80% ownership in a cash-generating unit (CGU) that had identifiable net assets of $6 million as at 31 December 20x1. The recoverable amount of the CGU as an entity was $5 million as at that date. Determine the impairment loss of the goodwill in the CGU under the following two alternative measurement bases:

(a) Non-controlling interests measured at fair value at acquisition date. Goodwill recognized by the cash-generating unit was $1,200,000.

(b) Non-controlling interests measured as a proportion of fair value of identifiable net assets at acquisition date. Goodwill recognized by the cash-generating unit was $1,000,000.

Alternative (a): Non-controlling interests at acquisition-date fair value

	Goodwill	Identifiable net assets	Total
Carrying amount	$1,200,000	6,000,000	$7,200,000
Recoverable amount			5,000,000
Impairment loss	1,200,000	1,000,000	$2,200,000
Impairment loss borne by parent and non-controlling interests	1,200,000	1,000,000	$2,200,000

Explanatory notes:

- Goodwill has to be allocated to a cash-generating unit to enable a comparison between the carrying amount of all assets of the unit (including goodwill) and the recoverable amount.
- Under alternative (a), goodwill attributable to non-controlling interests is included under recognized goodwill. Hence, no further adjustment is required to goodwill.
- Since carrying amount is greater than recoverable amount by $2,200,000, the impairment loss is deemed to arise from goodwill first; in this example, the entire goodwill amount of $1,200,000 is deemed impaired and the remaining $1,000,000 of impairment loss is deemed to arise from the identifiable net assets.

Alternative (b): Non-controlling interests as a proportion of identifiable net assets

	Goodwill		Identifiable net assets	Total
Carrying amount	$1,000,000		6,000,000	$7,000,000
Non-controlling interests' unrecognized share of goodwill	250,000	(20% × $1 million/0.8)		250,000
Notionally adjusted carrying amount	$1,250,000		6,000,000	$7,250,000
Recoverable amount				5,000,000
Impairment loss	$1,250,000		1,000,000	$2,250,000
Impairment loss recognized . .	1,000,000	(80% × $1.25 million)	1,000,000	$2,000,000

Explanatory note:

Since comparison is done against the carrying amount of assets of a CGU, goodwill is regrossed, under alternative (b), to show the theoretical goodwill as at the date of acquisition. By regrossing recognized goodwill, non-controlling interests' unrecognized share of goodwill is included in the analysis.

In Illustration 4.8, the notionally adjusted carrying amount exceeds the recoverable amount of the cash-generating unit. The resulting impairment loss is deemed to arise from the theoretical goodwill first, and the balance of the loss is then pro-rated among the identifiable net assets of the cash-generating unit in proportion to their carrying amounts. Since the theoretical goodwill is shared by both parent and non-controlling shareholders, the impairment loss is pro-

rated to show the effective impairment loss suffered by the parent company. The amount of $1,000,000, which is the parent's share of total impairment loss, is debited to the consolidated income statement.

CONCLUSION

Two sets of financial statements must be presented in many countries: the investor's separate financial statements and the consolidated financial statements for the group of companies. A "group" is defined in IFRS 10 as comprising a parent and its subsidiaries. As economic boundaries extend through "control" over the financial and operating policies of subsidiaries, another level of reporting is required to show the performance, financial position, and cash flows of the economic entity.

page 206

Although two sets of accounts have to be prepared, only one set of "books" or "ledgers" has to be kept by the legal entity. Instead, consolidation worksheets are prepared at the end of each reporting period to prepare consolidated financial statements. The "consolidation equation" is a summation of the line items of the financial statements of the parent and its subsidiaries, and an incorporation of adjustments to eliminate and adjust intragroup transactions and balances. Hence, consolidation elimination entries and adjustments have to be understood with reference to the original entries that are passed in the individual books of either the parent or the subsidiary. Finally, the transactions and balances in the consolidated financial statements must reflect the group's, and not the legal entity's, perspective.

Consolidation entails an "asset substitution" process whereby the investment in a subsidiary is replaced with identifiable assets and liabilities of the subsidiary and a residual asset called goodwill. The "asset substitution" process is governed by IFRS 3, which requires the use of the acquisition method to allocate the consideration transferred. Under the acquisition method, the acquirer is deemed to have obtained control of all the assets and liabilities of the acquiree. The acquisition date is a critical economic event that signifies an exchange of economic resources between the acquirer and the former owners. Hence, the use of fair values is applied to recognize the assets and liabilities as at the date of acquisition. Further, unrecognized intangible assets and contingent liabilities are also recognized if they meet the recognition criteria in IFRS 3. The requirements in IFRS 3 indicate a shift toward the entity theory of consolidation whereby a consistent treatment is applied to reflect the interests of both controlling and non-controlling shareholders. Non-controlling interests are also included as a component in equity. The methodology of applying the specific principles of IFRS 3 with respect to the acquisition method and accounting for non-controlling interests in multiple periods are illustrated in this chapter.

page 207

APPENDIX 4A

Illustrations of Non-controlling Interests Measured as a Proportion of Acquisition-date Identifiable Net Assets

ILLUSTRATION 4A.1

Refer to the question in Illustration 4.4. If we assume that the accounting policy of the acquirer is to recognize non-controlling interests as a proportion of the recognized amount of the identifiable net assets of the acquiree, the answers to the question in Illustration 4.4 will be as follows:

1. Consolidation journal entries that have to be passed for the year ended 31 December 20x8

CJE1: Elimination of investment in Saturn as at date of acquisition		
Dr Share capital (Saturn)	80,000	
Dr Opening retained earnings (Saturn)	30,000	
Dr Goodwill	51,000	
Cr Investment in Saturn		117,000
Cr Non-controlling interests		44,000

Under the alternative accounting policy, the amount of non-controlling interests is measured as a proportion of the recognized amount of identifiable net assets at acquisition date. In this example, the book value of $110,000 (the shareholders' equity at acquisition date) approximates fair value of identifiable net assets at acquisition date.

Hence, non-controlling interests = 40% × $110,000 = $44,000

$$\text{Goodwill} = \left(\begin{matrix}\text{Consideration}\\ \text{transferred}\end{matrix} + \begin{matrix}\text{Amount of}\\ \text{non-controlling interests}\end{matrix}\right) - \begin{matrix}\text{Recognized amount of identifiable}\\ \text{net assets at acquisition date}\end{matrix}$$

$$= \$117{,}000 + \$44{,}000 - \$110{,}000$$

$$= \$51{,}000$$

Other consolidation adjusting entries in Illustration 4.4 apply and are not repeated here.

2. Analytical check on the non-controlling interests as at 31 December 20x8

Reconstruct the non-controlling interests account in the statement of financial position:

Non-controlling interests

Dividends as repayment of profit (CJE4) ...	$12,600	As at date of acquisition (CJE1)	$44,000
		Share of change in retained earnings to beginning of year (CJE2)	3,280
Balance at 31 December 20x8	51,480	Share of current profit after tax (CJE3)	16,800
	$64,080		$64,080

Analytical check on non-controlling interests:	
Saturn's book value of net assets as at 31 December 20x8	$128,700
Non-controlling interests' share of net assets at 40%	51,480

Under the alternative accounting policy, non-controlling interests do not have a share of the entity's goodwill.

ILLUSTRATION 4A.2

Refer to the question in Illustration 4.6. If we assume that the accounting policy of the acquirer is to recognize non-controlling interests as a proportion of the recognized amount of the identifiable net assets of the acquiree, the answers to the question in Illustration 4.6 will be as follows:

1. Consolidated adjustments for 20x5

CJE1: Elimination of investment in subsidiary as at acquisition date

Dr Share capital	1,000,000			
Dr Opening retained earnings	3,700,000			
Dr Leased property	1,000,000			
Dr In-process R&D	2,000,000			
Dr Goodwill	3,584,000	(Note 3)		
Cr Contingent liabilities .			100,000	
Cr Deferred tax liability (net)			580,000	(Note 1)
Cr Investment in S Co . .			9,200,000	
Cr Non-controlling interests			1,404,000	(Note 2)

Note 1:

$$\text{Deferred tax liability on fair value adjustments} = \text{Tax rate} \times \left(\text{Excess of fair value over book value of leased property} + \text{Fair value of in-process R\&D} - \text{Fair value of contingent liabilities} \right)$$

$$= 20\% \times (\$1{,}000{,}000 + \$2{,}000{,}000 - \$100{,}000)$$
$$= 20\% \times \$2{,}900{,}000$$
$$= \$580{,}000$$

Note 2: Non-controlling interests measured as a proportion of identifiable net assets at acquisition date

Fair value of identifiable assets and liabilities	$7,600,000
Deferred tax liability on fair value adjustments	(580,000)
	$7,020,000
Non-controlling interests' share at 20%	$1,404,000

Note 3:

$$\text{Goodwill} = \left(\begin{matrix}\text{Consideration}\\ \text{transferred}\end{matrix} + \begin{matrix}\text{Amount of non-controlling}\\ \text{interests at acquisition date}\end{matrix}\right) - \begin{matrix}\text{Recognized amount of identifiable}\\ \text{net assets at acquisition date}\end{matrix}$$

$$= \$9{,}200{,}000 + \$1{,}404{,}000 - (\$7{,}600{,}000 - \$580{,}000)$$
$$= \$10{,}604{,}000 - \$7{,}020{,}000$$
$$= \$3{,}584{,}000$$

Other consolidation adjusting entries in Illustration 4.6 apply and are not repeated here.

2. Analytical check on non-controlling interests as at 31 December 20x5

First, reconstruct the balance of non-controlling interests as at 31 December 20x5.

Non-controlling interests as at acquisition date	$1,404,000
Income allocated to NCI for 20x5	176,000
Non-controlling interests as at 31 December 20x5	$1,580,000

Next, reconcile the balance to the two components (excluding goodwill) that non-controlling interests have a share in.

Book value of identifiable net assets as at 31 December 20x5		$5,700,000
After-tax unamortized balance of fair value adjustments as at 31 December 20x5:		
Leased property ($1,000,000 × 19/20)	950,000	
In-process R&D ($2,000,000 × 9/10)	1,800,000	
	$2,750,000	
After-tax balance at 80%		2,200,000
Adjusted net assets of S Co		$7,900,000
Non-controlling interests at 20%		$1,580,000

ILLUSTRATION 4A.3

Refer to the question in Illustration 4.7. The solutions below show the consolidation adjustments and analytical check on non-controlling interests assuming the accounting policy of measuring non-controlling interests as a proportion of identifiable net assets at acquisition date. Explanatory notes are included in Illustration 4.7 with the exception of explanations that apply to this accounting policy. Impairment loss recognized on consolidation is $468,000, which relates to the parent's share only.

Computation of goodwill

Consideration transferred:	
Cash	$ 8,260,000
Value of new P Co shares issued	5,000,000
	$13,260,000

Amount of non-controlling interests at acquisition date (Note 2)	871,000
	$14,131,000
Less net fair value of identifiable net assets (Note 1)	(8,710,000)
Goodwill attributable to parent's share	$ 5,421,000

Note 1:

Fair value of net assets of S Co:	
Fair value of assets	$11,830,000
Less fair value of liabilities	(2,730,000)
Contingent liabilities	(130,000)
	$ 8,970,000
Fair value adjustments:	
Fair value of identifiable net asset	$ 8,970,000
Book value of identifiable net assets	(7,670,000)
Excess	$ 1,300,000
Deferred tax liability (net) on fair value adjustments	$ (260,000)
After-tax fair value of identifiable net assets	$ 8,710,000

Note 2:

Non-controlling interests as a proportion of after-tax fair value of identifiable net assets
= 10% × $8,710,000
= $871,000

1. Consolidation adjustments for 20x2

CJE1: Elimination of investment in S Co as at acquisition date

Dr Ordinary shares (S Co)	6,500,000	
Dr Opening retained earnings (S Co)	1,170,000	
Dr Goodwill	5,421,000	
Dr Inventories	130,000	
Dr Land	390,000	
Dr Buildings – net	1,300,000	
Cr Investment in S Co		13,260,000
Cr Equipment – net		390,000
Cr Contingent liabilities		130,000
Cr Deferred tax liability (net)		260,000
Cr Non-controlling interests		871,000

Explanatory note:

Goodwill recognized on consolidation purely relates to the parent's share. Non-controlling interests are measured as a proportion of identifiable net assets and goodwill attributable to non-controlling interests' share is not recognized.

CJE2: Impairment of goodwill and amortization of excess of fair values of identifiable net assets recognized in the income statement (I/S) and statement of financial position (SFP)

Dr Cost of sales (I/S)	130,000	
Dr Depreciation – buildings (I/S)	26,000	
Dr Impairment of goodwill (I/S)	468,000	
Dr Accumulated depreciation – equipment (SFP)	78,000	
Dr Contingent liabilities (SFP)	130,000	
Dr Tax expense (I/S)	10,400	
Cr Inventories (SFP)		130,000
Cr Accumulated depreciation – buildings (SFP)		26,000
Cr Goodwill (SFP)		468,000
Cr Depreciation – equipment (I/S)		78,000
Cr Contingent liability expense (I/S)		130,000
Cr Deferred tax liability (net) (SFP)		10,400

CJE3: Allocation of non-controlling's share of subsidiary's profits for the year

Dr Income to non-controlling interests (I/S)	76,960	
Cr Non-controlling interests (SFP)		76,960

Workings:

Net profit after tax of S Co for 20x2	$728,000
Increase in cost of sale of undervalued inventories	(130,000)
Increase in depreciation on undervalued building	(26,000)
Decrease in depreciation on overvalued equipment	78,000
Decrease in expense on earlier recognized contingency	130,000
Increase in tax expense as a result of the above adjustments	(10,400)
Adjusted net profit after tax of S Co	$769,600
NCI's share of adjusted net profit after tax at 10%	$ 76,960

Explanatory note:

Since non-controlling interests' share of goodwill is not recognized, no adjustment is required for the impairment loss on goodwill.

Other consolidation adjusting entries in Illustration 4.7 apply and are not repeated here.

Reconciliation of non-controlling interests with net assets of subsidiary

First, reconstruct the non-controlling interests' balance from the consolidation adjustments.

Non-controlling interests at date of acquisition	$871,000	(CJE1)

Non-controlling interests' share of current profit after tax	76,960	(CJE3)
Less dividends declared to non-controlling interests . .	(45,500)	(CJE4)
Non-controlling interests as at 31 December 20x2 . . .	$902,460	

Next, determine the net assets or shareholders' equity of S Co. Non-controlling interests' balance in the statement of financial position should be equal to non-controlling interests' share of adjusted net assets or shareholders' equity of the subsidiary.

Book value of shareholders' equity as at 31 December 20x2 (Note 1)	$7,943,000
Unamortized excess of fair value over book value at 31 December 20x2 (Note 2)	1,081,600
Adjusted shareholders' equity of S Co	$9,024,600
Non-controlling interests as at 31 December 20x2	$ 902,460

Note 1: Book value of shareholders' equity as at 31 December 20x2

Share capital		$6,500,000
Retained earnings:		
As at 1 January 20x2	$1,170,000	
Net profit after tax	728,000	
Dividends declared	(455,000)	
As at 31 December 20x2		1,443,000
Book value of shareholders' equity		$7,943,000

Note 2: Unamortized excess of fair value over book value at 31 December 20x2

Undervalued land	$ 390,000	
Undervalued buildings	1,274,000	($1,300,000 × 49/50)
Overvalued equipment	(312,000)	($390,000 × 4/5)
	$1,352,000	
After-tax balance	$1,081,600	($1,352,000 × 80%)

Undervalued inventories and contingent liabilities have a zero unamortized balance as at 31 December 20x2

2. Consolidation adjustments for 20x3

CJE1: Re-enactment of the elimination of investment in S Co as at acquisition date

Dr Ordinary shares	6,500,000
Dr Opening retained earnings	1,170,000
Dr Goodwill	5,421,000
Dr Inventories	130,000

Dr Land	390,000	
Dr Buildings – net	1,300,000	
Cr Investment in S		13,260,000
Cr Equipment – net		390,000
Cr Contingent liabilities		130,000
Cr Deferred tax liability (net)		260,000
Cr Non-controlling interests		871,000

CJE2: Goodwill impairment losses in 20x2

Dr Opening retained earnings	468,000	
Cr Goodwill		468,000

Explanatory note:

Since goodwill is a parent asset, impairment losses are not shared with non-controlling interests. As goodwill impairment was debited to consolidated income statement in the previous year, we have to debit the opening retained earnings to reflect the prior-year consolidation entry.

Other consolidation adjusting entries in Illustration 4.7 apply and are not repeated here.

Reconciliation of non-controlling interests with net assets of subsidiary

Non-controlling interests' balance reconstructed from the consolidation adjustments:

Non-controlling interests at date of acquisition	$ 871,000	(CJE1)	
Non-controlling interests' share of post-acquisition retained earnings to beginning of the current year	27,300	(CJE3)	
Non-controlling interests' share of prior years' amortization of fair value adjustments	4,160	(CJE4)	
Non-controlling interests' share of current profit after tax	12,960	(CJE6)	
Non-controlling interests at 31 December 20x3	$ 915,420		
Book value of shareholders' equity (Note 1)			$8,343,000
Unamortized excess of fair value over book value at 31 December 20x3 (Note 2)			811,200
Adjusted shareholders' equity of S Co			$9,154,200
Non-controlling interests' share			$915,420

Note 1: Book value of shareholders' equity as at 31 December 20x3

Share capital		$6,500,000
Retained earnings:		
As at 1 January 20x3	$1,443,000	
Net profit after tax	400,000	
Dividends declared	0	

As at 31 December 20x3	1,843,000
Book value of shareholders' equity	$8,343,000

Note 2: Unamortized excess of fair value over book value at 31 December 20x3

Undervalued buildings	$1,248,000	($1,300,000 × 48/50)
Overvalued equipment	(234,000)	($390,000 × 3/5)
	$1,014,000	
After-tax balance	$ 811,200	($1,014,000 × 80%)

(Undervalued inventories and land and contingent liabilities have a zero unamortized balance as at 31 December 20x3.)

APPENDIX 4B

Accounting for Other Components of Non-Controlling Interests

ILLUSTRATION 4B.1

On 1 Jan 20x1, P Co purchases all the 400,000 ordinary shares in S Co. The purchase consideration is $2,500,000 in cash. Net assets of S Co as at 1 Jan 20x1 amounted to $711,000. The fair value of the net identifiable assets as at 1 Jan 20x1 is $800,000. Tax effects are ignored for this illustration.

At the date of acquisition, S Co's 1,000 preference shares (with nominal value of $1 each) are classified as equity in accordance with IAS 32 *Financial Instruments: Presentation*. The preference shares do not carry any voting rights and will provide their holders a right to preferred dividends, which ranks higher than the payment of any dividend to ordinary shareholders. Upon liquidation, the preference shareholders are only entitled to receive the amount of $1 from the assets available for distribution in priority to the ordinary shareholders. They are not entitled to a proportionate share of the net assets of S Co on liquidation. The fair value of these preference shares at the date of acquisition is $2,000.

During the year, S Co has also issued share options to its employees. As at 1 Jan 20x1, two tranches of share options that has been issued and the carrying value in the share option reserve in equity amounted to $70,000. Tranche 1 that has a carrying value of $20,000 calculated in accordance with IFRS 2 *Share-Based Payment* has vested in the employees. Tranche 2 that has a carrying value of $50,000 has not vested in the employees as at the date of acquisition. The vesting period for Tranche 2 is two years and as of 1 Jan 20x1, the employees have completed one year out of the two-year vesting period. The market-based measure of the share option calculated in accordance with IFRS 2, assuming the acquisition date is the grant date, amounts to approximately $56,000. Both tranches of share

options do not expire on acquisition of S Co by P Co and P Co does not replace them on acquisition. There are also no changes to the terms to the share options.

During the year, S Co has also issued a convertible loan to third parties. The equity conversion option with carrying amount of $40,000 meets the criteria for equity classification and has been recognized as part of equity in the books of S Co. The fair value of the equity conversion option as at the date of acquisition of 1 Jan 20x1 amounted to $48,000.

Analysis for components of non-controlling interests

The preference shares, employee share options, and equity conversion option meet the definition of non-controlling interests in S Co as they represent equity in a subsidiary not attributable directly or indirectly to a P Co.

Analysis for preference shares

The preference shares do not carry equal rights and ranking of the ordinary shares issued by the Company. The preference shareholders do not carry voting rights. They are given priority in terms of a preferred dividend over the payment of any dividend to the ordinary shareholders and the holders are only entitled to only the nominal amount paid for the preference shares upon liquidation of S Co. Accordingly, they do not represent present ownerships interests that entitle their holders to a proportionate share of net assets upon liquidation and accordingly, the option to measure them at fair value or at their proportionate share in S Co's recognized amount of identifiable net assets is not available. IFRS 3 paragraph 19 requires them to be measured at fair value at the date of acquisition, which is $2,000.

Analysis for employee share option

Tranche 1 – vested by the date of acquisition

P Co does not replace the shares held by the employees of S Co on acquisition, and under the terms and conditions, the share options held by the employees do not expire on acquisition of S Co by P Co. The share options, while vested in the employees, do not represent present ownership interests that entitle their holders to a proportionate share of net assets upon liquidation, as the employees have not exercised their options to acquire the ordinary shares in the S Co as at the date of acquisition. Paragraph B62A of IFRS 3 requires these non-controlling interests that relate to the vested share options to be measured at their market-based measure in accordance with IFRS 2, which is $20,000.

Tranche 2 – unvested by the date of acquisition

Similarly, P Co does not replace the shares held by the employees of S Co on acquisition, and under the terms and conditions, the share options held by the employees do not expire on acquisition of S Co by P Co. The share options also do not represent present ownership interests that entitle their holders to a proportionate share of net assets upon liquidation as the share options have not vested, and accordingly, employees cannot exercise their options to acquire the ordinary shares in the S Co.

The difference between Tranches 1 and 2 lies in that the share options in Tranche 2 are not vested by the date of acquisition. As a result, the measurement basis differs. Specifically, Paragraphs B62A and B62B of IFRS 3 require these options to be measured at their market-based measure as if the acquisition date were the grant date, which in this case is $56,000. The amount allocated to the non-controlling interest relating to the share options in Tranche 2 is based on the ratio of the portion of the vesting period completed to the greater of the total vesting period and the original vesting period of the share-based payment transaction. Hence, in this case, the amount allocated to the non-controlling interest is $28,000 ($56,000 × 1 year/2years). The balance of $28,000 is allocated to post-combination service, that is, part of the $2,500,000 consideration transferred is deemed to be payment for this post-combination service. Effectively, the purchase consideration for the acquisition is $2,472,000 ($2,500,000 − $28,000).

Analysis for equity conversion option

The equity conversion option that are held by the external parties, that is, owners of the convertible loan do not represent present ownership interests, which entitle their holder to a proportionate share of net assets upon liquidation. The options have yet to be exercised by the holders as at the date of acquisition in exchange for ordinary shares. Accordingly, IFRS 3 paragraph 19 requires them to be measured at fair value of $48,000 at the date of acquisition.

page 216

Calculation of fair value uplift on acquisition (excess of fair value over book value of identifiable net assets)

$$\begin{aligned}\text{Fair value uplift on acquisition} &= \$800{,}000 - \$711{,}000\\ &= \$89{,}000\end{aligned}$$

Calculation of goodwill

$$\begin{aligned}\text{Consideration transferred} &= \$2{,}500{,}000 - \$28{,}000 \text{ (being payment for post-combination employee service)}\\ &= \$2{,}472{,}000\end{aligned}$$

$$\begin{aligned}\text{Goodwill} &= \text{Fair value of consideration transferred} + \text{Amount of non-controlling interests at acquisition date} - \text{Recognized net identifiable assets of acquiree measured in accordance with IFRS 3}\\ &= \$2{,}472{,}000 \quad \left[\begin{array}{l}+\ \$2{,}000 + \$20{,}000 + \$28{,}000\\ +\ \$48{,}000\end{array}\right] - \$800{,}000\\ &= \$1{,}770{,}000\end{aligned}$$

Preparation of the consolidation journal entries:

Dr Share capital and other reserves	711,000	
Dr Net identifiable assets (Excess of fair value over NBV)	89,000	
Dr Goodwill	1,770,000	
Dr Staff costs – P/L	28,000	
Cr Investment in subsidiary		2,500,000
Cr NCI - Preference shares		2,000
Cr NCI - Share option reserve		48,000
Cr NCI - Equity component of convertible loan		48,000

(Being elimination of share capital and investment account.)

Explanatory note:

Included in the debit entry for share capital and other reserves are balances recorded in the books of the subsidiary for preference shares, share option reserve, and equity component of convertible loan. These amounts recorded in the subsidiary's books are eliminated so that separate credit entries can be made to record the fair values of these items in the consolidated financial statements.

page 217

CONCEPT QUESTIONS

State True or False and the reasons for your response.

CQ4.1 The book value of shares issued in exchange for control rights should be used as the basis of measuring the initial cost.

CQ4.2 Goodwill is the difference between consideration transferred and the share of fair value of the net assets of a subsidiary.

CQ4.3 Goodwill impairment losses in previous years will have to be credited to opening retained earnings in the consolidation workpapers.

CQ4.4 A group may comprise a parent, its subsidiaries, and the subsidiaries of its subsidiaries.

CQ4.5 The consolidation adjustment to eliminate the parent's investment and the subsidiary's equity at the date of acquisition is passed once in the first year of acquisition and not subsequently.

CQ4.6 The adjustment in (5) above, that is, the elimination entry as at the date of acquisition is an "asset substitution" entry. It transforms the investment asset into goodwill and the fair value of identifiable assets and liabilities of the subsidiary.

CQ4.7 Non-controlling interests' share of a subsidiary's retained earnings from the date of acquisition to the beginning of the current period will result in a debit entry to non-controlling interests and a credit entry to retained earnings.

CQ4.8 Non-controlling interests of profitable subsidiaries result in a credit item in the income statement and a debit balance in the statement of financial position.

CQ4.9 Dividends declared by a group will include dividends declared by the parent and dividends declared by a subsidiary to its non-controlling interests.

CQ4.10 It is possible for a group to show a consolidated net profit after tax that is smaller than the consolidated profit retained by the group.

CQ4.11 Equity components, which are not present ownership interests and do not entitle their holders to a pro-rata share of net assets during liquidation, do not qualify as non-controlling interests under IFRS 3.

CQ4.12 Equity components, which are not present ownership interests and do not entitle their holders to a pro-rata share of net assets, are measured at nil balance at the date of acquisition.

RESEARCH QUESTIONS

RQ4.1 Accounting choices on accounting for non-controlling interests

IFRS 3 *Business Combinations* allows a choice on the basis of measurement for non-controlling interests. For each acquisition, the acquirer may choose to measure non-controlling interests on acquisition date at either fair value or as a proportion of identifiable net assets. The basis to measure non-controlling interests as a proportion of identifiable net assets retains the accounting treatment of the previous standard IAS 22 *Business Combinations*. This accounting choice puts IFRS 3 at variance with US GAAP.

Required:

1. Choose a sample of any five companies that applies IFRS 3 *Business Combinations* and note the basis of measurement for non-controlling interests for each of the five companies.
2. Explain the directional impact of each basis on the following measures:
   (a) Total assets
   (b) Total equity
   (c) Net profit after tax
   (d) Return on equity
   (e) Debt/Equity ratio
   (f) Sales/Assets ratio
3. Choose one of the companies that you had chosen in Question 1. Assuming that you are a shareholder or a potential investor of that company, which basis of measurement would provide you with the information that you require? Explain.
4. Choose one of the companies that you had chosen in Question 1. Assuming that you are a consultant to that company and ignoring their existing choice, advise that company on the choice of accounting basis.

RQ4.2 Debit balance of non-controlling interests

IFRS 10 *Consolidated Financial Statements* requires the allocation of profit to non-controlling interests even if the allocation would result in a debit balance of non-controlling interests. This requirement is different from IAS 27 (2003) *Consolidated and Separate Financial Statements*, which requires the majority interests to absorb the losses that exceed the then "minority interests." IAS 27 (2003) does permit an exception: if the "minority interests" have a binding obligation and is able to make an additional investment to make good the losses, the majority interests do not need to absorb the losses covered by the obligation.

Required:

1. Read the Basis of Conclusions in IFRS 10 and analyze the explanations given by the Board on their final decision. (Most University Libraries would have a database that would permit you to access the Basis of Conclusions of the IFRS Standards.)
2. When losses exceed the balance in non-controlling interests, which of the following treatment would you support. Write a 500-word short essay to explain your decision.
   (a) IFRS 10;
   (b) IAS 27 (2003); or
   (c) Other treatment (specify).
3. *Role play and class debate*: Your professor will organize you into two groups. One group represents the board members in the Board that supports the position in IFRS 10, and the other group supports the position in IAS 27 (2003). Each group is given ten minutes to make its case. The professor and other class members will be the judge to decide which group has the most convincing arguments.

PROBLEMS

P4.1 Goodwill fair value adjustments

P Co issued 2,000,000 of its own shares (fair value of $10 per share) and paid $6,000,000 in cash to the existing owners of S Co to acquire 90% of the shares of S Co on 1 July 20x1. Fair value of non-controlling interests was $2,800,000 at the date of acquisition. The book and fair values of S Co's assets and liabilities as at 1 July 20x1 are shown below:

	Book value	Fair value
Plant and equipment	$ 2,000,000	$ 1,800,000
Investment property	10,000,000	15,000,000
In-process R&D	0	6,000,000
Inventory	500,000	750,000
Accounts receivable	200,000	200,000
Cash	10,000	10,000
	$12,710,000	$23,760,000
Accounts payable	$ 1,510,000	$ 1,510,000
Contingent liabilities		90,000
Share capital	10,000,000	
Retained earnings	1,200,000	
	$12,710,000	

Additional information:

(a) The remaining useful life of plant and equipment as at 1 July 20x1 was ten years.

(b) As at 30 June 20x2, the fair value of in-process R&D was reliably assessed at $5,500,000.

(c) 90% of the inventory was sold by 30 June 20x2 and the balance 10% was deemed as impaired on 30 June 20x3.

(d) The fair value model is to be adopted for investment property in the consolidated financial statements, that is, changes in fair value after initial recognition are taken to the income statement. As at 30 June 20x2, the fair value of the investment property was $16,000,000. S Co incorrectly applied the cost model (without depreciation) to measure the investment property in its separate financial statements.

(e) As at 30 June 20x2, no recognition was made for contingent liabilities in the separate financial statements of S Co. However, a disclosure was made in the footnotes of S Co in relation to the contingent liabilities. As at 30 June 20x2, the reported amount of the contingent liabilities was deemed reliable and met the recognition criteria in IFRS 3.

(f) Approximately 10% of entity goodwill was deemed to be impaired as of 30 June 20x2.

(g) Tax rate is 20%. Recognize tax effects on fair value adjustments.

(h) S Co earned annual profit after tax of $2,000,000 for the year ended 30 June 20x2 and 30 June 20x3. There were no dividends or other changes in equity during the two years. There was no change in the fair value of investment property as at 30 June 20x3.

Required:

1. Show the consolidation adjustments for P Co and its subsidiary S Co for the years ended 30 June 20x2 and 30 June 20x3.
2. Perform an analytical check on the balance of non-controlling interests as at 30 June 20x2 and 30 June 20x3.

P4.2 Consolidation, goodwill, and fair value adjustments

Prince Ltd bought 80% of Silver Ltd on 1 January 20x1 for $230,000 when Silver's statement of financial position was as follows:

Silver Ltd
Statement of Financial Position
As at 1 January 20x1

	Book value	Fair value
Share capital	$190,000	
Retained earnings	5,000	
Shareholders' equity	$195,000	$215,000
Fixed assets, cost	$100,000	
Less accumulated depreciation	30,000	
Net book value	$ 70,000	$ 90,000
Other assets, net of liabilities	125,000	125,000
Net assets	$195,000	$215,000

Fixed assets had a remaining useful life of five years as at 1 January 20x1. Goodwill impairment losses on the original goodwill of Silver attributable to parent and non-controlling interests are as follows:

(a) 20% of the original goodwill was deemed impaired and written off in 20x2.
(b) 10% of the original goodwill was written off in 20x3.

Fair value of non-controlling interests as at 1 January 20x1 was $55,000. The financial statements for the year ended 31 December 20x3 are as follows:

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x3

	Prince Ltd	Silver Ltd
Sales	$5,000,000	$1,900,000
Cost of sales	(4,250,000)	(1,520,000)
Gross profit	$ 750,000	$ 380,000
Other expenses	(185,000)	(155,000)
Operating profit	$ 565,000	$ 225,000
Dividend income from Silver Ltd	28,000	0
Profit before tax	$ 593,000	$ 225,000
Tax expense	(113,000)	(45,000)
Profit after tax	$ 480,000	$ 180,000

Dividends declared	(100,000)	(35,000)
Profit retained	$ 380,000	$ 145,000
Retained earnings, 1 January	1,620,000	155,000
Retained earnings, 31 December	$2,000,000	$ 300,000

Statement of Financial Position
As at 31 December 20x3

	Prince Ltd	Silver Ltd
Fixed assets, net book value	$2,200,000	$326,000
Investment in Silver Ltd, at cost	230,000	
Other investments		120,000
Inventories	797,000	106,000
Receivables	453,000	50,000
Due from Silver Ltd	60,000	
Cash	185,000	20,000
	$3,925,000	$622,000
Share capital	$1,150,000	$190,000
Retained earnings	2,000,000	300,000
Payables	775,000	72,000
Due to Prince Ltd		60,000
	$3,925,000	$622,000

Required:

1. Prepare all necessary consolidation adjustments and elimination entries for the year ended 31 December 20x3. Recognize tax effects at 20%.
2. Prepare the consolidation worksheet for the year ended 31 December 20x3.
3. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x3.

P4.3 Consolidation and analytical check on non-controlling interests

The statement of financial position of Subsidiary Co as at 31 December 20x0, the date it was acquired by Parent Co, and income statements for Parent Co and Subsidiary Co for the year ended 31 December 20x1 are shown below:

Subsidiary Co
Statement of Financial Position
As at 31 December 20x0 (date of acquisition)

	Book value	Fair value
Fixed assets, net	$600,000	$750,000
Current assets:		
Inventory	40,000	50,000

Accounts receivable	100,000	70,000
Cash	20,000	20,000
	$160,000	$140,000
Less current liabilities:		
Accounts payable	$ 80,000	$ 80,000
Short-term loans	110,000	110,000
	$190,000	$190,000
Net current assets/liabilities	(30,000)	(50,000)
	$570,000	$700,000
Shareholders' equity:		
Share capital	$320,000	
Retained earnings	250,000	
	$570,000	$700,000

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x1

	Parent Co	Subsidiary Co
Net profit before tax (including dividend income)	$ 550,000	$100,000
Less tax expense	110,000	20,000
Net profit after tax	$ 440,000	$ 80,000
Less dividends declared	100,000	24,000
Profit retained for the year	$ 340,000	$ 56,000
Retained earnings, 1 January	1,000,000	250,000
Retained earnings, 31 December	$1,340,000	$306,000

Additional information:

(a) Parent paid $1,000,000 for an 80% stake in Subsidiary on 31 December 20x0. Fair value of non-controlling interests was $250,000 at acquisition date that was proportional to the consideration transferred by Parent Co.

(b) On 31 December 20x1, total goodwill was assessed to be impaired to the extent of $50,000.

(c) There were no intragroup transactions other than Parent Co's investment in Subsidiary Co and dividends declared by S Co.

(d) Information relating to "undervalued" and "overvalued" identifiable assets is as follows:

  (i) Remaining useful life of undervalued fixed asset as at 31 December 20x0 was ten years.

  (ii) Undervalued inventory was sold in 20x1.

  (iii) Overvalued accounts receivable was written down for a potential bad debt. The debt was confirmed bad in 20x1 and written off in Subsidiary's books in 20x1.

(e) Assume a tax rate of 20%. Recognize tax effects on fair value adjustments.

Required:

1. What is the goodwill arising from the application of the requirements of IFRS 3 *Business Combinations*?
2. Prepare the consolidation adjustments for the year ended 31 December 20x1.
3. Perform an analytical check on the non-controlling interests' balance as at 31 December 20x1.
4. Show the consolidation adjustments that need to be passed in 20x2 to re-enact the consolidation adjustments of 20x1.
5. Prepare the consolidated income statement for the year ended 31 December 20x1.

P4.4 Consolidation and analytical check on non-controlling interests

On 1 January 20x4, P Co acquired 90% of S Co. Details of S Co as at the date of acquisition are as follows:

Share capital	$1,000,000
Retained earnings as at 1 January 20x4	150,000
	$1,150,000

Fair value was different from book value of the following assets of S Co:

	Fair value	Book value
Fixed assets	$900,000	$800,000

Remaining useful life for the fixed assets as at acquisition date was five years and residual value of the fixed assets was zero. Fair value of non-controlling interests as at acquisition date was $345,000. The financial statements of P Co and S Co for the year ended 31 December 20x5 are shown below. Assume a tax rate of 20% throughout.

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x5

	P Co	S Co
Sales	$10,000,000	$3,500,000
Cost of sales	(7,820,000)	(1,200,000)
Gross profit	$ 2,180,000	$2,300,000
Operating expenses	(800,000)	(560,000)
Operating profit	$ 1,380,000	$1,740,000
Dividend income from S	54,000	
Interest income – S and bank	100,000	
Interest expense to P		(90,000)
Profit before tax	$ 1,534,000	$1,650,000
Tax at 20%	(306,800)	(330,000)
Profit after tax	$ 1,227,200	$1,320,000
Dividends declared	(120,000)	(60,000)
Profit retained	$ 1,107,200	$1,260,000

Retained earnings, 1 January	1,300,000	400,000
Retained earnings, 31 December	$ 2,407,200	$1,660,000

Statement of Financial Position
As at 31 December 20x5

	P Co	S Co
Investment in S Co	$ 3,200,000	
Fixed assets	4,500,000	$2,000,000
Loan receivable from S Co	500,000	
Inventory	1,250,000	670,000
Accounts receivable	1,300,000	500,000
Other receivables	200,000	120,000
Cash	320,000	
	$11,270,000	$3,290,000
Share capital	$ 3,000,000	$1,000,000
Retained earnings	2,407,200	1,660,000
Loan payable to P		500,000
Accounts payable	5,742,800	80,000
Other payables	120,000	50,000
	$11,270,000	$3,290,000

Required:

1. Prepare the consolidation adjustments for the year ended 31 December 20x5.
2. Prepare the consolidation worksheets for the year ended 31 December 20x5.
3. Reconcile the non-controlling interests' balance as at 31 December 20x5.

P4.5 Acquisition method and non-controlling interests at fair value

P Co acquired control of Jasper Co through acquisition of 90% in the voting rights of Jasper Co on 1 July 20x2. A cash transfer of $2,000,000 was made to the former owners of Jasper Co. P Co elects to measure non-controlling interests at fair value on acquisition date. The fair value of non-controlling interests on 1 July 20x2 was $200,000. The shareholders' equity of Jasper Co at acquisition date is as follows:

Share capital	$ 500,000
Retained earnings	450,000
Revaluation reserves	100,000
	$1,050,000

The fair and book values of identifiable net assets of Jasper Co at acquisition date is shown below:

	Book value	Fair value	Remarks
Inventory	$ 200,000	$ 250,000	60% were sold during 20x3
Fixed assets	450,000	500,000	Remaining useful life at acquisition was 5 years.
Other net assets	400,000	400,000	
	$1,050,000	$1,150,000	

The financial statements of P Co and Jasper Co are shown below:

Statement of Comprehensive Income
For Year Ended 31 December 20x3

	P Co	Jasper Co
Profit before tax	$4,000,000	$1,000,000
Tax	(800,000)	(200,000)
Profit after tax	$3,200,000	$ 800,000
Change in revaluation reserves, after-tax		100,000
Comprehensive income	$3,200,000	$ 900,000

Statement of Changes in Equity
For the Year Ended 31 December 20x3 (partial)

	P Co	Jasper Co	Jasper Co	Jasper Co
	Retained earnings	Retained earnings	Revaluation reserves	Total
Balance, 1 January 20x3	$ 840,000	$ 400,000	$400,000	$ 800,000
Comprehensive income	3,200,000	800,000	100,000	900,000
Dividends declared	(180,000)	(100,000)		(100,000)
Balance, 31 December 20x3	$3,860,000	$1,100,000	$500,000	$1,600,000

Statement of Financial Position
As at 31 December 20x3

	P Co	Jasper Co
Fixed assets, net book value	$2,400,000	$2,200,000
Investment in Jasper Co	2,000,000	
Inventory	720,000	500,000
Intercompany receivable		300,000
Accounts receivable	800,000	550,000
Dividend receivable from Jasper	72,000	
Cash	60,000	20,000
	$6,052,000	$3,570,000
Payables	$ 712,000	$1,390,000

Intercompany payable	300,000	
Dividend payable	180,000	80,000
Share capital	1,000,000	500,000
Retained earnings	3,860,000	1,100,000
Revaluation reserves		500,000
	$6,052,000	$3,570,000

Required:

1. Prepare the consolidation adjusting entries for the year ended 31 December 20x3. Tax rate was 20%. Recognize tax effects on fair value differentials.
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x3.

P4.6 Acquisition method and non-controlling interests as a proportion of identifiable net assets

Assume the same facts as in P4.5, except that P Co elects to measure non-controlling interests as a proportion of identifiable net assets.

Required:

1. Prepare the consolidation adjusting entries for the year ended 31 December 20x3. Tax rate was 20%. Recognize tax effects on fair value differentials.
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x3.

P4.7 Acquisition method and non-controlling interests at fair value

P Co acquired a controlling interest in Moonstone as follows:

Interest acquired	90%
Date of acquisition	1 January 20x1

At acquisition date, the shareholder's equity of Moonstone Co were as follows:

Share capital	$1,200,000
Retained earnings	550,000
Revaluation reserves	120,000
	$1,870,000

The fair and book values of identifiable net assets of Moonstone at date of acquisition were as follows:

	Book value	Fair value	Remarks
Inventory	$ 120,000	$ 180,000	Sold by Moonstone Co during 20x1
Intangible assets	–	250,000	Remaining useful life was five years
Other net assets	$1,750,000	1,750,000	
	$1,870,000	$2,180,000	

P Co chose to measure non-controlling interests at fair value on acquisition date. The fair value of non-controlling interests in Moonstone Co as at date of acquisition was $250,000. The financial statements of P Co and Moonstone Co are shown below:

Statement of Comprehensive Income
For the year ending 31 December 20x3

	P Co	Moonstone Co
Profit before tax	$2,000,000	$500,000
Tax	(391,000)	(100,000)
Profit after tax	$1,609,000	$400,000
Other comprehensive income:		
Change in revaluation reserve, after-tax		90,000
Comprehensive income	$1,609,000	$490,000

Statement of Changes in Equity
For the year ended 31 December 20x3 (partial)

	P Co	Moonstone	Moonstone	Moonstone
	Retained earnings	Retained earnings	Revaluation reserves	Total
Balance, 1 January 20x3	$ 760,000	$520,000	$200,000	$ 720,000
Comprehensive income	1,609,000	400,000	90,000	490,000
Dividends declared	(100,000)	(50,000)		(50,000)
Balance, 31 December 20x3	$2,269,000	$870,000	$290,000	$1,160,000

Statement of Financial Position
As at 31 December 20x3

	P Co	Moonstone Co
Fixed assets, net book value	$2,500,000	$1,800,000
Investment in Moonstone Co	2,600,000	
Inventory	900,000	500,000
Intercompany receivable		120,000
Accounts receivable	1,000,000	500,000
Dividend receivable from Moonstone	45,000	
Cash	80,000	150,000
	$7,125,000	$3,070,000
Payables	$2,706,000	$ 660,000
Intercompany payable	120,000	
Dividend payable	30,000	50,000

Share capital	2,000,000	1,200,000
Retained earnings	2,269,000	870,000
Revaluation reserves		290,000
	$7,125,000	$3,070,000

Required:

1. Prepare the consolidation adjusting entries for the year ending 31 December 20x3. Tax rate was 20%. Recognize tax effects on fair value differentials.
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x3.

P4.8 Acquisition method and non-controlling interests as a proportion of identifiable net assets

Assume the same facts as in P4.7, except that P Co elects to measure non-controlling interests as a proportion of identifiable net assets.

Required:

1. Prepare the consolidation adjusting entries for the year ended 31 December 20x3. Tax rate was 20%. Recognize tax effects on fair value differentials.
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x3.

P4.9 Potential voting rights and non-controlling interests at fair value

P Co acquired control of Sapphire Co on 1 July 20x8 by acquiring 90% of the ordinary shares and stock options of Sapphire Co through paying cash of $200,000,000 to the former owners of Sapphire Co. P Co measures non-controlling interests at fair value. Tax on fair value of identifiable net assets should be recognized at 20%. The information on identifiable net assets of Sapphire Co is shown below:

	Fair value	Book value
Intangible assets	$ 20,000,000	$ 0
Other net assets	120,000,000	120,000,000
Total net assets	$140,000,000	$120,000,000

Fair value per ordinary share	$2.00
Fair value per stock option	$0.50
Non-controlling interests	10,000,000 shares; 1,000,000 option units
P Co's interests	90,000,000 shares; 9,000,000 option units
Fair value of consideration transferred	$200,000,000

Required:

1. Determine the amount of non-controlling interests that has to be recognized by P Co as at acquisition date.
2. Determine the amount of goodwill that has to be recognized by P Co as at acquisition date.

P4.10 Potential voting rights and non-controlling interests as a proportion of identifiable net assets

Assume the same facts as in P4.9, except that P Co measures non-controlling interests as a proportion of identifiable net assets. Assume that the ordinary shares and stock options share proportionately in the fair value of identifiable net assets.

Required:

1. Determine the amount of non-controlling interests that has to be recognized by P Co as at acquisition date.
2. Determine the amount of goodwill that has to be recognized by P Co as at acquisition date.

P4.11 Consolidation and analytical check on non-controlling interests.

P Co acquired an ownership interest of 90% in X Co and obtained control on 1 January 20x3.

Shareholders' equity of X Co at date of acquisition was as follows:	
Share capital	$600,000
Retained earnings	600,000
	$1,200,000

On acquisition date, the fair value of fixed assets of X Co was $1,400,000 while the book value of fixed assets was $1,000,000. Fixed assets had a useful life of ten years as at the date of acquisition. The fixed assets were disposed at a price of $300,000 to third parties on 1 January 20x6.

Fair value of non-controlling interests of X Co as at acquisition date was $180,000. The financial statements for the year ended 31 December 20x6 are shown below.

Income Statement and partial Statement of Changes in Equity for year ended 31 December 20x6

	P Co	X Co
Profit before tax	$4,200,000	$2,400,000
Tax	(840,000)	(480,000)
Profit after tax	$3,360,000	$1,920,000
Dividends declared	(200,000)	(100,000)
Profit retained	$3,160,000	$1,820,000
Retained earnings, 1 Jan 20x6	1,500,000	800,000
Retained earnings, 31 Dec 20x6	$4,660,000	$2,620,000

Statement of Financial Position as at 31 December 20x6

	P Co	X Co
Fixed assets, net book value	$5,200,000	$2,600,000
Investment in X, at cost	1,800,000	
Inventory	300,000	340,000
Accounts receivable	500,000	250,000

Cash	100,000	70,000
Total assets	$7,900,000	$3,260,000
Payables	$2,240,000	$40,000
Share capital	1,000,000	600,000
Retained earnings	4,660,000	2,620,000
Equity and Liabilities	$7,900,000	$3,260,000

Assume a tax rate of 20%. Recognize tax on fair value adjustments.

Required:

1. Prepare consolidation entries for the year ended 31 December 20x6.
2. Perform an analytical check on the balance in non-controlling interests as at 31 December 20x6, showing the workings clearly.

P4.12 Consolidation and analytical check on non-controlling interests

P Co obtained control of Y Co on 1 January 20x4 by acquiring a 90% interest in Y Co. Share capital of Y Co was $900,000 and its retained earnings at date of acquisition was $300,000. Fair value of non-controlling interests of Y Co on 1 January 20x4 was $120,000.

Due diligence carried out before acquisition revealed that Y Co was a defendant in a litigation case in which a judgement was made in favor of the plaintiff. As Y Co is countersuing the plaintiff, no provision had yet been recognized as at 1 January 20x4 as the loss was not deemed probable. Based on expected losses, a provision of $200,000 should be recognized by P Co in accordance with IFRS 3. Y Co recognized a litigation expense of $180,000 in July 20x5 on the final award of damages to the plaintiff by the courts.

The financial statements of P Co and Y Co for the current year ended 31 December 20x6 are shown below.

Income Statement and partial Statement of Changes in Equity for year ended 31 December 20x6

	P Co	Y Co
Profit before tax	$5,000,000	$2,000,000
Tax	(1,000,000)	(400,000)
Profit after tax	$4,000,000	$1,600,000
Dividends declared	(300,000)	(120,000)
Profit retained	$3,700,000	$1,480,000
Retained earnings, 1 Jan 20x6	1,200,000	800,000
Retained earnings, 31 Dec 20x6	$4,900,000	$2,280,000

Statement of Financial Position as at 31 December 20x6

	P Co	Y Co
Fixed assets, net book value	$4,160,000	$2,500,000
Investment in Y co, at cost	1,800,000	

Amount due from P Co		90,000
Inventory	800,000	600,000
Accounts receivable	520,000	200,000
Cash	100,000	50,000
Total assets	$7,380,000	$3,440,000
Accounts payable	$390,000	$ 260,000
Amount due to Y Co	90,000	
Share capital	2,000,000	900,000
Retained earnings	4,900,000	2,280,000
Equity and Liabilities	$7,380,000	$3,440,000

Required:

1. Prepare consolidation entries for the year ended 31 December 20x6.
2. Perform an analytical check on the balance in non-controlling interests as at 31 December 20x6, showing the workings clearly.

P 4.13 Business combinations, consolidation and analytical check on non-controlling interests

On 2 January 20x4, P Co purchased from X Co, a controlling interest of 90% interest in Sapphire Co, a company that has an on-going research and development (R&D) project. On 2 January 20x4, P Co entered into the following transactions relating to the acquisition and financing arrangements.

(1)	Number of P Co's shares issued to X Co	1,300,000
	Fair value per share of P Co	$1.40
(2)	Direct costs of issuing shares to X Co	$17,800
(3)	Transfer of land to X Co	
	Fair value of land	$1,500,000
	Carrying amount in P Co's books	$1,350,000
(4)	Cash transferred to X Co	$ 800,000
(5)	Number of shares issued to existing owners of P Co to fund the acquisition	1,200,000
(6)	Conditional payment made to X Co if R&D project is successful at the end of 3 years from acquisition date	$1,800,000
	Probability of success	70%
	Payment is due at the end of 3 years	31 Dec 20x6
	Implicit interest rate charged by X Co	5% p.a.

At the date of acquisition, the shareholders' equity of Sapphire Co was as follows:

Share capital	$1,000,000
Retained earnings	158,000

Other comprehensive income	24,000
	$1,182,000

The fair value of non-controlling interests on acquisition date was $412,000.

As at acquisition date, Sapphire Co had a research and development project that had the following expected outcomes:

Future event	Present value of cash inflows	Probability
Successful outcome	$2,000,000	0.70
Not successful outcome	$0	0.30

Prior to acquisition, Sapphire had accounted for the project expenditures as follows:

Expensed research costs	$650,000
Expensed development costs	$200,000
Capitalized development costs as at 31 Dec 20x3	$350,000

The development expenditures incurred to acquisition date of $350,000 met the conditions for capitalization in International Accounting Standard (IAS) 38 *Intangible Assets* and was recognized in Sapphire's balance sheet at acquisition date.

Sapphire Co completed the research and development project on 31 December 20x5 successfully. The estimated economic life of the intangible asset was 10 years. The group and Sapphire Co use the cost model to measure intangible assets.

The financial statements of Sapphire Co for the current year ended 31 December 20x6 are as follows:

Income Statement and Statement of Changes in Equity (partial)
for the year ended 31 December 20x6

Profit before tax	$650,000
Tax	(130,000)
Profit after tax	$520,000
Dividends declared	(67,000)
Profit retained	$453,000
Retained earnings, 1 Jan 20x6	239,000
Retained earnings, 31 Dec 20x6	$692,000

Statement of Financial Position as at 31 Dec 20x6

Non-current assets	$1,560,000
Amount due from P Co	79,000
Inventory	237,000
Accounts receivable	270,000

Cash	32,000
	$2,178,000
Liabilities	$396,000
Share capital	1,000,000
Retained earnings	692,000
Other comprehensive income balance	90,000
	$2,178,000

Additional information:

(a) Recognize tax effects on fair value adjustments and other adjustments at the tax rate of 20%.

(b) The balance of other comprehensive income as at 1 January 20x6 was $78,000. Other comprehensive income (OCI) arises from items of income that bypass net income in accordance with IAS 1 Presentation of Financial Statements. OCI is built up in separate accounts in equity. (Hint: Where OCI balance at beginning of the year is provided, separate allocation of current and change in post-acquisition OCI in the same way as for profit and post-acquisition retained earnings).

Required:

1. Prepare the journal entries to record the investment in Sapphire, transaction costs, financing transactions and other entries in P Co's books on 2 January 20x4. Recognize unamortized discount separately for future settlements.
2. In the light of the successful completion of the research and development project by Sapphire, record the following transactions in P Co's books for the year ended 31 December 20x5 and 20x6: page 234
   i. Interest expense on contingent consideration payable; and
   ii. Adjusting entries and settlement of contingent consideration payable.
3. Prepare consolidation entries for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.
4. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6, showing the workings clearly.

P4.14 Business combinations, consolidation and analytical check on non-controlling interests

On 2 January 20x4, P Co acquired controlling interest in 90% of Topaz Co through the following transfers to Y Co, the former owners of Topaz. P Co expects significant synergies from Topaz Co's possible licensing rights expected in 20x5. Financing and other transactions are also shown below:

(1) Number of P Co shares issued to Y Co	600,000
Fair value per share of P Co	$1.80
(2) Direct cost of issuing P Co shares	$20,000
(3) Due diligence costs paid to consultants	$25,000
(4) Cash transferred to Y Co	$800,000
(5) Borrowings from bank to finance acquisition	$670,000
(6) Liability due to Y Co, payable end of 3 years	$1,000,000
Payment due date	31 Dec 20x6
Interest factor	5% p.a.

The financial statements of Topaz Co for the current year ended 31 December 20x6 are shown below:

Income Statement for year ended 31 December 20x6 and partial Statement of Changes in Equity

Profit before tax	$350,000
Tax	(70,000)
Profit after tax	$280,000
Dividends declared	(50,000)
Profit retained	$230,000
Retained earnings, 1 Jan 20x6	120,000
Retained earnings, 31 Dec 20x6	$350,000

Statement of Financial Position as at 31 Dec 20x6

Fixed assets, net book value	$590,000
Inventory	560,000
Accounts receivable	320,000
Cash	60,000
	$1,530,000

page 235

Amount due to P Co	$120,000
Other liabilities	510,000
Share capital	450,000
Retained earnings	350,000
Other comprehensive income (OCI)	100,000
	$1,530,000

Additional information:

(a) Shareholders' equity of Topaz at date of acquisition was as follows:

Share capital	$450,000
Retained earnings	100,000
OCI	6,000
	$556,000

(b) The book value of Topaz' identifiable net assets was close to its fair value with the exception of the inventory:

Fair value	$160,000
Book value	$120,000

The inventory was sold in full in 20x4.

(c) The fair value of non-controlling interests of Topaz as at acquisition date was $188,000.

(d) The balance of other comprehensive income as at 1 January 20x6 was $67,000.

(e) Assume a tax rate of 20%.

Required:

1. Prepare the journal entries to record the investment in Topaz, transaction costs, financing transactions and other entries in P Co's books on 2 January 20x4. Recognize unamortized discount separately for future settlements.
2. Record the following transactions in P Co's books for the year ended 31 December 20x6:
   i. Interest expense on long-term loan payable in 20x6;
   ii. Settlement of loan payable on 31 December 20x6.
3. Explain briefly the reason for not recognizing the possible licensing right as an intangible asset as at 2 January 20x4.
4. Prepare consolidation entries for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.
5. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6, showing the workings clearly.

P4.15 Goodwill impairment

P Co purchased an 80% interest in S Co, which has two divisions: Paints and Chemicals. Each of these two divisions has cash flows that are independent of each other. Hence, they are deemed as "cash-generating units" in accordance with IAS 36 *Impairment of Assets.* The goodwill paid by P Co for S Co was allocated to the two divisions as shown below. The following table shows the balances as at 31 December 20x5.

	Paints division	Chemicals division
Goodwill (P's share)	$ 6,000,000	$ 7,000,000
Goodwill (non-controlling interests' share)	1,500,000	1,750,000
Book value of identifiable net assets	30,000,000	43,000,000
Unamortized balance of fair value adjustments	3,000,000	5,000,000
Fair value of division	33,000,000	56,000,000
Value in use	37,000,000	50,000,000

Required:

1. What is the impairment loss on goodwill, if any, that should be recognized by P Co in its consolidated financial statements for the year ended 31 December 20x5?
2. The allocation of goodwill to different cash-generating units may be an arbitrary process. Suggest how the allocation may be carried out meaningfully by P Co.

P4.16 Impairment of goodwill

P Co obtained control of S Co on 1 July 20x6, which has two divisions: Trading and Manufacturing. Each is a "cash-generating unit" as defined by *IAS 36 Impairment of Assets*. P Co chose to measure non-controlling interests at fair value on acquisition date. Total goodwill recognized was $8,000,000. On acquisition, P Co also recognized internally-generated intangible assets at fair value. P Co has to assess the impairment of goodwill as at 31 December 20x8. The following information was available as at 31 December 20x8.

	Trading division	Manufacturing division
Goodwill attributable	$ 3,500,000	$ 4,500,000
Book value of identifiable net assets	12,000,000	20,000,000
Unamortized balance of intangible assets, after tax	6,000,000	4,500,000
Fair value of division	15,000,000	28,000,000
Value in use	16,000,000	27,000,000

Required:

1. Determine the impairment loss, if any, for goodwill of the trading division and the manufacturing division as at 31 December 20x8.
2. Determine the impairment loss, if any, for identifiable net assets of the trading division and the manufacturing division as at 31 December 20x8.

P4.17 Impairment of goodwill

P Co obtained control of S Co on 1 July 20x6, which has two divisions: Trading and Manufacturing. Each is a "cash-generating unit" as defined by *IAS 36 Impairment of Assets*. P Co chose to measure non-controlling interests as a proportion of identifiable net assets on acquisition date. Goodwill attributable to P Co that was recognized was $7,000,000. On acquisition, P Co also recognized internally generated intangible assets at fair value. P Co has to assess the impairment of goodwill as at 31 December 20x8. The following information was available as at 31 December 20x8.

	Trading division	Manufacturing division
Goodwill attributable	$ 3,000,000	$ 4,000,000
Book value of identifiable net assets	12,000,000	20,000,000
Unamortized balance of intangible assets, after tax	6,000,000	4,500,000
Fair value of division	15,000,000	27,000,000
Value in use	16,000,000	28,000,000

Required:

1. Determine the impairment loss, if any, for goodwill of the trading division and the manufacturing division as at 31 December 20x8.
2. Determine the impairment loss, if any, for identifiable net assets of the trading division and the manufacturing division as at 31 December 20x8.

P4.18 Accounting for other components of non-controlling interests

On 1 January 20x5, Company A acquired all the 800,000 ordinary shares in Company B for $900,000 in cash. The carrying amount or book value of net assets of Company B as at the date of acquisition amounted to $650,000. The fair value of the net identifiable assets as at 1 January 20x5 is $710,000.

During the year, Company B has also issued share options to its employees. As at the date of acquisition, only one tranche of share options has been issued and the carrying value in the share option reserve in equity amounted

to $70,000. The options have vested in the employees and Company A does not replace them on acquisition. There are also no changes to the terms to the share options with the acquisition by Company A.

Additionally, Company B has 1,000 preference shares outstanding as at 1 January 20x5. These shares, which were issued at par of $1 per share, are classified as equity in accordance with IAS 32 *Financial Instruments: Presentation*. The preference shares do not carry any voting rights and will provide their holders a right to a preferred dividend over the payment of any dividend to the ordinary shareholders. Upon liquidation, the preference shareholders are not entitled to a proportionate share of the net assets. The fair value of these preference shares at the date of acquisition is $5,000.

Required:

Calculate the goodwill on acquisition and prepare the accounting entries for the transaction. Ignore tax effects for this transaction.

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[1] In practice, the elimination of investment entry is often described as a "permanent" entry because it recurs in each consolidation process in subsequent periods.

[2] The assumption throughout the text is that dividends are tax-exempt.

[3] Basis of Conclusions, IFRS 10, paragraph BCZ165.

[4] Overvaluation generally indicates impairment loss that should be recognized by the subsidiary under IAS 36 *Impairment of Assets*. However, for illustrative purposes, we assume that the impairment loss is not recognized by the subsidiary.

[5] If these employees, share options are vested and the acquirer does not exchange the awards held by the employees for its share-based payment, they are part of the non-controlling interest in the acquiree and are measured at their market-based measure. If the options are not vested at the date of acquisition, they are measured at their market-based measure as if the acquisition date were the grant date. The amount allocated to the non-controlling interest is based on the ratio of the portion of the vesting period completed to the greater of the total vesting period and the original vesting period of the share-based payment transaction. The balance is allocated to post-combination service, that is, part of the consideration transferred is deemed to be payment for this post-combination service. (IFRS 3 paragraphs B62A and B62B)

CHAPTER

5

Group Reporting IV

Consolidation under IFRS 10

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

LO1 Understand the principles underlying the elimination of intragroup balances and transactions in consolidation;

LO2 Understand the rationale for consolidation adjustments to opening retained earnings;

LO3 Appreciate the significance of upstream versus downstream sales and the consequential impact on non-controlling interests;

LO4 Pass the appropriate consolidation adjustments with respect to unrealized profit or loss arising from intercompany transfers of inventory and fixed assets; and

LO5 Understand and know how to analytically determine consolidated retained earnings.

ELIMINATION OF INTRAGROUP TRANSACTIONS AND BALANCES

Since the existence of a group is motivated by the economic benefits to be gained from operating as one unit, there are likely to be significant operational and financial interdependencies among the entities within a group that may lead to intragroup transactions and balances. Intragroup transactions arising from operational and financial interdependencies include:

1. Selling inventory to, or buying inventory from, a group company;
2. Transfering long-lived assets (for example, fixed assets or investments) from one group company to another;
3. Rendering service to, or procuring services from, other group companies; and
4. Providing financing for working capital or long-term financing needs of group companies.

The transfer of assets within a group is rarely transacted at the carrying amounts of the assets as recorded in the books of the selling company. Business units within a group often operate competitively. If the transaction is done on an arm's-length basis, the transaction price is at fair value and a profit margin is often included in the transfer price. The difference between the transfer price and the book value or the carrying amount of the asset results in a profit or loss for the selling company. From a group's perspective, the profit or loss is unrealized or unearned until the asset is sold to a third party. The lag between the point of purchase and the point of resale often results in the inventory being recognized in the statement of financial position of the buying company at a marked-up price. While the profit is deemed to be earned from the legal entity's perspective in accordance with IFRS 15 *Revenue from Contracts with Customers*, both the profit of the selling company and the inventory of the buying company are overstated from the group's perspective. The control of ownership of the inventory has not been passed from the group to an external party, and inventory is measured at an amount that exceeds the original purchase price. From the group's perspective, the unrealized profit has to be eliminated, and the inventory has to be restated to the lower of original cost as transacted with third parties and net realizable value. The Group recognizes profit only when control of the asset is transferred to third parties or the asset is used, consumed or expensed off.

Intragroup transactions such as intragroup transfer of assets and intragroup financing give rise to *intragroup balances*.

Examples of intragroup balances include:

1. Amounts receivable from, or payable to, group companies arising from intragroup transactions such as the transfer of assets, provision of services, or charging of interest on intragroup borrowings;
2. Loans receivable from, or payable to, group companies; and
3. Dividends receivable from subsidiaries or dividends payable to parent company.

From an economic perspective, an entity is not able to transact with itself. Neither can an entity borrow from or lend monies to itself. Since consolidated financial statements are prepared for the group as a single economic entity, intragroup transactions and balances have to be eliminated in full.

IFRS 10 Appendix B paragraph B86(c) states that:

> Consolidated financial statements eliminate in full intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions between entities of the group (profits and losses resulting from intragroup transactions that are recognized in assets, such as inventory and fixed assets, are eliminated in full). Intragroup losses may indicate an impairment that requires recognition in the consolidated financial statements. IAS 12 *Income Taxes* applies to temporary differences that arise from the elimination of profits and losses resulting from intragroup transactions.

Consolidation adjustments are passed either to eliminate or correct, or reverse the original entries so that the final consolidated financial statements reflect transactions and balances with parties that are external to the group. The key

to understanding consolidation adjustments is to remember that these adjustments are in relation to the original entries that are passed in the legal entity financial statements of the individual group companies.

In practice, consolidation involves a three-step process.

1. Preparing consolidation adjusting entries to arrive at consolidated totals that reflect the effects of transactions of the economic entity with external third parties;
2. Preparing consolidation worksheets, which combine the legal entities' financial statements and the consolidation adjusting entries; and
3. Analyzing the final consolidated totals to independently substantiate the reported numbers.

In today's environment, the compilation of consolidation worksheets is performed through the use of readily available computerized software such as Microsoft Excel. More importantly, the accounting student should understand the process in preparing the consolidation adjusting entries and in analyzing the consolidated totals. These steps reflect understanding of the application of accounting principles at the economic entity level.

In this chapter, we explain the principles that govern the preparation of consolidation adjusting entries. We also show how final consolidated totals can be substantiated. The compilation of the consolidation worksheet and the preparing of consolidated financial statements is a mechanistic process that follows from the more critical stage of preparing consolidation adjusting entries. The final step of analyzing consolidated totals is also critical in ensuring an independent check of the reported numbers. Hence, the focus of this chapter is on the preparation of consolidation adjusting entries and the analysis of the consolidated totals.

Principles Governing Elimination

The principles governing elimination are as follows:

1. Outstanding balances due to, and from, companies within a group (that is, a group, as defined in IFRS 10 Appendix A, comprises a parent and its subsidiaries) are eliminated.
2. Transactions in the income statement between one group company and another are eliminated.
3. Profit or loss resulting from intragroup transactions that are included in the carrying amount of an asset at year-end must be eliminated in full. Elimination in full implies that the non-controlling interests' share of the profit or loss is eliminated as well. The consistent treatment between controlling and non-controlling interests with respect to elimination of unrealized profit or loss is in line with the entity theory of consolidation.
4. Tax effects on unrealized profit or loss included in the carrying amount of an asset such as inventory or fixed assets should also be adjusted in accordance with IAS 12 *Income Taxes*.
5. Associates (entities over whom an investor has "significant influence") are not included in the definition of "group". Thus, balances with associates are not eliminated. Unrealized profit or loss from transactions between an investor and its associates are eliminated to the extent of the investor's interest. The principles and processes relating to accounting for associates are elaborated in Chapter 6.

ELIMINATION OF REALIZED INTRAGROUP TRANSACTIONS

When the profit and loss effects are exactly offsetting for both the buying and selling company within the group, the reciprocal account items will be eliminated. Although there is a "natural" offsetting effect on net profit in the consolidated income statement, the individual items must be eliminated to avoid the overstatement of disclosed line items in the consolidated income statement. The following are examples of intragroup transactions that affect the income statement.

Transactions Relating to Interest

Generally, the interest expense should exactly offset interest income. For example, a parent lends $2,000,000 to a subsidiary at the rate of 5% per annum. Assuming a full year's interest charge, the elimination entry is as follows:

Dr Interest income (Parent)	100,000	
Cr Interest expense (Subsidiary)		100,000

While intragroup interest transactions should eliminate perfectly, there will be some situations when the interest income of the lending company does not offset the interest expense of the borrowing company. This situation arises when one group company lends to another to develop or construct a long-lived asset. IAS 23 *Borrowing Costs* requires the borrowing company to capitalize the interest during the development or construction period into the cost of the asset. As such, the cost of borrowing is not expensed off in the period of the borrowing but in the period when the asset is amortized, depreciated, consumed, or sold.

Let's consider the following example. Parent Co borrows from an unrelated bank $1,000,000 at the rate of 5% per annum and lends $1,000,000 to Subsidiary Co on 2 January 20x1 at an interest rate of 6% per annum for the purpose of constructing a warehouse. The warehouse was completed on 31 December 20x1 and has a useful life of 20 years from 1 January 20x2. Interest is paid on 31 December but the loan remains outstanding throughout the period. Ignore tax effects for simplicity.

During 20x1, Parent Co will record the following journal entries in its separate financial statements:

Dr Cash	1,000,000	
Cr Loan payable to bank		1,000,000
Dr Loan receivable from Subsidiary Co	1,000,000	
Cr Cash		1,000,000
Dr Interest expense	50,000	
Cr Cash		50,000
Dr Cash	60,000	
Cr Interest income		60,000

At the same time, Subsidiary Co will record the following journal entries and capitalize interest as asset cost:

Dr Cash	1,000,000	
Cr Loan payable to Parent Co		1,000,000
Dr Fixed assets in progress	60,000	
Cr Cash		60,000

At the economic entity level, the interest "income" does not exist as it is only an internal transaction. Instead, the external transaction is the borrowing from the bank to finance the construction of the fixed assets. Hence, the internal interest should be eliminated and the external interest should be capitalized into the cost of the asset in line with IAS

23 *Borrowing Costs*. The consolidation adjusting entries should, therefore, be as follows (these entries can be combined but shown here separately for ease of understanding):

31 Dec 20x1	Dr Interest income	60,000	
	Cr Fixed assets in progress		60,000
	To eliminate interest income and internal interest capitalized in fixed assets		

31 Dec 20x1	Dr Fixed assets in progress	50,000	
	Cr Interest expense		50,000
	To capitalize the external interest in self-constructed fixed assets		

The intercompany balances should also be eliminated:

31 Dec 20x1	Dr Loan payable to Parent Co	1,000,000	
	Cr Loan receivable from Subsidiary Co		1,000,000
	To eliminate the intercompany loan balances		

In 20x2, the construction of the fixed assets is completed and the asset will be depreciated over a 20-year period. The consolidated income statement should reflect the depreciation of the capitalized interest from external sources, not the interest that arises from the internal loan:

Depreciation from the group's perspective ($50,000/20)	$2,500
Depreciation from the legal entity's perspective ($60,000/20)	3,000
Excess depreciation to adjust on consolidation	$ 500

Consolidation adjusting entries for 20x2 is as follows:

31 Dec 20x2	Dr Interest income	60,000	
	Cr Interest expense		60,000
	Elimination of internal interest transaction		

31 Dec 20x2	Dr Accumulated depreciation	500	
	Cr Depreciation expense		500
	Adjustment of excess depreciation		

The group also needs to pass through an entry to "correct" the overstatement of opening retained earnings of Parent Co and the overcapitalization of interest in fixed assets as at 1 January 20x2. This entry essentially "re-enacts" the previous year's consolidation adjustments. In a later section, we explain in greater depth the significance of adjustments to opening retained earnings and the impact of the direction of the transfers (that is, from parent to subsidiary or subsidiary to parent). For now, understand the intuition that from the economic entity's perspective, the retained earnings of Parent Co and the fixed assets of Subsidiary Co are overstated by the interest transaction.

31 Dec 20x2	Dr Opening retained earnings	10,000	

	Cr Fixed assets		10,000

Adjustment of opening retained earnings and overstated fixed assets as at beginning of the year

Transactions Relating to Services Provided

As with interest, the provision of services and the enjoyment of the benefits of the services are simultaneous. Both parties should record the transaction in their separate financial statements in the period when the services are rendered. For example, Subsidiary A rents its warehouse to Subsidiary B for $200,000 a year. An elimination entry is needed to reverse the effects as recorded in the separate financial statements of each subsidiary, as follows:

Dr Rental income (Subsidiary A)		200,000	
Cr Rental expense (Subsidiary B)			200,000

As with interest transactions, there may be service transactions that are recognized in different periods because the group company that is the customer capitalizes part or all of the service costs in an asset. The capitalization situation may arise when the service provided creates or enhances an asset or extends its useful life. For example, if one group company provides architectural services to another, the fee income of the architect will be offset against the asset of the buying company.

For example, Parent Co provides architectural services to Subsidiary Co during 20x1 and charges a fee of $500,000 during that year, which is over and above directly attributable costs and employee benefits[1] incurred on the architectural project of $300,000 which were expensed off by Parent Co. The fees are capitalized into the building cost of Subsidiary Co. Depreciation begins on 1 January 20x2 over an estimated useful life of 20 years. Ignore tax effects for simplicity.

page 245

In 20x1, the consolidation adjustment will eliminate the fee income against the fixed assets in progress:

31 Dec 20x1	Dr Fee income	500,000	
	Cr Fixed assets in progress		200,000
	Cr Architectural expense		300,000

To eliminate fee income and profit in fixed assets and to capitalize directly attributable costs

In 20x2, we need to pass consolidation adjustments to "re-enact" CJE1 to correct the opening retained earnings of Parent Co and the overstatement of fixed assets:

31 Dec 20x2	Dr Opening retained earnings	200,000	
	Cr Fixed assets		200,000

To eliminate fee income and capitalized cost in fixed assets as at 1 January 20x2

In 20x2, we also need to pass through consolidation adjustments to correct the excess depreciation of $10,000 (that is, $200,000 divided by 20 years) that arises from the internal fee capitalized in fixed assets:

31 Dec 20x2	Dr Accumulated depreciation	10,000	
	Cr Depreciation expense		10,000

To adjust excess depreciation on internal fee capitalized in fixed assets

Transfer of Inventories that are Resold to Third Parties Within the Same Financial Year

In such a situation, the intercompany sales by the selling company will exactly offset the intercompany cost of sales of the buying company. Any profit (or loss) of the selling company will offset the higher (or lower) cost of sales of the buying company. Even though there is no net impact on consolidated net income, the group has to pass a consolidation adjustment to eliminate the sale and cost of sale. Without this adjustment, the consolidated sales and consolidated cost of sales would include intragroup transactions. For example, Subsidiary C sells $500,000 worth of inventory to Subsidiary D, which then resells the inventory to third parties within the same financial year. Subsidiary C records a profit of $100,000 from the sale. The elimination entry is as follows:

Dr Sales (Subsidiary C)	500,000	
Cr Cost of sales (Subsidiary D)		500,000

In this example, the "marked-up" sales price of $500,000 exactly offsets the higher cost of sale of subsidiary D. From a group's perspective, this adjusting entry is necessary as the effects of the intragroup transfer should be fully eliminated, and the consolidated financial statements should show only the sale to third parties and the original cost of purchasing the inventory from third parties.

Dividend Transactions

A parent records dividend income when the parent's right to receive payment is established (IFRS 9 paragraph 5.7.1). When dividends are proposed but not declared, the parent should not recognize the dividend income as the right to receive payment is not established. A consolidation entry is necessary to reverse out the proposed dividends. Chapter 4 has explained and illustrated the elimination of dividends declared and dividend income.

ELIMINATION OF INTRAGROUP BALANCES

Prior to eliminating intragroup balances, a reconciliation must be carried out by both group companies to ensure that the reciprocal balances are in agreement. Frequently, reconciling items may be due to:

1. In-transit items that are recorded by one company but not by the other;
2. Errors and omissions; or
3. Dispute on the transaction.

All reconciling items must be resolved appropriately before intragroup balances can be eliminated. For example:

1. In-transit items should be either adjusted out or recognized in a manner that is consistent with the other party's treatment and should conform to sound accounting principles;
2. Errors and omissions should be corrected as appropriate; and
3. Disputed items should be either recognized by the disputing party or adjusted out by the party that recorded the items in its books.

An example of a reconciliation between two fellow subsidiaries is shown in Table 5.1.

TABLE 5.1
Reconciliation of intercompany balances between Subsidiaries A and B

Amount owing by B in A's books as at 31 December 20x5	$40,000
Less items in A's books but not in B's books:	

Invoice #1278 (5/11/05)	Disputed (Note 1)	(1,500)
Invoice #1309 (26/12/05)	Goods received on 29 December 20x5 (Note 2)	(3,200)
Invoice #2730 (31/12/05)	Goods received on 3 January 20x6 (Note 3)	(2,500)
Debit note #21 (31/12/05)	Repair for goods not under warranty (Note 4)	(300)
Less payment made in December 20x5 by B but not recorded by A:		
Cheque No. 1024 paid on 31 December 20x5 and uncleared as of 31 January 20x6 (Note 5)		(17,000)
Less items recorded by B but not by A:		
Defective goods returned on 1 December 20x5 by B but for which no credit note has been received (Note 6)		(2,000)
Amount owing to A in B's books as at 31 December 20x5		$13,500

Note 1: For purposes of consolidation, either Subsidiary A had to reverse the sales or Subsidiary B had to accrue for the invoice. However, both parties may reserve their rights to pursue a satisfactory resolution of the dispute, regardless of the accounting treatment.

Note 2: Since goods were received before the year-end, Subsidiary B had to record an adjusting entry as follows:

Dr Inventory	3,200	
Cr Payable to A		3,200

Note 3: Goods were received after year-end. If shipment had been made before the year-end, Subsidiary B would have recorded the transaction as follows:

Dr Goods-in-transit	2,500	
Cr Payable to A		2,500

Note 4: Since repairs were not covered under warranty, Subsidiary B had to make the following adjustment:

Dr Repair costs	300	
Cr Payable to A		300

Note 5: Follow-up action is required to ascertain the reason for the non-clearance of the cheque. The cheque was either lost in transit or unbanked by Subsidiary A. If lost, the cheque should be cancelled and reissued; an adjusting entry is required by Subsidiary B.

Dr Bank	17,000	
Cr Payable to A		17,000

Note 6: An adjusting entry by either Subsidiary A or Subsidiary B was necessary for purposes of agreement of intercompany balances, pending the satisfactory resolution of the matter.

After the reconciliations are properly carried out and followed up with appropriate entries in the separate financial statements, the elimination entries are simple when the balances agree. The examples of elimination entries are shown below:

Dr Intercompany payable (SFP)
  Cr Intercompany receivable (SFP)

Dr Dividend payable to parent (SFP)
  Cr Dividend receivable from subsidiary (SFP)

Dr Loan payable to parent (SFP)
  Cr Loan receivable from subsidiary (SFP)

ADJUSTMENT OF UNREALIZED PROFIT OR LOSS ARISING FROM INTERCOMPANY TRANSFERS

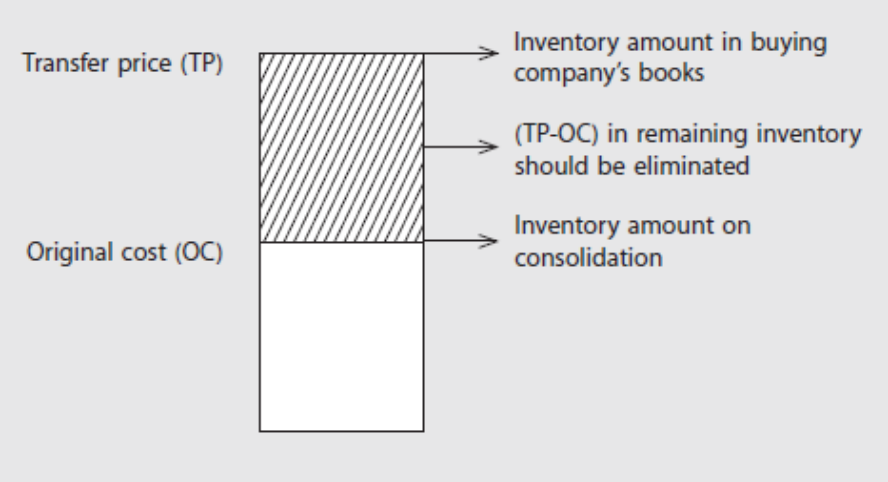
Profits and losses resulting from intragroup transactions that are recognized in assets, such as inventory and fixed assets, are eliminated in full (IFRS 10 App B: B86(c)). In other words, the carrying amounts of assets in the consolidated statement of financial position should not include any element of unrealized profit or loss arising from intercompany sales unless the loss is an impairment loss. In a later section, we will explain special considerations relating to transfers made at a loss.

Intragroup Transfers of Inventory and Fixed Assets

If the asset is *inventory*, it should be carried at the lower of cost and net realizable value. Cost is the original purchase price as transacted with an external party. The requirement in IAS 2 paragraph 9 to carry inventory at the lower of cost and net realizable value applies to both the economic (group) and legal entity. From the group's perspective, original cost is the exchange price when the goods were originally purchased from a third party. From the legal entity's perspective, original cost is the exchange price of the goods purchased from another group company. The other group company is an external party to the buying company from a legal perspective. The cost of inventory of the buying company would include the profit mark-up of the selling company.

A consolidation adjustment must be passed to eliminate the profit element included in the carrying amount of the inventory. When the inventory is eventually resold to a third party, the cost of sales of the inventory in the consolidated financial statements should be the original cost as transacted with unrelated third parties and not the transfer price invoiced by one group company to another. Figure 5.1 shows graphically the unrealized profit that should be eliminated from inventory.

FIGURE 5.1 Unrealized profit in inventory



If the asset is a fixed asset, it should be stated at its cost as determined from its original purchase transaction and deducted for any accumulated depreciation from the date of the original purchase to the current period. Adjustments in relation to fixed assets are discussed in the section "Special Considerations for Intercompany Transfers of Fixed Assets".

From a group's perspective, the depreciation of transferred fixed assets has to be calculated based on the original cost of the fixed asset and not the transfer price that is invoiced by the selling company to the buying company. If there is a revision of useful life or change in estimates, the changes for the group should be made with reference to the carrying amount based on original cost, and not the transfer price.

Adjustment to Opening Retained Earnings

When a transaction is recognized by a legal entity in one period and by the economic entity in another period, the straddling of the transaction across different periods requires consolidation adjustments to be passed to *opening retained earnings*. For example, Subsidiary Company sells inventory to Parent Company and makes a profit of $20,000 in 20x1. Parent Company resells 10% of the inventory to third parties in 20x1. Only 10% of the profit is earned by the group in 20x1. The opening retained earnings of Subsidiary Company in 20x2 includes "unrealized" profit of $18,000.

Opening retained earnings are disclosed as a separate line item in the consolidated statement of changes in equity. It then follows that the opening retained earnings in the current period's consolidated statement of changes in equity should agree exactly with the closing retained earnings as reported in the previous period's consolidated statement of changes in equity. In our example, the consolidated retained earnings at the end of 20x1 and the beginning of 20x2 should include the profit of $2,000 and not $20,000.

As discussed in Chapter 3, consolidation is a line-by-line summation of the items in the separate financial statements of the individual entities, which is then adjusted by consolidation entries. The sum of the opening retained earnings of the legal entities is not equal to the consolidated opening retained earnings because of timing differences in income recognition between the legal and economic entity. Hence, consolidation adjustments must be passed through again in the current year to ensure that the consolidated opening retained earnings is equal to the consolidated retained earnings at the previous year-end.[2] For example, unrealized profit from an intragroup transaction that is adjusted in one financial period is adjusted against opening retained earnings in the period immediately following it. The re-enactment continues for as long as the unrealized profit remains in retained earnings. If part of the inventory is resold to third parties, the amount in the re-enacted entry will be pro-rated accordingly. The application of this principle is explained in the illustrations in this chapter.

Tax Effects on Adjustments to Eliminate Profit or Loss in Carrying Amounts of Assets

Taxes on unrealized profits or losses have to be adjusted to align the *consolidated tax expense* with the *consolidated profit or loss*. When unrealized profits are eliminated from consolidated profit, but are included in the legal entity's taxable income, a *deferred tax asset* arises. IAS 12 describes the unrealized profit as a "deductible temporary difference" and requires the recognition of a deferred tax asset in the consolidated statement of financial position (IAS 12 Illustrative Examples B:11). Deferred tax asset is a type of prepaid tax. Although the profit is included in the taxable amount currently in the legal entity's tax returns, the tax on the unrealized profit is not an expense for group reporting. Hence, the tax expense relates to a future period and is deemed a deferred tax asset on the current period's statement of financial position. A consolidation adjustment is passed through to reclassify the tax expense to deferred tax asset in the consolidated statement of financial position. From a group's perspective, the tax expense is recognized only when the asset is resold to an external party or consumed or expensed off. The tax expense reported in the consolidated income statement should be aligned with the recognized profits for the economic entity. The consolidation adjustment in the year of transfer is as follows:

page 250

Dr Deferred tax asset
  Cr Tax expense

In the year when the inventory is resold to third parties, the tax expense is realized in the consolidated profit and loss:

Dr Tax expense
  Cr Opening retained earnings

The above is a combination of two entries. First, the entry in the previous year is re-enacted as follows in the current year. The entry to tax expense in the previous year is taken to opening retained earnings in the current year.

Dr Deferred tax asset
  Cr Opening retained earnings

Next, an entry is shown to effect the crystallization of the deferred tax asset (a prepaid tax account) into an actual tax expense as the unrealized profit is earned.

Dr Tax expense
  Cr Deferred tax asset

The net effect of the two entries will give rise to the composite entry as shown above.

Conversely, when unrealized losses resulting from intragroup transactions are deducted for tax purposes by the legal entity, the reduction in the tax expense in the current period of the legal entity should not be recognized as such in the consolidated financial statements. The unrealized loss is deemed as a "taxable temporary difference" to the group (IAS 12 Illustrative Examples A:14), and a *deferred tax liability* should be recognized. The effect of this treatment is to increase the consolidated tax expense in the current period of the group to align with the higher consolidated profit arising from the adjustment of the unrealized loss.[3]

page 251

The consolidation adjustment in the year of transfer is as follows:

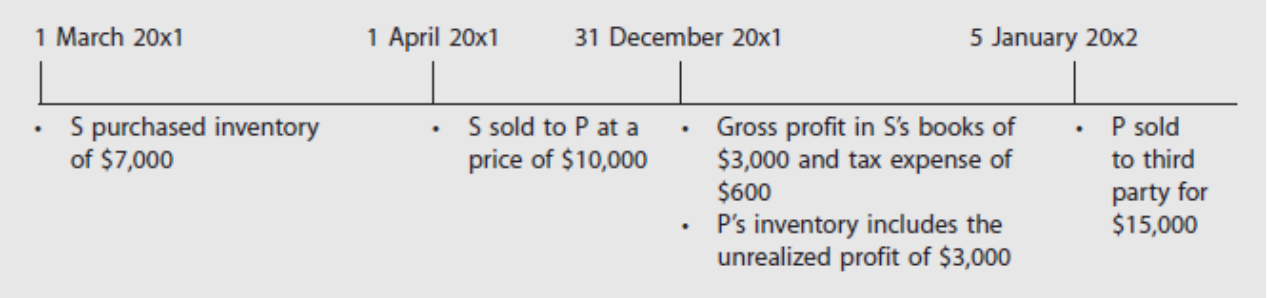
Dr Tax expense

Cr Deferred tax liability

The principles governing the elimination and adjustment of unrealized profit and loss are explained in the following illustrations. Illustration 5.1 shows the consolidation adjustments and the impact on the consolidated financial statements in a situation where a subsidiary sells inventory to its parent.

ILLUSTRATION 5.1 Upstream sale

During the financial year ended 31 December 20x1, the following sale was made to the parent company, P, by its 100% owned subsidiary, S. Assume a tax rate of 20%. For simplicity, assume that this was the only transaction that transpired over the two years for both companies. (In this example, we ignore the effect on non-controlling interests because S is a wholly owned subsidiary of P. The impact on non-controlling interests is considered in a subsequent section.)



Consolidation adjustments must be understood with reference to the original entries that are passed in the legal entities' separate financial statements. Hence, in the following consolidation adjustments, the legal entity, whose accounts are adjusted in the consolidation worksheet, is indicated in brackets. When the journal entry creates a new asset or liability for the group, the term "group" is indicated in brackets. The description in brackets is presented here to enhance understanding of the adjustment process but need not be presented otherwise.

Consolidation adjustments at 31 December 20x1

Dr Sales (S's I/S)	10,000	
Cr Cost of sales (S's I/S)		7,000
Cr Inventory (P's SFP)		3,000

Explanatory note:

This entry is passed to reduce current year profits and the overstatement of inventory because the gross profit of $3,000 is not yet realized from the group's perspective. The sales and cost of sales are entries in S's books, which are reversed out in the consolidation worksheet as they are not matched by offsetting entries in P. The inventory resides in P's statement of financial position; this entry removes the profit element from the book value of P's inventory.

Dr Deferred tax asset (Group SFP)	600	
Cr Tax expense (S's I/S)		600

Explanatory note:

As the profit is deemed as unearned in 20x1, the tax on the unrealized profit should not be recognized in 20x1; instead, the tax expense in S's books is considered as prepaid from the group's perspective, and is recognized as a deferred tax asset in accordance with IAS 12 *Income Taxes*. Tax expense should be aligned with income recognition.

Consolidation adjustments at 31 December 20x2

Dr Opening retained earnings (S's SFP)	3,000	
Cr Cost of sales (P's I/S)		3,000

Explanatory note:

This entry is passed to reduce the overstatement in the subsidiary's opening retained earnings. The entry shifts profits from the prior year's retained earnings to the current year's income when a sale to a third party is made. Note that S had recorded the profit as earned in its legal entities' financial statements in 20x1. Hence, the profit would be included in the opening retained earnings of S. A debit to opening retained earnings is necessary to remove the unrealized profit in S's retained earnings as at 1 January 20x2. A credit to cost of sales is necessary to reinstate the cost of sales recorded by P to the original purchase price of the inventory.

Let us consider the impact of a sale on tax expense in 20x2.

Dr Tax expense (Group's P/L)	600	
Cr Opening retained earnings (S's SFP)		600

Explanatory note:

Since the profit was realized in 20x2 through the external sale, tax expense should be recognized in the group income statement. As the tax expense was debited to S's income statement in 20x1, the opening retained earnings of S would have been understated by $600 from the group's perspective. The credit to opening retained earnings corrects the understatement while the debit to tax expense shows that the tax expense is now incurred for the group.

Alternatively, we can put through this pair of entries:

Dr Deferred tax asset (Group's SFP)	600	
Cr Opening retained earnings (S's SFP)		600
Dr Tax expense (Group's I/S)	600	
Cr Deferred tax asset (Group's SFP)		600

Let us consider a "what if" question to anchor the concepts further: What if the sale to an external party is made only in 20x3?

The debit entry to opening retained earnings is required to re-enact 20x1's entry, but the credit is now made to inventory as the profit is unrealized and the inventory of P is still overstated as at 31 December 20x2.

Dr Opening retained earnings (S's SFP)	3,000	
Cr Inventory (P's SFP)		3,000

If the external sale was not consummated in 20x2, the consolidation adjustment reinstates the prepaid tax and implicitly shifts the tax expense from the past period (as reflected in opening retained earnings) to the future period (as embodied in the deferred tax asset).

Dr Deferred tax asset (Group's SFP)	600	
Cr Opening retained earnings (S's SFP)		600

If we assume that this is the only transaction that transpired in the financial statements of P and S, the consolidation worksheets for the group for 20x1 and 20x2 are as follows:

Consolidation worksheet for 20x1

Consolidated Income Statement
For the Year Ended 31 December 20x1

	Combined P and S	Consolidation adjustment Dr	Consolidation adjustment Cr	Consolidated I/S
Sales	$10,000	$10,000		0
Cost of sales	(7,000)		$7,000	0
Gross profit	$ 3,000			0
Tax expense	(600)		600	0
Profit after tax	$ 2,400	$10,000	$7,600	0

Consolidated Statement of Financial Position
As at 31 December 20x1 (an extract)

	Combined P and S	Consolidation adjustment Dr	Consolidation adjustment Cr	Consolidated SFP
Cash	$ 2,400			$ 2,400
Inventory	10,000		$ 3,000	7,000
Deferred tax asset		$ 600		600
	$12,400	$ 600	$ 3,000	$10,000
Bank overdraft	$10,000			$10,000
Retained earnings	2,400	$10,000	$ 7,600	0
	$12,400	$10,000	$ 7,600	$10,000
Total adjustments		$10,600	$10,600	

The consolidated totals for 20x1 show that:

1. Inventory is carried at cost and not the marked-up price;
2. No profit is reported in the absence of any external sale; and
3. Tax expense is reclassified from an expense item in the income statement to an asset on the statement of financial position.

Consolidation worksheet for 20x2

Consolidated Income Statement For the Year Ended 31 December 20x2				
	Combined P and S	Consolidation adjustment		Consolidated I/S
		Dr	Cr	
Sales	$15,000			$15,000
Cost of sales	(10,000)		$3,000	(7,000)
Gross profit	$ 5,000			$ 8,000
Tax expense	(1,000)	$ 600		(1,600)
Profit after tax	$ 4,000			$ 6,400
Retained earnings, 1 January 20x2	2,400	3,000	600	0
Retained earnings, 31 December 20x2	$ 6,400	$3,600	$3,600	$ 6,400

Consolidated Statement of Financial Position As at 31 December 20x2 (an extract)				
	Combined P and S	Consolidation adjustment		Consolidated SFP
		Dr	Cr	
Cash	$6,400			$6,400
Retained earnings	$6,400	$3,600	$3,600	$6,400

The consolidated totals for 20x2 show that:

1. Reported sales amount is the external sales price, and the cost of sales is the original purchase price;
2. Tax expense is aligned with the reported profit; and
3. Opening retained earnings is zero. This position is consistent with the closing consolidated retained earnings from the previous year indicating a shift of profit from the previous year to the current year.

IMPACT ON NON-CONTROLLING INTERESTS ARISING FROM ADJUSTMENTS OF UNREALIZED PROFIT OR LOSS

Illustration 5.1 assumes a wholly owned subsidiary. In partially owned subsidiaries, the direction of the sale matters with respect to determining non-controlling interests' share of profits. Essentially, there are two types of sales, which are generally labelled as "downstream" or "upstream" sales.

Situation 1: "Downstream Sale"

When a parent sells to a subsidiary, that sale is commonly described as a "downstream sale," whereby the unrealized profit from the intercompany sale resides in the parent's books and the marked-up inventory remains on the subsidiary's statement of financial position. In such a situation, non-controlling interests' share of the profit of the subsidiary is not affected because the adjustment affects the parent's profits and not the subsidiary's.

Situation 2: "Upstream Sale"

If the sale is from a subsidiary to a parent, the profit that resides in the subsidiary's books is deemed as "unrealized" from the perspective of both parent and non-controlling interests. In this case, non-controlling shareholders assume the same perspective as the group. Since IFRS 10 paragraph B86(c) requires that "profits and losses resulting from intragroup transactions that are recognized in assets, such as inventory and fixed assets, are eliminated in full", it follows that the non-controlling interests' share of the unrealized profit or loss should also be adjusted from the carrying amount of the asset. This consistent treatment of unrealized profit or loss for both parent and non-controlling interests is an application of the entity theory of consolidation. This treatment also applies if one subsidiary sells to another subsidiary.

Illustration 5.2 explains the consolidation adjustments that have to be passed for upstream and downstream sales of inventory in a two-year setting.

ILLUSTRATION 5.2 Multi-period effects of "upstream" and "downstream" sales

P invested in 70% of the shares of S at its incorporation on 1 January 20x3. The table below provides information on intercompany transfers of inventory. Assume a tax rate of 20%. Net profit after tax of S was $800,000 for the year ended 31 December 20x3 and $900,000 for the year ended 31 December 20x4. No dividends were declared in 20x3 and 20x4. The transfers of inventory between P and S are shown below:

page 256

	20x3	20x4
Sales of inventory from P to S	$ 60,000	
Original cost of inventory	(50,000)	
Gross profit	$ 10,000	
Percentage unsold to third parties at year-end	10%	4%
Sales of inventory from S to P	$200,000	
Original cost of inventory	(170,000)	
Gross profit	$ 30,000	
Percentage unsold to third parties at year-end	30%	0%

Required:

Prepare the consolidation adjustments for the year ended 31 December 20x3 and 31 December 20x4 to:

1. Eliminate intercompany sales;
2. Adjust unrealized profit in inventory;
3. Adjust the tax effects of the unrealized profit in inventory; and
4. Allocate share of current profit and opening retained earnings to non-controlling interests.

Consolidation adjustments at 31 December 20x3

CJE1: Elimination of intercompany sales and adjustment of unrealized profit from downstream sale

Dr Sales	60,000		
r Cost of sales		59,000	
r Inventory		1,000	(10% × $10,000)

Explanatory notes:

- Sales to S are fully eliminated as the consolidated financial statements should reflect only transactions with external parties.
- Cost of sales to be eliminated is derived as follows:

Cost of sales (as reported in P's I/S)	$50,000	
Cost of sales (as reported in S's I/S)	54,000	(90% of $60,000)
Combined cost of sales	104,000	
Cost of sales (from the group's perspective)	(45,000)	(90% of $50,000)
Amount to be eliminated	$59,000	

- The above working compares the combined cost of sales, which is the reported cost of sales from the legal entities' perspectives and the cost of sales from the group or economic entity's perspective. From the legal entity's perspective, the combined cost of sales is $104,000. However, from the economic entity's perspective, the internal cost of sales should not be recognized; we only want to include the cost of sales based on the original cost of the inventory for actual sales transacted with third parties. Since 90% of the inventory was sold to third parties, the consolidated cost of sales to be reported is 90% of the original cost of $50,000. Hence, we can analytically determine the cost of sales that should be reported. However, what is reported by the legal entities is $104,000. The difference is, thus, the consolidation adjustment.

page 257

- Although consolidation seems complex, the adjustments are essentially a comparison of "what is reported" (the legal entity's perspective) against "what should be reported" (the economic entity's perspective) and adjusting for the difference. We have to keep in mind to always determine the reported numbers from an economic entity's perspective.
- The unrealized profit overstates the inventory balance at year-end. CJE1 adjusts the carrying amount of inventory to its original cost by removing the unrealized profit included in inventory. We can also analytically determine the consolidated balance of the inventory account. Remember that the reported inventory for the economic entity is the lower of original cost (not transfer price) and the net realizable value. However, for the legal entity, "cost" is the transfer price paid to another entity. The fact that the other entity is a group company is irrelevant to the stand-alone legal entity. Let us analytically determine the balance, which should be reported in the consolidated statement of financial position and the amount that is reported by the legal entity. Because the starting point of consolidation is the legal entity's financial statements, we will need to make an adjustment to remove the "profit" mark up from the unsold inventory. The following table shows the comparison as at 31 December 20x3.

Item	How it is calculated	Amount
Inventory as reported in the buying company's financial statements ("What is")	Percentage unsold × Transfer price	$6,000 (10% × $60,000)
Inventory, which should be reported in the consolidated financial statements ("What should be")	Percentage unsold × Original cost	$5,000 (10% × $50,000)
	Consolidation adjustment	$1,000

In CJE1, the cost of sales adjustment is determined as a residual. However, we should try to understand what this figure is made up of. An alternative way to present CJE1 is to pass two separate entries, CJE1(a) and CJE1(b). These two entries help to explain the adjustment to cost of sales.

- CJE1 is a composite entry of two sub-entries. For practical purposes, only one set of entries is required, but it is helpful to understand the nature of CJE1(a) and CJE1(b). If the composite entry CJE1 is used, we should pass through the sales and inventory entries first, and the cost of sales is a residual figure.

CJE1(a) eliminates the sales of P against the cost of sales of S for the proportion of inventory that was resold to third parties during 20x3.

CJE1(a): Elimination of realized sales from downstream sale		
Dr Sales (P)	54,000 (90% × $60,000)	
Cr Cost of sales (S)		54,000

Explanatory notes:

- Ninety percent of the sales by P to S is ultimately resold to third parties. Hence, this block of sales in P's financial statements is exactly offset by the cost of sales in S's financial statements. S would record the cost of sales at the price invoiced by P. Although there is no "bottom-line" effect on net profit, the group needs to put through this elimination entry to ensure that the disclosed sales and cost of sales figures in the consolidated financial statements are not overstated.
- There is no effect on the statement of financial position as there is no unrealized profit included in the inventory with respect to this block of sales.
- The tax effects with respect to the realized portion cancel out. As tax is levied on a legal entity basis, the profit in P's books will be subject to tax. However, the higher cost of sales in S's books will result in a higher tax deduction. As tax expense is a single line item in the consolidated financial statements, the offset between P's higher tax expense and S's lower tax expense ensures that the tax expense is not overstated.

CJE1(b) reverses the sales, cost of sales and profit in inventory for the proportion of inventory that remained unsold as at 31 December 20x3.

CJE1(b): Reversal of unrealized sales and removal of profit from inventory		
Dr Sales (P)	6,000 (10% × $60,000)	
Cr Cost of sales (P)		5,000 (10% × $50,000)
Cr Inventory (S)		1,000

Explanatory notes:

- A profit element of $1,000 from an intragroup transaction is included in the carrying amount of the inventory. The carrying amount of the inventory in the consolidated statement of financial position has to be adjusted to the lower of cost and net realizable value. Cost is the original purchase price as transacted with third parties.
- Hence, an adjustment is required to remove the unrealized profit from S's inventory in the statement of financial position. The adjustment essentially brings the carrying amount of inventory to the original cost, as recorded in P's books, before the transfer was made.

- This adjustment effectively reverses the sales and cost of sales of P on the unrealized portion, and puts the consolidated financial statements in a position as if the transfer never happened.

Hence, the rationale for CJE1(a) and CJE1(b) is different. CJE1(a) eliminates the sales of P against the cost of sales of S to ensure the reported figures in the consolidated income statement are not overstated. CJE1(b), on the other hand, reverses out the transaction altogether as the profit is not yet earned from a group's perspective. If we combine CJE1(a) and CJE1(b), we arrive at CJE1. Practically, there is no need to pass CJE1(a) and CJE1(b) separately, but it is meaningful to understand the reasons for adjusting cost of sales. Thus, the consolidation adjustment to cost of sales of $59,000 in CJE1 comprises two elements. We have explained the two elements in CJE1(a) and CJE1(b) and summarized the rationale and calculations in Table 5.2.

page 259

TABLE 5.2 Rationale for the cost of sales adjustment in consolidation

Rationale	How it is calculated	Amount
Cost of sales of the resold portion of the buying company is eliminated against sales of the selling company because it is an intragroup transaction. The elimination is also required because there is double counting in cost of sales. The original cost of sales is already reported in the selling company's income statement.	Cost of sales eliminated = Percentage resold to third parties × Transfer price	$54,000 (90% × $60,000)
Cost of sales of the unsold portion of inventory is reversed out because the inventory has not been sold and still remains within the economic entity.	Cost of sales reversed = Percentage unsold × Original cost	$ 5,000 (10% × $50,000)
	Consolidation adjustment	$59,000

The next entry, CJE2, shows the consolidation adjustment for the tax effects on CJE1.

CJE2: Adjustment for the tax effects on unrealized profit in inventory from downstream sale

Dr Deferred tax asset	200	
Cr Tax expense		200 (20% × $1,000)

Explanatory notes:

- Since the unrealized profit is deemed as "unearned" from the group's perspective, no tax expense should be recognized on the profit in the consolidated income statement.
- Tax expense is overstated and reclassified to the statement of financial position as a deferred tax asset as it relates to a future period.

Illustration 5.2 also presents a situation where S sold inventory to P. When a subsidiary sells an asset to the parent, the transfer is referred to as an upstream sale. We need to eliminate the sales and cost of sales in the same manner as we eliminated the sales and cost of sales of the downstream sale in CJE1. The following entries CJE3 and CJE4 show the profit and tax adjustments, respectively.

CJE3: Elimination of intercompany sales and adjustment of unrealized profit from upstream sale

Dr Sales	200,000	
Cr Cost of sales		191,000

Cr Inventory		9,000	(30% × $30,000)

Explanatory notes:

- Sales to P of $200,000 have to be eliminated in full as this is an intragroup transaction.
- Inventory is overstated by $9,000 as it includes unrealized profit. We have to restate the inventory to the original cost as transacted with third parties. We can analytically determine the inventory balance in the consolidated statement of financial position and compare it with what is reported in the legal entity's financial statements, as follows:

Item	How it is calculated	Amount
Inventory as reported in the buying company's financial statements ("What is")	Percentage unsold × Transfer price	$60,000 (30% × $200,000)
Inventory, which should be reported in the consolidated financial statements ("What should be")	Percentage unsold × Original cost	$51,000 (30% × $170,000)
	Consolidation adjustment	$ 9,000

- Cost of sales is the residual figure in this elimination entry. However, we can analyze the residual in a few ways. First, we can compare the combined cost of sales in the legal entities' financial statements with the amount that should be reported by the economic entity.

Cost of sales (as reported in S's I/S)	$170,000	
Cost of sales (as reported in P's I/S)	140,000	(70% of $200,000)
Combined cost of sales	$310,000	
Cost of sales (from the group's perspective)	(119,000)	(70% of $170,000)
Amount to be eliminated	$191,000	

Alternatively, we can analyze the total consolidation adjustment to two sub-parts: the cost of sales of the resold portion that should be eliminated against intercompany sales and the amount of the cost of sales of the unsold portion that should be reversed as there is no external transaction. The following table shows how the two sub-parts add up to give the total consolidation adjustment. As explained earlier, this analysis is to help us understand the nature of the consolidation adjustment on cost of sales. However, practically, the cost of sales adjustment may be determined as a residual after the sales and inventory adjustments are made.

Rationale	How it is calculated	Amount
Cost of sales of the resold portion	Cost of sales eliminated = Percentage resold to third parties × Transfer price	$140,000 (70% × $200,000)
Cost of sales of the unsold portion of inventory	Cost of sales reversed = Percentage unsold × Original cost	$ 51,000 (30% × $170,000)
	Consolidation adjustment	$191,000

CJE4: Adjustment for the tax effects on unrealized profit in inventory from upstream sale

Dr Deferred tax asset	1,800	
Cr Tax expense		1,800 (20% × $9,000)

Explanatory note:

As with CJE2, the tax expense on the unrealized profit on the upstream sale has to be reclassified to deferred tax asset to align the recognition of tax expense with the underlying profit.

In this illustration, P owns 70% of S. Hence, the consolidation process has to attribute 30% of the net profit of S to non-controlling interests. The next entry CJE5 reflects the allocation of profit to non-controlling interests. Without this entry, the equity "bucket" belonging to the parent's shareholders will be overstated and the equity "bucket" of non-controlling interests will be understated.

CJE5: Allocation of current profit after tax to non-controlling interests

Dr Income to non-controlling interests (I/S)	237,840	
Cr Non-controlling interests (SFP)		237,840

Net profit after tax of S for 20x3	$800,000
Less unrealized profit from upstream sale (CJE3)	(9,000)
Add tax expense on unrealized profit from upstream sale (CJE4)	1,800
Adjusted net profit after tax of S for 20x3	$792,800
Non-controlling interests' share of profit after tax for 20x3 at 30%	$237,840

Explanatory notes:

- Non-controlling interests' share of profit after tax is adjusted for the unrealized profit on the upstream sale and its tax effect.
- Why is CJE5 required? Why do we not simply pro-rate CJE3 and CJE4 between non-controlling and parent's share of the unrealized profit and related tax expense? CJE5 is required because of the structure of the consolidated income statement. Consolidated profit after tax relates to the entity as a whole and is presented before the allocation to non-controlling interests. Hence, the total amount of adjustments must be effected to the consolidated profit after tax. Allocation to non-controlling interests, shown as a separate line item after profit after tax, incorporates non-controlling interests' share of the adjustments.

The next set of entries show the consolidation adjustments that are required in 20x4. Because the transfers of inventory were made in 20x3 with a portion resold in 20x4, a number of these entries would adjust opening retained earnings to remove unrealized profit as at 1 January 20x4.

Consolidation adjustments at 31 December 20x4

CJE1: Adjustment of unrealized profit from downstream sale in retained earnings as at 1 January 20x4

Dr Opening retained earnings	1,000 (10% × $10,000)	
Cr Cost of sales		600 (6% × $10,000)
Cr Inventory		400 (4% × $10,000)

Explanatory notes:

- P's opening retained earnings are overstated by the unrealized profit as at January 20x4. Recall that 10% of the gross profit of P of $10,000 was "unrealized" as 10% of the inventory remained within the group at 31 December 20x3. This entry has to be passed through each year for as long as the inventory is unsold.
- In this situation, the inventory is only partially sold by 31 December 20x4. Four percent remained unsold while 6% was sold to third parties.

Item	How it is calculated	Amount
Cost of sales as reported in the buying company's financial statements ("What is")	Percentage resold × Transfer price	$3,600 (6% × $60,000)
Cost of sales, which should be reported in the consolidated financial statements ("What should be")	Percentage resold × Original cost	$3,000 (6% × $50,000)
	Consolidation adjustment	$600

The profit on the sold portion is credited to cost of sales to adjust the cost of sales to the original cost. Simply put, we can say that 6% of the gross profit of P is "realized" or earned because the inventory has been resold to third parties. Hence, 6% of the original gross profit of $10,000 is credited to the income statement. On another angle, we can compare the cost of sales at two levels (legal and economic entity) and make the appropriate adjustment.

- The unrealized profit at the end of the year is credited to inventory to adjust the inventory to its original cost. Four percent of the gross profit of P should still not be recognized because the inventory remains within the group. Hence, an adjustment of $400 or 4% of $10,000 is effected to inventory.

CJE2: Adjustment of tax on unrealized profit from downstream sale in retained earnings as at 1 January 20x4

Dr Tax expense	120	
Dr Deferred tax asset	80	
Cr Opening retained earnings		200

Explanatory note:

This entry reflects the tax effects of CJE1.

CJE3: Allocation of post-acquisition retained earnings as at 1 January 20x4

Dr Opening retained earnings	240,000	
Cr Non-controlling interests		240,000

Explanatory note:

Since 20x3 is the first year of incorporation, the share of profit is 30% of $800,000 (assuming no dividends are paid) is allocated to non-controlling interests. We use the unadjusted profit after tax as a base to compute non-controlling interests' share of post-acquisition retained earnings. The adjustments for unrealized profit and tax on unrealized profit are shown separately below in CJE4 and CJE5. The combined effect of CJE3, CJE4, and CJE5 results in non-controlling interests' share of adjusted opening retained earnings.

CJE4: Adjustment of unrealized profit from upstream sale in retained earnings as at 1 January 20x4

Dr Opening retained earnings	6,300 (70% × 30% × $30,000)	
Dr Non-controlling interests	2,700 (30% × 30% × $30,000)	
Cr Cost of sales		9,000 (30% × $30,000)

Explanatory notes:

- Opening retained earnings are adjusted with the parent's share of the unrealized profit adjustment. Note that retained earnings as reported in the consolidated financial statements belong to the parent's shareholders. Hence, non-controlling interests' share is shown separately.
- Since non-controlling interests adopt the same perspective as the parent with respect to the elimination of profit on upstream sale, non-controlling interests are debited for their share of unrealized profit in inventory at the start of the year. This entry re-enacts the adjustment to non-controlling interests' share of profit in the previous year. Recall that non-controlling interest is a composite equity item and includes non-controlling interests' share of retained earnings.
- The credit entry reflects the event(s) that transpires in the current year with respect to the inventory that was transferred in the previous period. The inventory is sold; hence, a credit entry to cost of sales is necessary to adjust P's cost of sales to the original cost. We can now recognize the unrealized profit as at 31 December 20x3 in full in 20x4. Recall that the unrealized profit is $9,000, or 30% of $30,000. If we analyze the cost of sales at the two levels, we will arrive at a differential that is $9,000. The following table explains the differential.

Item	How it is calculated	Amount
Cost of sales as reported in the buying company's financial statements ("What is")	Percentage resold × Transfer price	$60,000 (30% × $200,000)
Cost of sales, which should be reported in the consolidated financial statements ("What should be")	Percentage resold × Original cost	$51,000 (30% × $170,000)
	Consolidation adjustment	$9,000

CJE5: Adjustment of tax on unrealized profit from upstream sale as at 1 January 20x4

Dr Tax expense	1,800	
Cr Opening retained earnings		1,260
Cr Non-controlling interests		540

Explanatory note:

CJE5 shows the tax effects of CJE4.

CJE6: Allocation of current profit after tax to non-controlling interests

Dr Income to non-controlling interests (I/S)	272,160	
Cr Non-controlling interests (SFP)		272,160
Net profit after tax of S for 20x4		$900,000
Add realized profit from upstream sale (CJE4)		9,000
Less tax expense on realized profit from upstream sale (CJE5)		(1,800)
Adjusted net profit after tax of S for 20x4		$907,200
Non-controlling interests' share of profit after tax for 20x4		$272,160

Explanatory notes:

- CJE6 shows the delayed recognition of previously unrecognized profit on the intercompany upstream transfer. Since the inventory is resold to third parties, the profit is earned and the realized profit and tax effects are added to the net profit after tax of S.
- You should note that only realized profit and tax effects arising from the current sale of inventory transferred from group companies in *previous* periods are added back. Conversely, only the unrealized profit and tax effects relating to unsold inventory transferred from group companies in the *current* period are deducted from the current year profit after tax.

SPECIAL CONSIDERATIONS FOR INTERCOMPANY TRANSFERS OF FIXED ASSETS

When fixed assets are transferred at a marked-up price between group companies, the unrealized profit (or loss) must be eliminated from the carrying amount of the fixed assets. From the group's point of view, the fixed assets remain within the group and it must account for the fixed assets as if the transfer did not take place at all. The following adjustments are, therefore, necessary:

1. The carrying amount of the fixed asset must be reinstated to the original cost and accumulated depreciation of the selling company as of the date of the transfer.
2. The profit or loss on the intercompany sale of the fixed asset must be adjusted out of the consolidated income statement, if the sale occurred in the current period. If the sale occurred in a prior period, the adjustment is made against consolidated retained earnings with consequential impact on non-controlling interests, provided the transfer is an upstream sale.
3. Depreciation subsequent to the transfer must be determined on the basis of the original historical cost of the asset and the assets estimated useful life (incorporating any change in estimates subsequent to purchase). If the estimated useful life has changed, the group depreciation should be the net book value based on original cost divided by the estimated useful life. Essentially, the "new" depreciation that is expensed to the legal entity's financial statements is calculated on the basis of the transfer price. The difference between the legal entity depreciation and the group depreciation for the current period must be adjusted to the consolidated income statement. The cumulative effects of the adjustments to depreciation relating to prior periods must be adjusted to consolidated retained earnings.
4. The profit or loss on the intercompany sale of the fixed asset is "realized" through the process of depreciation. Unlike inventory, which is held for sale, fixed assets are held for the production of goods and services. Hence, the cost of the fixed asset is consumed through usage over the remaining useful life. From a group's perspective, unrealized profit or loss arising from the transfer of the fixed asset artificially inflates (or reduces)

page 265

the cost of the asset. The excess is "realized" through a series of higher depreciation charges in periods after the transfer. Over the life of the asset, the aggregate of the additional depreciation equals the "profit" on the sale.

5. How is the profit realized through depreciation? We explained earlier that the profit on sale of fixed asset is "realized" through the depreciation process. Essentially, the profit earned by the selling company will be offset by the higher depreciation incurred by the buying company. Since both companies are in the same "family", it is simply a case that one member has higher earnings while another has lower earnings. However, the reduction in earnings of the buying company arises over current and future periods and thus, a consolidation adjustment has to be passed through to remove the unrealized profit and to correct the excess depreciation. From a group's perspective, the profit on sale is only a timing difference that will unwound through excess depreciation. We show it by way of an analytical working:

Profit on sale of fixed assets = Proceeds (TP) – Net book value (NBV) of fixed assets

In a transfer of fixed assets between group companies, proceeds will be the transfer price (TP). We compare the legal entity depreciation ("what is") and the group depreciation ("what should be").

Legal entity depreciation = TP/Remaining Useful Life

Group depreciation = NBV/Remaining Useful Life

(In calculating the group depreciation, the most up-to-date useful life estimates should be used. Hence, we do not use the original useful life, which may be redundant at the point of transfer. The numerator for group depreciation is the net book value at the point of transfer. The net book value is the remaining undepreciated cost.)

$$\begin{aligned}\text{Excess depreciation} &= \text{Legal entity depreciation} - \text{Group depreciation}\\ &= \text{TP/Remaining Useful Life} - \text{NBV/Remaining Useful Life}\\ &= \text{(TP} - \text{NBV)/Remaining Useful Life}\\ &= \text{Profit on sale of fixed assets/Remaining Useful Life}\end{aligned}$$

From the above analysis, we arrive at the conclusion that:

Profit on sale of fixed assets = Excess depreciation × Remaining useful life

6. What if the transferred fixed asset is disposed or rendered obsolete before the end of the useful life? The "realization" is then accelerated and crystallized at the event of the sale or impairment. Our analytical equation will then be revised. If the transferred fixed asset is resold to third parties, the equality is as follows:

page 266

Profit on sale of fixed assets = (Excess depreciation × Expired periods) + Excess profit on resale

$$\begin{aligned}\text{Excess profit on resale} &= \text{Legal entity profit on sale} - \text{Group profit on sale}\\ &= \text{Proceeds} - [\text{TP/Remaining useful life} \times \text{Unexpired life}]) -\\ &\quad (\text{Proceeds} - \text{NBV/Remaining useful life} \times \text{Unexpired life})\\ &= \text{(TP} - \text{NBV)/Remaining useful life} \times \text{Unexpired life}\end{aligned}$$

If the transferred fixed asset is impaired, the carrying amount of the fixed asset will be written down to the recoverable amount. A very simple approach to figuring out what to adjust is to ask this question: What is the difference between the carrying amount of the asset of the legal entity and the group? If both the legal and the

group entity have to write down the carrying amount to the recoverable amount, there will be no difference in the reported balances in the legal entity and group financial statements. Hence, the "unrealized" profit is unwound totally at this point when the carrying amount at the two levels converges. In the later section on the transfer of assets at a loss, we discuss the interactions among original cost, transfer price, and recoverable amount.

7. Tax effects should be adjusted in line with the adjustments on unrealized profit or loss and the subsequent corrections of depreciation. Tax effects on unrealized profit are accounted as deferred tax asset in the consolidated statement of financial position. The tax effects on the correction of the excess depreciation will set off the deferred tax asset over the remaining useful life.
8. The principles and processes that relate to the adjustment of profit on transfer of fixed assets between group companies also apply to other long-lived assets such as intangible assets.

If fixed assets are carried at revalued amounts, other comprehensive income arising from the revaluation must be determined on the basis of the original cost of the fixed assets as transacted with the external supplier. Consolidation adjustments are required to measure other comprehensive income from the economic entity's perspective.

Impact on Non-controlling Interests when an Unrealized Profit Arises from an Intragroup Transfer of Fixed Assets

If the transfer is a downstream sale, the correction of the profit (or loss) and the correction of excess (or shortfall) in depreciation have no impact on the allocation of current profit after tax to non-controlling interests. The elimination of the unrealized profit from the carrying amount of the fixed assets will apply only to the parent. Illustration 5.3 explains the consolidation adjustments relating to such a transfer.

If the transfer is an upstream sale, the correction of the profit (or loss) and the correction of excess (or shortfall) in depreciation will be adjusted to profit to determine the non-controlling interests' share. Adjustments to unrealized profit and cumulative depreciation of past periods from upstream transfers are allocated to non-controlling interests as well.

Non-controlling interests' share of profit is adjusted for any excess or shortfall in depreciation arising from an upstream sale of fixed assets. As explained above, unrealized profit on the sale of fixed assets is realized through the process of depreciation. Hence, the non-controlling interests' share of unrealized profit from upstream sales is unwound through the subsequent depreciation on the unrealized profit. It does not matter that the depreciation expense is recorded in the parent's books. The two transactions (unrealized profit in the subsidiary's books and the depreciation expense in the parent's books) are linked and would thus have an impact on non-controlling interests. Tax effects on the profit and depreciation adjustments are also adjusted to non-controlling interests.

ILLUSTRATION 5.3 "Downstream" transfer of fixed assets

On 1 January 20x2, Parent (P) sold equipment to Subsidiary (S) for $360,000. The original cost of the equipment was $400,000, which was depreciable over ten years from 1 January 20x0. S depreciated the equipment over the remaining useful life of eight years from 1 January 20x2. Assume a tax rate of 20%.

$$\begin{aligned}\text{Profit on sale recorded by P} &= \text{Sales price} - \text{Net book value}\\ &= \$360{,}000 - (\$400{,}000 - \$80{,}000)\\ &= \$360{,}000 - \$320{,}000\\ &= \$40{,}000\end{aligned}$$

Entry in P's books

Dr Cash	360,000	
Dr Accumulated depreciation	80,000	
Cr Equipment, cost		400,000
Cr Profit on sale		40,000

Profit on sale of fixed assets to S

Entry in S's books

Dr Equipment	360,000	
Cr Cash		360,000

Purchase of fixed assets from P

Dr Depreciation expense	45,000	
Cr Accumulated depreciation		45,000

Depreciation expense for 20x2

As at 31 December 20x2

	Status quo	With sale	Amount to be restored/ adjusted	
Cost of asset	$400,000	$360,000	$40,000	
Accumulated depreciation	120,000	45,000	75,000	80,000
Current depreciation	40,000	45,000	5,000	
Profit on sale	–	40,000	40,000	
Tax on profit	–	8,000	8,000	

The consolidation adjustments are shown below. To enhance clarity, each reversing or adjusting entry shows, in brackets, the entity whose balances have to be adjusted in the worksheet:

Consolidation adjustments at 31 December 20x2

CJE1: Adjustment of unrealized profit

Dr Equipment (S)	40,000	
Dr Profit on sale (P)	40,000	
Cr Accumulated depreciation (S)		80,000

This entry reinstates the equipment to original cost and the accumulated depreciation as at the date of transfer and reverses the profit. (The debit adjustment of $40,000 increases the cost of fixed assets for the group to the original cost of $400,000. The credit entry reinstates accumulated depreciation to $80,000, which is the balance in P's books prior to the transfer. Accumulated depreciation of $80,000 is made up of two years of depreciation ($400,000/10 × 2) from 1 January 20x0 to 1 January 20x2.)

CJE2: Reverse tax on profit on sale

Dr Deferred tax asset (Group's SFP)	8,000	
Cr Tax expense (P)		8,000

CJE3: Correct the over-depreciation on unrealized profit included in equipment

Dr Accumulated depreciation (S)	5,000	
Cr Depreciation (S)		5,000

Depreciation recorded by S in 20x2 ($360,000/8)	$45,000
Original depreciation had P not sold to S ($400,000/10)	40,000
Excess depreciation corrected for group reporting	$ 5,000

Alternatively: Excess depreciation = Unrealized profit/Remaining useful life
= $40,000/8
= $5,000

CJE4: Increase in tax arising from correction of over-depreciation

Dr Tax expense (S)	1,000	
Cr Deferred tax asset (Group's SFP)		1,000

Consolidation adjustments at 31 December 20x3

CJE1: Adjustment of unrealized profit in the prior year

Dr Equipment (S)	40,000	
Dr Opening retained earnings (P)	40,000	
Cr Accumulated depreciation (S)		80,000

Non-controlling interests are not affected because the transfer is a downstream sale

CJE2: Reverse tax on profit on sale arising in the prior year

Dr Deferred tax asset (Group's SFP)	8,000	
Cr Opening retained earnings (P)		8,000

CJE3: Reverse excess depreciation for 20x2

Dr Accumulated depreciation (S)	5,000	
Cr Opening retained earnings (S)		5,000

CJE4: Increase in tax from reversal of excess depreciation for 20x2

Dr Opening retained earnings (S)	1,000	
Cr Deferred tax asset (Group's SFP)		1,000

CJE5: Correct the current over-depreciation on unrealized profit included

in equipment

Dr Accumulated depreciation (S)	5,000	
Cr Depreciation (S)		5,000

Depreciation recorded by S in 20x3 ($360,000/8)	$45,000
Original depreciation had P not sold to S ($400,000/10)	40,000
Excess depreciation corrected for group reporting	$ 5,000

CJE6: Increase in tax arising from correction of over-depreciation

Dr Tax expense (S)	1,000	
Cr Deferred tax asset (Group's SFP)		1,000

The correction of the excess depreciation continues on a yearly basis until the asset is fully depreciated. Since fixed assets are not held for sale, the unrealized profit on the sale of fixed assets is deemed "realized" when the asset is fully depreciated. When the asset is fully depreciated, the following consolidation adjustments will offset each other at, and after, the end of the eight years from the date of transfer:

CJE1: Reinstate to original cost and accumulated depreciation and reverse profit

Dr Equipment (S)	40,000	
Dr Opening retained earnings (P)	40,000	
Cr Accumulated depreciation (S)		80,000

CJE2: Correction of past excess depreciation

Dr Accumulated depreciation (S)	40,000	
Cr Opening retained earnings (S)		40,000

$5,000 × 8 = $40,000

The tax effects will also offset each other fully, assuming a tax rate of 20%.

CJE3: Tax effects on unrealized profit on sale of fixed assets

Dr Deferred tax asset	8,000	
Cr Opening retained earnings (P)		8,000

CJE4: Tax effects on correction of excess depreciation

Dr Opening retained earnings (S)	8,000	
Cr Deferred tax asset		8,000

What if the transfer of the fixed asset is from a partially owned subsidiary to its parent? Non-controlling interests will have to bear a proportion of the adjustments. Consider the impact on the consolidation journal entries in an extension

to Illustration 5.3 where the transfer is featured as an upstream sale.

ILLUSTRATION 5.3 EXTENSION "Upstream" transfer of fixed assets

On 1 January 20x2, Subsidiary (S) sold equipment to Parent (P) for $360,000. The original cost of the equipment was $400,000, which was depreciable over ten years from 1 January 20x0. P depreciated the equipment over the remaining useful life of eight years from 1 January 20x2. Net profit after tax of S for the year ended 31 December 20x2 and 31 December 20x3 was $500,000 and $800,000 respectively. P owned 90% of S. Assume a tax rate of 20%.

Consolidation adjustments at 31 December 20x2

CJE1: Adjustment of unrealized profit		
Dr Equipment (P)	40,000	
Dr Profit on sale (S)	40,000	
Cr Accumulated depreciation (P)		80,000
CJE2: Reverse tax on profit on sale		
Dr Deferred tax asset (Group's SFP)	8,000	
Cr Tax expense (S)		8,000

CJE3: Correct the current over-depreciation on unrealized profit included in equipment		
Dr Accumulated depreciation (P)	5,000	
Cr Depreciation (P)		5,000
Depreciation recorded by P in 20x2 ($360,000/8)		$45,000
Original depreciation had S not sold to P ($400,000/10)		40,000
Excess depreciation corrected for group reporting		$ 5,000
CJE4: Increase in tax arising from correction of over-depreciation		
Dr Tax expense (P)	1,000	
Cr Deferred tax asset (Group's SFP)		1,000

CJE5: Allocation of current year income to non-controlling interests			
Dr Income to non-controlling interests	47,200		
Cr Non-controlling interests		47,200	
Net profit after tax of S for year ended 31 December 20x2		$500,000	
Less unrealized profit on sale	$(40,000)		
Add tax expense on unrealized profit on sale	8,000	(32,000)	(Note 1)
Add realization through depreciation	5,000		(Note 1)
Less tax expense on depreciation	(1,000)	4,000	(Note 1)
Adjusted net profit after tax of S for 20x2		$472,000	
Non-controlling interests' share at 10%		$ 47,200	

Note 1: Although the excess depreciation is recorded in P's books, it is a realization of the profit originating from S's books as depreciation depicts the consumption of the benefits of the fixed asset. The correction of the excess depreciation affects the non-controlling interests' share of profit. Depreciation (net of tax) will "unwind" the original profit on sale (net of tax) until the end of the remaining useful life of eight years is reached.

Consolidation adjustments at 31 December 20x3

CJE1: Adjustment of unrealized profit in the prior year				
Dr Equipment (P)	40,000			
Dr Opening retained earnings (S)	36,000	(90% × $40,000)		
Dr Non-controlling interests	4,000	(10% × $40,000)	(Note 2)	
Cr Accumulated depreciation (P)				80,000

Note 2: Since this is an upstream sale, non-controlling interests share a proportion of the adjustment to unrealized profit arising from the prior period. Adjustment to opening retained earnings reflects only the parent's share.

CJE2: Reverse tax on profit on sale for prior year			
Dr Deferred tax asset (Group's SFP)	8,000		
Cr Opening retained earnings (S)		7,200	(20% × $36,000)
Cr Non-controlling interests		800	(20% × $4,000)

CJE3: Reverse excess depreciation for prior year				
Dr Accumulated depreciation (P)	5,000			
Cr Opening retained earnings (P)		4,500	(90% × $5,000)	
Cr Non-controlling interests		500	(10% × $5,000)	(Note 3)

Note 3: Non-controlling interests bear a share of the reversal entry relating to excess depreciation, since depreciation is a systematic amortization of the unrealized profit.

CJE4: Increase in tax from reversal of excess

depreciation for 20x2 (prior year)

Dr Opening retained earnings (P)	900 (20% × $4,500)	
Dr Non-controlling interests	100 (20% × $500)	
Cr Deferred tax asset (Group's SFP)		1,000 (20% × $5,000)

CJE5: Correct the current over-depreciation on unrealized profit included in equipment

Dr Accumulated depreciation (P)	5,000	
Cr Depreciation (P)		5,000

Depreciation recorded by P in 20x3 ($360,000/8)	$45,000
Original depreciation had S not sold to P ($400,000/10)	40,000
Excess depreciation corrected for group reporting	$ 5,000

CJE6: Increase in tax arising from correction of over-depreciation

Dr Tax expense (P)	1,000	
Cr Deferred tax asset (Group's SFP)		1,000

CJE7: Allocation of current year income to non-controlling interests

Dr Income to non-controlling interests (Group's I/S)	80,400	
Cr Non-controlling interests (Group's SFP)		80,400

Net profit after tax of S for year ended 31 December 20x3		$800,000
Add realization through depreciation	$5,000	
Less tax expense on depreciation	(1,000)	4,000
Adjusted net profit after tax of S for 20x3		$804,000
Non-controlling interests' share at 10%		$ 80,400

Subsequently, when the asset is fully depreciated, the following consolidation adjustments will offset each other at and after the end of the eight years from the date of sale:

CJE1: Adjustment of unrealized profit in a prior year

Dr Equipment (P)	40,000	
Dr Opening retained earnings (S)	36,000	
Dr Non-controlling interests	4,000	
Cr Accumulated depreciation (P)		80,000

CJE2: Correction of past excess depreciation

Dr Accumulated depreciation (P)	40,000	
Cr Opening retained earnings (P)		36,000

Cr Non-controlling interests		4,000

$5,000 × 8 = $40,000

Assuming a tax rate of 20%, the offsetting tax effects are as follows:

CJE4: Tax effects on unrealized profit on sale of fixed assets		
Dr Deferred tax asset	8,000	
Cr Opening retained earnings (S)		7,200
Cr Non-controlling interests		800
CJE5: Tax effects on correction of excess depreciation		
Dr Opening retained earnings (P)	7,200	
Dr Non-controlling interests	800	
Cr Deferred tax asset		8,000

In Chapter 4, we have explained the process to account for non-controlling interests and the analytical check that we can perform to test the balance of non-controlling interests. We expand the analytical check of non-controlling interests to include the effects of adjustments for upstream transfers. Figure 5.2 shows the three components of non-controlling interests.

FIGURE 5.2 Components of non-controlling interests

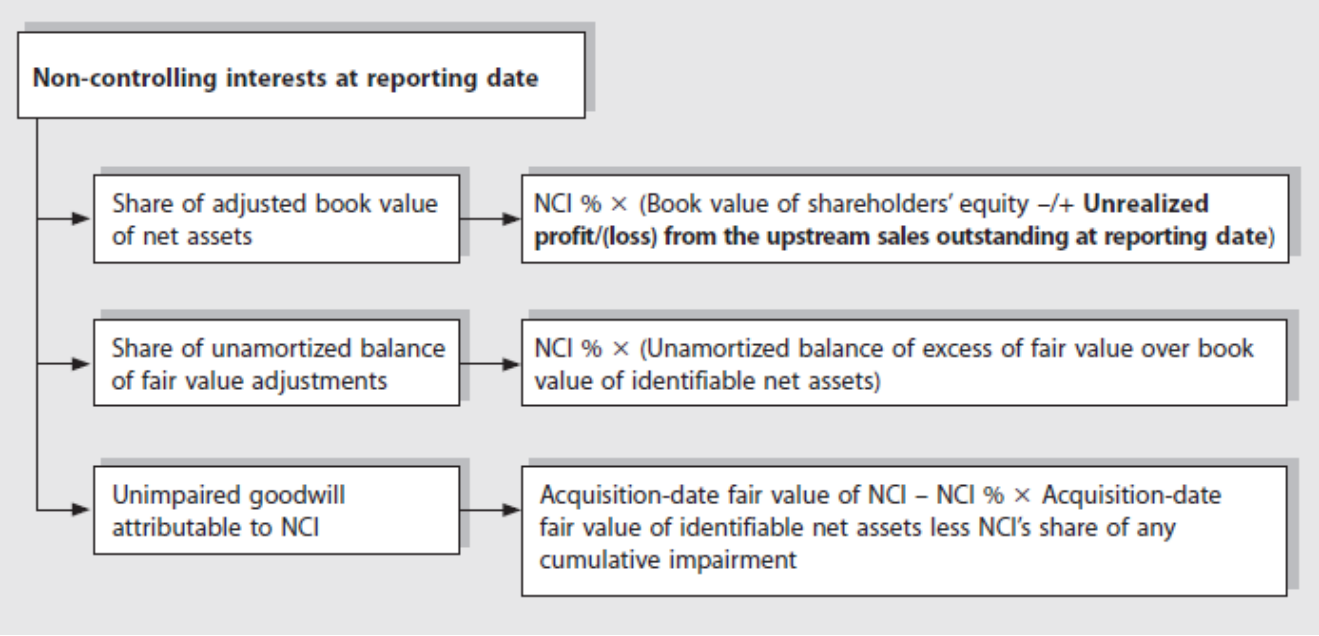


Table 5.3 illustrates the movement in non-controlling interests' balance.

TABLE 5.3 Analytical check on non-controlling interests' balance

Event	Components		
	Book value of identifiable net assets	**Fair value less book value of identifiable net assets**	**Goodwill**
Date of acquisition (re-enacted each year)	Share of book value of net assets or equity of subsidiary as at acquisition date	Share of fair value adjustments of identifiable net assets as at date of acquisition	Non-controlling interests' goodwill
From acquisition date to beginning of current period (re-enacted each year)	+/– Share of post-acquisition profit / (loss) of subsidiary –/+ Share of after-tax adjustments for unrealized profit/(loss) included in beginning retained earnings +/– Share of other changes in equity	–/+ Past cumulative amortization of fair value adjustments of identifiable net assets	– Past cumulative impairment of goodwill
Current period	+/– Share of profit/(loss) of subsidiary after tax –/+ Share of after-tax adjustments of unrealized profit/(loss) from upstream sales +/– Share of after-tax adjustments of realized profit/(loss) in current period in respect of previous period's upstream sales – Share of dividends +/– Share of other changes in equity	–/+ Current amortization of fair value adjustments of identifiable net assets	– Current impairment of goodwill
Non-controlling interests' balance at year-end	= Share of book value of net assets or equity of subsidiary at year-end **–/+ share of unrealized profit/(loss) at year-end**	= Share of unamortized balance of fair value adjustments of identifiable net assets at year-end	= Non-controlling interests' unimpaired goodwill

Analytical Check on Consolidated Retained Earnings

Thus far, we have considered an analytical check on the balance of non-controlling interests, which allows us to analyze the balance independently of the consolidation adjustments. These analytical checks are useful as they allow an expedient way to arrive at the same end result in an independent manner. That said, some common errors may affect the accuracy of both the consolidation adjustments and the independent analysis. For example, if the wrong ownership interest is applied in the calculations, both the process of the consolidation adjustments and the independent check of the end result will be in error.

We now want to consider another critical account balance, the consolidated retained earnings. The balance in retained earnings is the net result of transactions involving income and expenses. The retained earnings balance, at the start and end of year, would be subject to many consolidation adjusting entries. The likelihood of error is high and it is worthwhile to analytically determine the balance to substantiate the end result from the consolidation process.

As with the non-controlling interests balance, we can arrive at consolidated retained earnings in one of two ways. Through the consolidation process, we can list out all the consolidation adjustments that affect retained earnings. If

the focus is on the ending retained earnings balance, we will start with the summation of the parent's retained earnings and the subsidiaries' retained earnings, and list out all consolidation adjustments that affect opening retained earnings and current year income statement items. The listings approach simulates the process involved in compiling a consolidation worksheet to arrive at consolidated totals.

The analytical approach to determine the consolidated retained earnings is a lot shorter. At this point, we include three components (a fourth component that deals with changes in ownership interests will be introduced in Chapter 7). In Chapter 6, we will also see how the three components are broad enough to incorporate the impact arising from equity accounting of associates and joint ventures. The three components are explained below:

page 276

Legal entities' retained earnings that are attributable to owners of the parent

This first component comprises the parent's legal entity retained earnings and the parent's share of the post-acquisition retained earnings of the subsidiaries. The parent has a share of the legal entity retained earnings of the subsidiaries from acquisition date to the reporting date. By taking only the parent's share, we are excluding non-controlling interests' share. By adding parent's retained earnings with parent's share of post-acquisition retained earnings of the subsidiaries, we are also automatically eliminating intra-group transactions that are fully offset at the point of reporting.

For example, consider the following scenario:

P's retained earnings as at 31 December 20x6	$1,000,000
S's retained earnings as at 31 December 20x6	$ 500,000
S's pre-acquisition retained earnings	$ 300,000
P's ownership interests in S acquired on 1 July 20x4	90%
Dividend income from S recognized by P during post-acquisition period	$ 90,000
Dividend declared by S during post-acquisition period	$ 100,000

Assuming that these are the only transactions of relevance,

Consolidated retained earnings as at 31 December 20x6

= P's retained earnings as at 31 December 20x6 + P's share of S's post-acquisition retained earnings to 31 December 20x6
= $1,000,000 + [90% × ($500,000 − $300,000)]
= $1,000,000 + $180,000
= $1,180,000

The dividend income from S of $90,000 that is recognized in P's legal entity retained earnings will be offset by 90% of dividends declared by S that is included in the $180,000 above. The auto-elimination process makes the analytical check an efficient and focused way to determine the consolidated retained earnings.

However, there are some items that will not be automatically eliminated or re-enacted in the first component above. This brings us to our second and third components below.

Cumulative amortization or expensing of fair value differentials or impairment of goodwill arising from acquisition date

From earlier chapters, we have learnt that under- or over-valued identifiable net assets at acquisition date of a subsidiary would require consolidation adjustments to recognize higher or lower expensing for the acquirer. Higher or lower expenses arise when these under- or over-valued identifiable net assets are sold, depreciated or consumed by the acquiree. Because these adjustments are not pushed down to the subsidiary's legal entity books, they would not be

reflected in parent's share of post-acquisition retained earnings of the subsidiary as shown in the first element above. Hence, the analytical check of consolidated retained earnings will require recognition of the parent's share of the cumulative amortization or expensing of fair value differentials arising as at acquisition date. The same applies to the goodwill impairment loss that is attributable to the parent.

Let us extend our scenario above. Assume that S's intangible asset was undervalued by $50,000 at acquisition date and had a remaining useful life of ten years from acquisition date. Consolidated retained earnings would reflect the amortization of 2.5 years of the intangible asset during the post-acquisition period from 1 July 20x4 to 31 December 20x6. On an after-tax effect, P's share of the amortization would reduce consolidated retained earnings by $9,000 (90% x 80% × $50,000/10 × 2.5).

Hence, the consolidated retained earnings balance at 31 December 20x6 is:

P's retained earnings	$1,000,000	
P's share of post-acquisition retained earnings of S	180,000	Reflects the expensing that is not in S' books
P's share of cumulative amortization of the intangible asset, after-tax	(9,000)	

Remaining unrealized profit or losses from upstream or downstream transfers

Finally, we have to note that P's legal entity retained earnings may include remaining unrealized profit from downstream transfers, and P's share of post-acquisition retained earnings of S may include remaining unrealized profit from upstream transfers. These remaining unrealized profit or loss at reporting date must be removed to arrive at the consolidated retained earnings. For downstream transfers, the entire remaining amount has to be removed as P is not sharing the adjustment with non-controlling interests. For upstream transfers, P's share of the unrealized profit at reporting date has to be removed as non-controlling interests has a share of the adjustment as well. The amount removed for unrealized profit from upstream transfer is the same as the adjustment to arrive at non-controlling interests' balance. The after-tax effects should be shown as the adjustments.

Continuing with our illustration, let's assume the following additional information:

Transfer of inventory from P Co to S Co	
Transfer price:	$100,000
Original cost:	$ 70,000
% unsold at 31 December 20x6:	30%
Transfer of equipment from S Co to P Co	
Transfer price:	$120,000
Net book value at date of sale:	$100,000
Remaining useful life at date of sale:	10 years
Remaining useful life at 31 December 20x6:	6 years

With the additional information, the consolidated retained earnings balance at 31 December 20x6 is:

P's retained earnings	$1,000,000
P's share of post-acquisition retained earnings of S	180,000
P's share of cumulative amortization of the intangible asset, after-tax	(9,000)
P's share of unrealized profit from upstream sale, after-tax (Note A)	(8,640)
P's unrealized profit from downstream sale, after-tax (Note B)	(7,200)

In this illustration, we reduce consolidated retained earnings by $8,640 for the upstream sale because there is an originating profit in S Co's retained earnings that include the internal profit. We also remove $7,200, which is 100% of the unrealized profit from the downstream transfer.

Note A: P's share of unrealized profit from upstream sale
= 90% × 80% × ($20,000/10 × 6)
= $8,640

Note B: P's unrealized profit from downstream sale
= 30% × 80% × ($100,000 - $70,000)
= $7,200

In Chapter 7, we will introduce a fourth component arising from changes in ownership interests.

Figure 5.3 summarizes the components in consolidated retained earnings as of now.

FIGURE 5.3 Components of consolidated retained earnings

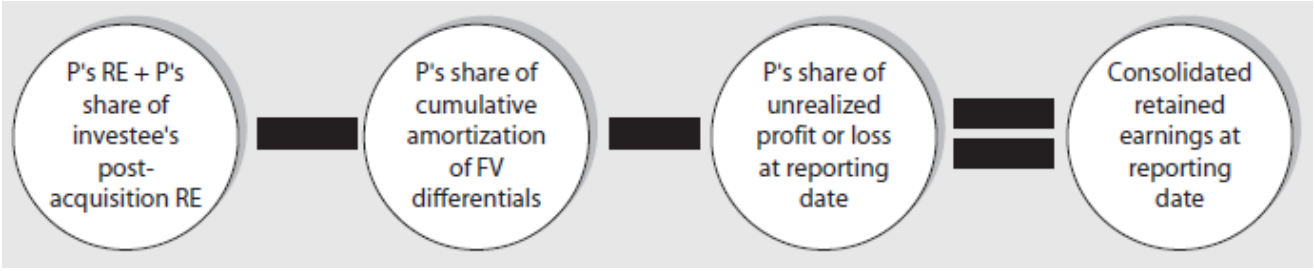


Illustration 5.4 provides a comprehensive example of accounting for goodwill, fair value adjustments, non-controlling interests, and intercompany transfers of fixed assets and inventory.

ILLUSTRATION 5.4 Comprehensive example with intercompany transfers

Income Statement and Partial Statement of Changes in Equity
For the Year Ended 31 December 20x5

	P Co	S Co
Operating profit	$1,000,000	$300,000
Dividend income (including from S)	42,000	

Profit before tax	$1,042,000	$300,000
Tax expense	(200,000)	(60,000)
Profit after tax	$ 842,000	$240,000
Dividends declared	(150,000)	(40,000)
Profit retained	$ 692,000	$200,000
Retained earnings, 1 January 20x5	900,000	500,000
Retained earnings, 31 December 20x5	$1,592,000	$700,000

Statement of Financial Position
As at 31 December 20x5

	P Co	S Co
Fixed assets, net book value	$ 900,000	$ 700,000
Investment in S, at cost	540,000	
Other investments	160,000	
Inventory	350,000	200,000
Accounts receivable	200,000	150,000
Cash	50,000	40,000
	$2,200,000	$1,090,000
Accounts payable	$ 258,000	$ 90,000
Share capital	350,000	300,000
Retained earnings	1,592,000	700,000
	$2,200,000	$1,090,000
Date of acquisition		1 July 19x9
Percentage acquired by P Co		90%
Shareholders' equity at date of acquisition:		
Share capital		$300,000
Retained earnings		100,000
		$400,000
Fair and book values of net assets at date of acquisition:		
Fixed assets		
Fair value		$160,000
Book value		120,000
Excess of fair value over book value		$ 40,000
Unrecognized intangible assets (fair value)		60,000

Other net assets (book and fair values)	280,000
Fair value of identifiable net assets at date of acquisition . . .	500,000
Book value of identifiable net assets at date of acquisition . .	400,000
Fair value of non-controlling interests at date of acquisition .	60,000

Additional information:

(a) The remaining useful life of fixed assets of S Co as at date of acquisition is five years with no residual value at the end of the useful life.

(b) The unrecognized intangible asset at acquisition date had an indefinite useful life and showed no indications of impairment.

(c) S Co transferred its fixed asset to P Co on 1 January 20x4. Details are as follows:

Transfer price invoiced by S Co to P Co		$30,000
Original cost of the fixed asset	$60,000	
Accumulated depreciation	(36,000)	
Net book value at 1 January 20x4		24,000
Profit on sale recorded by S Co in 20x4		$ 6,000
Useful life from 1 January 20x1, the original purchase date		5 years

There was no revision in the estimate of useful life (that is, remaining life at 1 January 20x4 was two years) and residual value was negligible.

(d) S Co purchased inventory from P Co on 1 December 20x4. Details are as follows:

Transfer price	$20,000
Original cost	15,000
Profit on sale recorded by P Co	$ 5,000
80% of the inventory was resold to third parties only in 20x5 with 20% remaining in S's inventory as at 31 December 20x5	

(e) S Co sold inventory to P Co during 20x5. Details are as follows:

Transfer price	$100,000
Original cost	80,000
Profit on sale recorded by S Co	$ 20,000
60% remained in P's inventory as at 31 December 20x5	

(f) Assume a tax rate of 20%. Tax on fair value adjustments should be recognized.

Required:

1. Prepare the consolidation entries for 20x5.
2. Perform the analytical check on the balance of non-controlling interests.

3. Determine the consolidated amounts of the following items:

   (a) Fixed assets balance as at 31 December 20x5.
   (b) Inventory balance as at 31 December 20x5.
   (c) Retained earnings balance as at 1 January 20x5.
   (d) Net profit after tax for the year ended 31 December 20x5.
   (e) Retained earnings balance as at 31 December 20x5.

1. Journal entries for 20x5

CJE1: Elimination of investment in S Co

Dr Share capital	300,000	
Dr Retained earnings	100,000	
Dr Fixed assets	40,000	
Dr Intangible asset	60,000	
Dr Goodwill (Note 2)	120,000	
Cr Investment in S		540,000
Cr Non-controlling interests (Note 3)		60,000
Cr Deferred tax liability (Note 1)		20,000

Note 1: Deferred tax liability = Tax rate × Fair value adjustments
= 20% × (Excess of fair value over book value of fixed assets + Fair value of intangible assets)
= 20% × ($40,000 + $60,000)
= 20% × $100,000
= $20,000

Note 2: Goodwill = Consideration transferred + Fair value of non-controlling interests – Fair value of identifiable net assets (after incorporating deferred tax liability)
= $540,000 + $60,000 – ($500,000 – $20,000)
= $600,000 – $480,000
= $120,000

Note 3: Non-controlling interests are at fair value at acquisition date. Fair value is proportionate to consideration transferred by P.

CJE2: Past depreciation of undervalued fixed assets (fully depreciated)

Dr Opening retained earnings	36,000	
Dr Non-controlling interests	4,000	
Cr Accumulated depreciation		40,000

CJE3: Tax effects of CJE2

Dr Deferred tax liability	8,000	

Cr Opening retained earnings		7,200
Cr Non-controlling interests		800

CJE4: Adjustment for unrealized profit on transfer of fixed assets

Dr Opening retained earnings	5,400	
Dr Non-controlling interests	600	
Dr Fixed assets	30,000	
Cr Accumulated depreciation		36,000

	What should be	What is	Adjustment
Fixed assets, cost	60,000	30,000	30,000
Accumulated depreciation	(36,000)	0	(36,000)
Net book value	24,000	30,000	6,000

CJE5: Adjustment for tax on unrealized profit on transfer of fixed assets

Dr Deferred tax asset	1,200	
Cr Opening retained earnings		1,080
Cr Non-controlling interests		120

CJE6: Adjustment of past and current depreciation of transferred fixed asset

Dr Accumulated depreciation	6,000	
Cr Opening retained earnings		2,700
Cr Non-controlling interests		300
Cr Depreciation		3,000
Depreciation before transfer		$12,000 ($60,000/5)
Depreciation after transfer		15,000 ($30,000/2)
Annual over-depreciation to be corrected		$ 3,000

Alternatively: Excess depreciation = Unrealized profit/Remaining useful life
= $6,000/2
= $3,000

CJE7: Tax effects of CJE6

Dr Opening retained earnings	540	
Dr Non-controlling interests	60	
Dr Tax expense	600	
Cr Deferred tax asset		1,200

CJE8: Adjustment for unrealized profit from downstream sale in beginning inventory

Dr Opening retained earnings	5,000	
Cr Cost of sales		4,000
Cr Inventory		1,000

CJE9: Tax effects of CJE8

Dr Tax expense	800	
Dr Deferred tax asset	200	
Cr Opening retained earnings		1,000

CJE10: Adjustment for unrealized profit from upstream sale during 20x5

Dr Sales	100,000	
Cr Cost of sales		88,000
Cr Inventory		12,000

CJE11: Tax effects of CJE10

Dr Deferred tax asset	2,400	
Cr Tax expense		2,400

CJE12: Allocate share of post-acquisition retained earnings to non-controlling interests

Dr Opening retained earnings	40,000	
Cr Non-controlling interests		40,000

Retained earnings as at 1 January 20x5	$500,000
Retained earnings as at date of acquisition	100,000
Change in retained earnings	$400,000
Non-controlling interests' share at 10%	40,000

CJE13: Eliminate dividends declared by S Co

Dr Dividend income	36,000	
Dr Non-controlling interests	4,000	
Cr Dividends declared		

CJE14: Allocate share of current income to non-controlling interests

Dr Income to non-controlling interests	23,280	
Cr Non-controlling interests		23,280

Net profit after tax of S Co	$240,000

Add excess depreciation on transferred fixed asset	3,000
Less tax on excess depreciation on transferred fixed asset	(600)
Less unrealized profit from upstream sale	(12,000)
Add tax on unrealized profit from upstream sale	2,400
Adjusted net profit after tax	$232,800
Non-controlling interests' share at 10%	23,280

2. Analytical check on non-controlling interests

Book value of net assets as at 31 December 20x5	$1,000,000
Balance of unrealized profit in inventory (after-tax)	(9,600)
	$ 990,400
Share of adjusted net assets	$ 99,040
Goodwill (Note 1)	12,000
Intangible asset (after-tax)	4,800
Non-controlling interests	$ 115,840
CJE1: Non-controlling interests at date of acquisition	$ 60,000
CJE2: Share of past depreciation of undervalued asset	(4,000)
CJE3: Tax effects of past depreciation of undervalued asset	800
CJE4: Share of adjustment of profit on transfer of fixed assets	(600)
CJE5: Share of tax on adjustment of profit on asset transfer	120
CJE6: Share of adjustment to past depreciation	300
CJE7: Share of tax on past depreciation	(60)
CJE12: Share of post-acquisition retained earnings	40,000
CJE13: Dividends received	(4,000)
CJE14: Allocate share of current income to non-controlling interests	23,280
Non-controlling interests' balance as at 31 December 20x5	$ 115,840

Note 1: Goodwill attributable to non-controlling interests (NCI)
= Fair value of NCI – Share of identifiable net assets
= $60,000 – (10% × $480,000)
= $12,000

3. Consolidated amounts

(a) Fixed assets balance as at 31 December 20x5

P Co	$ 900,000
S Co	700,000
Consolidated fixed assets balance as at 31 December 20x5	$1,600,000

The undervalued fixed asset has been fully depreciated. Hence, the remaining balance of the undervalued amount is zero. The unrealized profit on the transferred fixed asset is fully extinguished through depreciation. Hence, there is no need to remove the unrealized profit from the combined balance.

(b) Inventory balance as at 31 December 20x5

P Co	$350,000	
S Co	200,000	
	$550,000	
Less:		
Remaining unrealized profit on downstream transfer	(1,000)	20% × $5,000
Remaining unrealized profit on upstream transfer	(12,000)	60% × $20,000
Consolidated inventory balance as at 31 December 20x5	$537,000	

(c) Retained earnings balance as at 1 January 20x5

P Co's retained earnings	$ 900,000	
P Co's share of S Co's post-acquisition retained earnings	360,000	90% × ($500,000 - $100,000)
Past periods' depreciation of undervalued fixed assets (after-tax)	(28,800)	90% × 80% × $40,000
Remaining unrealized profit on fixed asset upstream transfer (after-tax)	(2,160)	90% × 80% × $6,000/2
Remaining unrealized profit on inventory downstream transfer (after-tax)	(4,000)	80% × $5,000
Consolidated retained earnings as at 1 January 20x5	$1,225,040	

As retained earnings is an equity item that is attributable to P Co's shareholders, adjustments for upstream transfers and depreciation of undervalued fixed assets is pro-rated by P Co's ownership interests in S Co. Since retained earnings is a fairly complex account, we present the compilation of consolidation adjustments to arrive at the same balance:

P Co	$ 900,000
S Co	500,000
	$1,400,000
Entries that impact opening retained earnings:	
CJE1	(100,000)
CJE2	(36,000)
CJE3	7,200
CJE4	(5,400)
CJE5	1,080
CJE6	2,700
CJE7	(540)

CJE8	(5,000)
CJE9	1,000
CJE12	(40,000)
Consolidated opening retained earnings	$1,225,040

(d) Profit after tax

P Co	$ 842,000	
S Co	240,000	
	$1,082,000	
Add excess depreciation (after-tax) from previous year's transfer of fixed assets	2,400	80% × $3,000
Add realized profit (after-tax) from previous year's transfer of inventory	3,200	80% × 80% × $5,000
Less unrealized profit (after-tax) from current year's transfer of inventory	(9,600)	80% × 60% × $20,000
Less dividend income eliminated	(36,000)	80% × $5,000
Consolidated profit after tax	$1,042,000	

All adjustments have to be on an after-tax basis. Unrealized profit from current year transfers are removed out of profit. Realized profit from previous year transfers are added back to profit. Both upstream and downstream transfers are treated in the same manner. Non-controlling interests' share is shown after the consolidated profit after tax line.

(e) Retained earnings as at 31 December 20x5

P Co's retained earnings	$1,592,000	
P Co's share of S Co's post-acquisition retained earnings	540,000	90% × ($700,000 - $100,000)
Less Cumulative depreciation of undervalued fixed assets (after-tax)	(28,800)	90% × 80% × $40,000
Less Remaining unrealized profit on inventory downstream transfer (after-tax)	(800)	20% × 80% × $5,000
Less Remaining unrealized profit on inventory upstream transfer (after-tax)	(8,640)	90% × 60% × 80% × $20,000
Consolidated retained earnings as at 31 December 20x5	$2,093,760	

ILLUSTRATION 5.4 EXTENSION Comprehensive example with intercompany transfers

The information in Illustration 5.4 remains the same except that P Co measures non-controlling interests as at acquisition date as a proportion of identifiable net assets.

CJE1: Elimination of investment in S Co

Dr Share capital	300,000	
Dr Retained earnings	100,000	
Dr Fixed assets	40,000	
Dr Intangible asset	60,000	
Dr Goodwill (Note 2)	108,000	
Cr Investment in S		540,000
Cr Non-controlling interests (Note 3)		48,000
Cr Deferred tax liability (Note 1)		20,000

The remaining consolidation entries will be the same as for Illustration 5.4. Goodwill attributable to non-controlling interests does not feature in Illustration 5.4 Extension. If there is no impairment of goodwill in Illustration 5.4, the allocation of current and past income to non-controlling interests remains the same. The analytical check on non-controlling interests excludes goodwill attributable to non-controlling interests.

Note 1: Deferred tax liability = Tax rate × Fair value adjustments
= 20% × (Excess of fair value over book value of fixed assets + Fair value of intangible assets)
= 20% × ($40,000 + $60,000)
= 20% × $100,000
= $20,000

Note 2: Goodwill = Consideration transferred + Fair value of non-controlling interests – Fair value of identifiable net assets (after incorporating deferred tax liability)
= $540,000 + $48,000 – ($500,000 – $20,000)
= $588,000 – $480,000
= $108,000

Note 3: Non-controlling interests are measured as a proportion of identifiable net assets.

Fair value of identifiable net assets (after incorporating deferred tax liability) is $480,000. Non-controlling interests as a proportion of identifiable net assets is $48,000 (10% × $480,000).

Analytical check on non-controlling interests:

Book value of net assets as at 31 December 20x5	$1,000,000
Balance of unrealized profit in inventory (after-tax)	(9,600)
	990,400
Intangible asset (after-tax)	48,000
Adjusted net assets as at 31 December 20x5	$1,038,400
Non-controlling interests' share at 10%	$ 103,840
(As fair value of non-controlling interests is proportionate to consideration transferred by P, goodwill is shared in the same proportion)	
CJE1: Non-controlling interests at date of acquisition	$ 48,000
CJE2: Share of past depreciation of undervalued asset	(4,000)

CJE3: Tax effects of past depreciation of undervalued asset	800
CJE4: Share of adjustment of profit on transfer of fixed assets	(600)
CJE5: Share of tax on adjustment of profit on asset transfer	120
CJE6: Share of adjustment to past depreciation	300
CJE7: Share of tax on past depreciation	(60)
CJE12: Share of post-acquisition retained earnings	40,000
CJE13: Dividends received	(4,000)
CJE14: Allocate share of current income to non-controlling interests	23,280
Non-controlling interests' balance as at 31 December 20x5	$ 103,840

SPECIAL ACCOUNTING CONSIDERATIONS WHEN INTRAGROUP TRANSFERS ARE MADE AT A LOSS

When intragroup transfers of inventory or fixed assets result in a loss to the selling company, IFRS 10 Appendix B paragraph B86(c) requires an assessment of whether the loss is indicative of an impairment loss that requires recognition in the consolidated financial statements.

For example, a parent may sell inventory below cost to a subsidiary because the inventory is slow-moving and one, which the parent is not able to sell in the open market. In such a situation, the loss on the sale of inventory may indicate an impairment loss that should be recognized in the consolidated financial statements. It will be inappropriate to remove the loss from the inventory. The consolidation adjustments will thus require the elimination of sale and cost of sales, without adjusting for the loss in the inventory. The same arguments apply to the transfer of fixed assets. When the transfer price is below the net book value and the loss indicates an impairment loss in the fixed assets, the unrealized loss should not be adjusted from the fixed asset. Illustration 5.5 explains the treatment of loss arising from intragroup transfers.

ILLUSTRATION 5.5 Loss arising from intragroup transfers

Parent Co transferred inventory to SubCo during the year ended 31 December 20x6. No sales of the inventory were made to third parties by SubCo during 20x6. The loss on transfer indicated an impairment loss on the asset. The inventory transfer is:

Transfer price	$ 60,000
Original cost	80,000
Gross loss	$(20,000)

To retain the loss in the consolidated financial statements, the following consolidation adjustments are necessary in the light of the entries in Parent Co's and SubCo's books. The entry in Parent Co's books is:

Dr Cost of sales	80,000

Cr Inventory		80,000
Dr Amount from SubCo	60,000	
Cr Sales		60,000

The entry in SubCo's books shows:

Dr Inventory	60,000	
Cr Amount from Parent Co		60,000

The consolidation adjustment is:

CJE1: Eliminate the transfer of inventory

Dr Sales	60,000	
Cr Cost of sales		60,000

In this scenario, we should leave the inventory at the transfer price of $60,000 because that price reflects the net realizable value of the inventory. Thus, no adjustment is made to remove the unrealized loss. The sales are eliminated in full while the cost of sales is credited only partially. By crediting $60,000 to cost of sales instead of $80,000, there is an implicit recognition of $20,000 of loss in the consolidated income statement.

The fixed asset transfer is:

Transfer price		$120,000
Original cost	$200,000	
Accumulated depreciation	50,000	
Net book value at date of transfer		150,000
Loss on transfer		$(30,000)

If the loss on transfer is indicative of an impairment loss, the loss should not be removed from fixed assets.

CJE2: Adjustment for the transfer of fixed assets

Dr Fixed assets	80,000	
Cr Accumulated depreciation		80,000

Reinstatement of cost to original cost = Original cost – Transfer price
= $200,000 – $120,000
= $80,000

Reinstatement of accumulated depreciation	$50,000
Recognition of impairment loss on fixed asset	30,000
Adjustment to accumulated depreciation	$80,000

In the consolidated income statement, the impairment loss of $30,000 is recognized by not eliminating the loss on transfer. A reclassification adjustment will be appropriate to reclassify the loss on sale to an impairment loss.

CJE3: Reclassification of loss on sale to impairment loss

Dr Impairment loss	30,000	
Cr Loss on sale		30,000

In the consolidated statement of financial position, the net book value of fixed assets is $120,000, which incorporates the impairment loss of $30,000 in the form of a higher accumulated depreciation.

Original cost	$200,000
Accumulated depreciation	(80,000)
Net book value	$120,000

Subsequent depreciation will take into account any revision in useful life as a result of the impairment in value.

Comparisons of Transfer Price, Carrying Amount and Fair Value

Illustration 5.5 presents a situation when the loss on transfer is wholly indicative of an impairment loss. However, a number of other situations exist when the loss on transfer is:

1. Wholly an artificial or "unrealized" loss. The transferor may choose to sell at an artificially low price to a group of company as a form of financial assistance or to capitalize on tax advantages, amongst other reasons.
2. A combination of artificial or unrealized loss and impairment loss.

To determine whether a loss on an intragroup transfer includes an impairment loss and/or artificial or unrealized loss, we have to compare the transfer price against the fair value of the asset at date of transfer and its carrying amount. Illustration 5.6 presents different situations whereby the loss on transfer of assets between group companies in each situation has a different economic substance as indicated by the transfer price, carrying amount, and fair value.

ILLUSTRATION 5.6 Transfers at a loss

In each of the following situations, Parent Co transferred inventory to Subsidiary Co on 4 April 20x1. For simplicity, we assume that in all the situations, the inventory had not yet been resold to third parties. However, the principle that applies to the adjustments below is the same if there were partial sales to third parties. If the inventory had been resold to third parties, any adjustment to ending inventory would be pro-rated by the percentage of the remaining inventory. The situations are *not* exhaustive, but they illustrate the underlying principles that would apply to other situations.

The underlying principle in IFRS 10 is that impairment loss should be recognized as an expense in the consolidated income statement and should not be "reversed" out. We determine impairment loss by comparing the carrying amount of the asset with the appropriate measures. In determining impairment loss for inventory, we compare the carrying amount with net realizable value (NRV). For other non-financial assets, we compare the carrying amount with the recoverable amount. IAS 36 *Impairment of Assets* defines recoverable amount as the higher of the fair value of the asset less cost to sell and the asset's value in use. For simplicity, we will refer to the appropriate benchmark measure as "fair value" in this illustration and in the end-of-chapter questions.

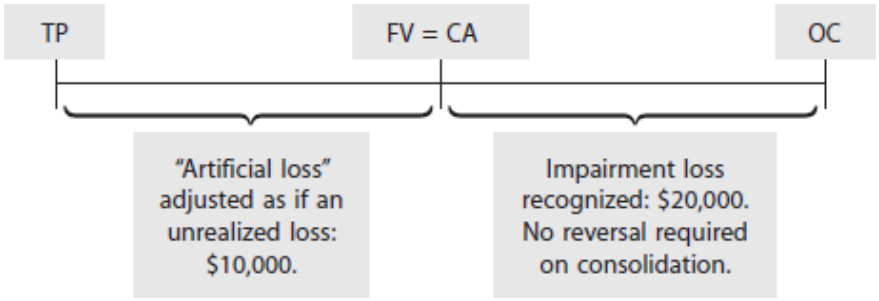
The underlying principle also requires loss on transfer that is not indicative of an impairment loss not to be recognized. In the same way that we do not recognize unrealized profit on sale in consolidated income because these are internal profits, we should also not recognize artificial or unrealized loss on sale between group companies. We

determine artificial loss by comparing the transfer price with the fair value of the asset. If the transfer is made at arm's-length pricing, the selling company would not incur any artificial loss.

In the following situations, we compare transfer price (TP), the carrying amount (CA) of the inventory, and fair value (FV) to determine the nature of the loss, and we show the consolidation adjustments that are required to eliminate and/or adjust the transactions. Since inventory is carried at the lower of cost and net realizable value (LCNRV), we show the original cost (OC) to show the extent of the impairment loss.

Situation A: In Situation A, the transfer price is lower than the fair value indicating that the loss is an artificial loss, which should be adjusted out. However, the fair value is lower than the original cost indicating that the asset is impaired. Parent Co recognizes a gross loss of $30,000, which is the difference between the transfer price and the original cost. An impairment loss of $20,000 is included in the total loss. In this situation, Parent Co (P) had recognized the impairment loss before the sale. (The LCNRV test is applied at end of each reporting period; it is not necessary for the holder of inventory to perform this test on a continuous basis. In this situation, if P had not written down the inventory to NRV, the loss would be recognized in any case in the income statement.) The artificial or unrealized loss of $10,000 has to be reversed.

Transfer price	$ 90,000
Original cost	120,000
Carrying amount in P's books	100,000
Fair value	100,000



The consolidated journal entry is:

Dr Sales	90,000	
Dr Inventory	10,000	
Cr Cost of sales		100,000
Eliminate intercompany transfer		

Inventory on consolidated statement of financial position:

Inventory on S's statement of financial position	$ 90,000
Consolidated journal entry (see above)	10,000
Inventory at LCNRV	$100,000

Gross loss in consolidated income statement:

Gross loss on P's PL	($30,000)
Consolidated journal entry (see above)	$10,000
Adjusted gross loss	($20,000)

Another way of analyzing the situation is to correct the year-end unrealized loss in the inventory. This is more intuitive and gets us to the same end result. In getting the balance sheet right, we would be able to make the correct adjustments to the income statement or retained earnings figure.

To get the balance sheet (or statement of financial position) right, we compare "what should be" reported in the group's balance sheet and "what is" reported in the legal entity's balance sheet. In a downstream transfer, the asset resides on the balance sheet of the subsidiary. The analysis is shown in the next box. We see that there is a difference of $10,000 between the two balance sheets. The original cost of the inventory for the group is $120,000 whereas the original cost for the buyer (the subsidiary) is based on the transfer price of $90,000. The LCNRV test shows a difference of $10,000 between the group and the legal entity's balance sheet.

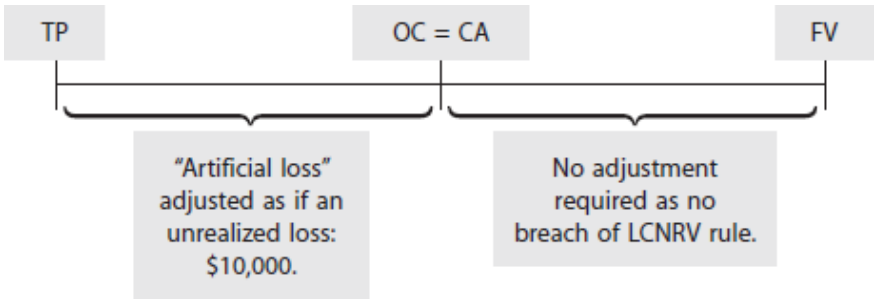
LCNRV test at year end	Group "What should be"	Legal entity "What is"	Difference
Original cost	$120,000	$ 90,000	
NRV	100,000	100,000	
LCNRV	100,000	90,000	$10,000
Impairment loss	20,000	0	$20,000

We see from the box above that additional impairment loss of $20,000 should be recognized on consolidation. The impairment loss is part of the cost of sales adjustment. To have a complete view of adjustments to cost of sales, the next box shows the comparison between the group and the legal entities cost of sales. It is not necessary to substantiate the cost of sales adjustment. If the sales and inventory adjustments are properly computed, cost of sales adjustment can be a residual. However, to facilitate a stronger understanding of the adjustment, we show the comparison below.

Income statement effect	Group "What should be"	Legal entity "What is"	Difference
Impairment loss	$20,000	$ 20,000 (recognized by P before the sale to S)	
Cost of sales ("sale" from P to S)	0	100,000 (after the write down to NRV)	
Total cost of sales	$20,000	$120,000	$100,000

Situation B: In Situation B, the transfer price is below the fair value indicating that the asset is not impaired. The loss on sale of $10,000 is wholly artificial and should be adjusted out from the income statement and inventory.

Transfer price	$ 90,000
Original cost	100,000
Fair value	120,000
Carrying amount in P's books	100,000



The consolidated journal entry is:

Dr Sales	90,000	
Dr Inventory	10,000	
Cr Cost of sales		100,000

Eliminate intercompany transfer

Inventory on consolidated statement of financial position:

As recorded by S	$ 90,000
Consolidated journal entry (see above)	10,000
LCNRV	$100,000

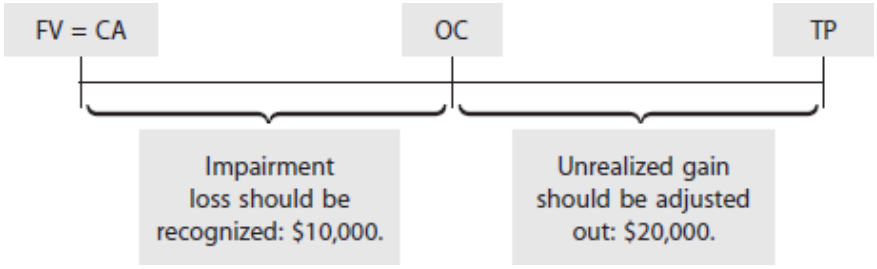
Gross loss in group's PL:

As recorded by P	($10,000)
Consolidated journal entry (see above)	10,000
Gross loss in group's PL	$ 0

LCNRV test at year end	Group "What should be"	Legal entity (Subsidiary Company) "What is"	Difference
Original cost	$100,000	$ 90,000	
NRV	120,000	120,000	
LCNRV	100,000	90,000	$10,000

Situation C:

Transfer price	$120,000
Original cost	100,000
Fair value	90,000
Carrying amount in P's books	90,000



LCNRV test at year end	Group	Legal entity (Subsidiary Company)	Difference
Original cost	$100,000	$120,000	
NRV	90,000	90,000	
LCNRV	90,000	90,000	$ 0
Impairment loss	10,000	30,000	20,000

The first consolidated journal entry is:

Dr Sales	120,000	
Cr Inventory		20,000
Cr Cost of sales		100,000
To reverse unrealized gain in inventory		

The second consolidated journal entry is:

Dr Inventory	20,000	
Cr Impairment loss (Cost of sales)		20,000
To adjust the excess impairment loss		

The combination of both journal entries is:

Dr Sales	120,000	
Cr Cost of sales		120,000
Eliminate intercompany transaction		

In this chapter, we analyzed the consolidation adjustments relating to intragroup transfers of inventory and fixed assets. However, the internal market place can be more complex. For example, one group company can be a contractor to another group company. IFRS 15 *Revenue from Contracts with Customers* as applied to the legal entity is inappropriate to the economic entity (an entity cannot be its contractor or customer). Other standards such as IAS 16 *Property, Plant and Equipment* applies instead to the economic entity. An illustrative example is provided in the Appendix to this chapter.

CONCLUSION

In this chapter, we learn a few key principles in the preparation of consolidated financial statements. Operational and financial synergies, economies of scale, and scope within the group are often generated through creating an internal market place. The internal market place is characterized by transactions and transfers between entities within the group. From an economic unit perspective, these transfers should not be recognized and internal profits should be eliminated. Consolidation principles require that assets and liabilities on the consolidated statement of financial position should not include profits or losses from intragroup transfers. These profits or losses are described as "unrealized profits or losses". Eventually, they are unwound or realized through the consumption, depreciation, expensing or sale of the transferred asset or liability. Intragroup balances should also be eliminated. Similarly, the consolidated income statement should reflect only expenses and revenues from external parties. Intragroup transactions should be eliminated in full. These include perfectly offsetting transactions during the period and those, which give rise to unrealized profits or losses. In this chapter, we note that accounting standards are applied at both group and legal entity levels, resulting in different recognition and measurement outcomes. The differences between the group and legal entity amounts are the subject of consolidation adjustments. We also see that special considerations relate to the accounting of losses that arise from intragroup transfers. In some situations, the losses should be recognized because the asset that is transferred is impaired. In other situations, the losses are artificial and should be reversed out in the same manner that a profit is reversed out. We also note that there are tax consequences from the elimination of intragroup profits and losses. Taxes incurred on intragroup profits or losses are deferred until the asset is expensed or sold by the buying group company.

In this chapter, we also evaluate the impact of profit adjustments on non-controlling interests. In upstream transfers, where the selling company is a partially owned subsidiary, the profit allocated to non-controlling interests would also be similarly adjusted for unrealized profits or losses. In downstream sales, where the selling company is the parent company, the profit allocated to non-controlling interests would not be affected.

This chapter also presents a new reconciliation that will enable us to arrive at consolidated totals expediently. This relates to the reconciliation or analysis of consolidated retained earnings. By deconstructing the consolidated retained earnings into three components, we are able to arrive at the final number independently of the consolidation adjustments.

APPENDIX 5A

Examples of Complex Intra-Group Transactions

Construction Activity within a Group

IFRS 15 *Revenue from Contracts with Customers* provides the principles and requirements relating to the timing, amount and disclosures of revenue. The transfer of control as evidenced by the accomplishment of separate performance obligation by the supplier to the customer is a central principle in IFRS 15 and is the pivot point for revenue recognition. The principles in IFRS 15 apply to transfer of control to the customer at a point in time as well as

continuous transfer of control to the customer over time. In Chapter 5, we established that transfer of control of assets must be made to third parties before the group is able to recognize the revenue.

In this Appendix, we apply the principles in IFRS 15 to the continuous transfer of control in an intragroup transaction. If one group company is a contractor in a construction project to its customer, another group company, the application of IFRS 15 has different results for the legal entities and the group entity. Figure 5A.1 shows how the contractor and customer recognizes the transaction as separate legal entities.

FIGURE 5A.1 Contractor and customer in the same group

The contractor recognizes revenue and expense as control is progressively transferred to the customer. Typically, the percentage of completion method is applied to recognize revenue and expense.[4] The customer recognizes fixed assets on the basis of progress billings. The billings are invoices sent to the customer to require payments throughout the construction period.

However, from the group's perspective, there is no transfer of control to third parties and revenue and expense should not be recognized. Instead, a self-constructed fixed asset comprising of construction costs should be recognized. In fact, the group should apply IAS 16 *Property, Plant and Equipment* and not IFRS 15. Figure 5A.2 shows how the self-constructed asset should be accounted.

FIGURE 5A.2 Self-constructed asset – "What Should Be"

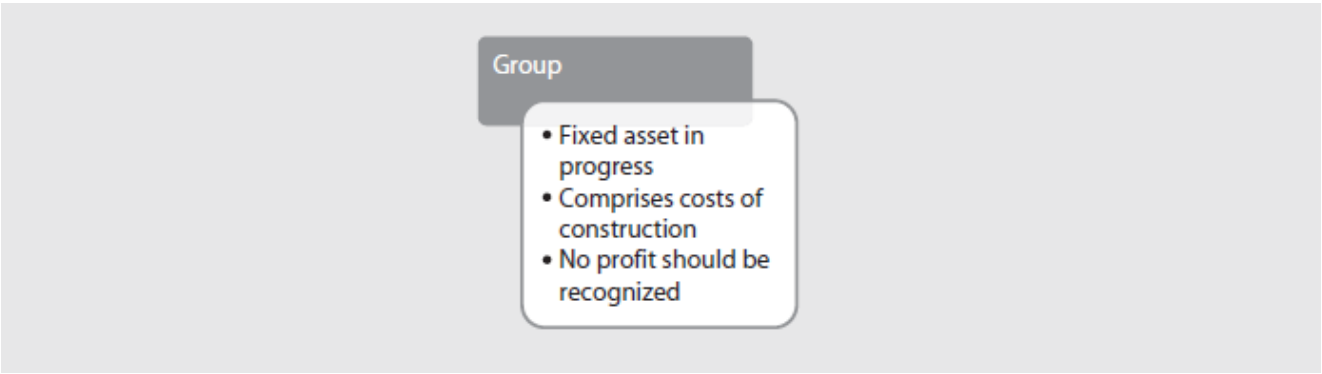


Illustration 5.7 presents a detailed illustration of how the contractor, customer and the group should account for the transaction.

ILLUSTRATION 5.7 Contract accounting within a group

Question

Co A undertakes construction work for its subsidiary as follows:

The following information relates to a fixed-price contract:

Contract price:	$50,000,000
Date of contract:	1 July 20x1

	31 Dec 20x1	31 Dec 20x2	31 Dec 20x3
Cumulative construction costs, 1 Jan	0	$9,000,000	$16,500,000
Current construction costs during year	$9,000,000	7,500,000	12,000,000
Estimated further costs to be incurred	36,000,000	27,500,000	19,000,000
Progress billings for the year	3,000,000	10,850,000	18,000,000
Cash received on progress billings	1,200,000	10,000,000	20,000,000

Assume that all construction costs are paid in cash.

Ignore tax effects.

Required:

1. Calculate the contract revenue, costs and gross profit under the percentage-of-completion method for the years ended 31 Dec 20x1, 31 Dec 20x2 and 31 Dec 20x3.
2. Prepare the journal entries to record all transactions relating to the construction contract for the years ended 31 Dec 20x1, 31 Dec 20x2 and 31 Dec 20x3 for the contractor.
3. Show the balances for the following as at 31 Dec 20x1, 31 Dec 20x2 and 31 Dec 20x3 for the contractor in its the Statement of Financial Position (extracts):
   (a) Contract Asset or Contract Liability
   (b) Accounts receivable
   (c) Cash
   (d) Retained earnings
4. Prepare the journal entries to record all transactions relating to the construction contract for the years ended 31 Dec 20x1, 31 Dec 20x2 and 31 Dec 20x3 for the customer.
5. Show the balances for the following as at 31 Dec 20x1, 31 Dec 20x2 and 31 Dec 20x3 for the customer in its Statement of Financial Position (extracts):
   (a) Fixed assets
   (b) Accounts payable
   (c) Cash or bank overdraft
7. Assuming that contractor is the parent and customer is the subsidiary, show the elimination entries on consolidation.
8. Show the balances for the following as at 31 Dec 20x1, 31 Dec 20x2 and 31 Dec 20x3 for the Group in its the Statement of Financial Position (extracts):
   (a) Fixed assets
   (b) Cash

Solution:

1. Contract revenue, costs and gross profit for 20x1, 20x2 and 20x3

Contract price: $50,000,000

Date of contract: 1 July 20x1

	31 Dec 20x1	31 Dec 20x2	31 Dec 20x3
Cumulative construction costs 1 Jan	0	$9,000,000	$16,500,000
Current construction costs during year	9,000,000	7,500,000	12,000,000
Estimated further costs to be incurred	36,000,000	27,500,000	19,000,000
Estimated total costs	45,000,000	44,000,000	47,500,000
Contract price	50,000,000	50,000,000	50,000,000
Estimated gross profit	5,000,000	6,000,000	2,500,000
Cumulative construction costs to 31 Dec	9,000,000	16,500,000	28,500,000
Percentage of completion	20%	37.50%	60.00%
Progress billings for the year	3,000,000	10,850,000	18,000,000
Amount paid on progress billings during year	1,200,000	10,000,000	20,000,000

	20x1	20x2	20x3
Cumulative revenue to 31 Dec	10,000,000	18,750,000	30,000,000
Cumulative revenue to 1 Jan	0	10,000,000	18,750,000
Current revenue	10,000,000	8,750,000	11,250,000
Cumulative costs to 31 Dec	9,000,000	16,500,000	28,500,000
Cumulative costs to 1 Jan	0	9,000,000	16,500,000
Current costs	9,000,000	7,500,000	12,000,000
Cumulative gross profit to 31 Dec	1,000,000	2,250,000	1,500,000
Cumulative gross profit to 1 Jan	0	1,000,000	2,250,000
Current gross profit/(loss)	1,000,000	1,250,000	(750,000)

2. Journal entries recorded by the Contractor

	20x1		20x2		20x3	
To recognize contract expense						
Dr Contract expense (PL).....	9,000,000		7,500,000		12,000,000	
Cr Cash.....		9,000,000		7,500,000		12,000,000
To recognize revenue						
Dr Contract asset (BS).....	10,000,000		8,750,000		11,250,000	
Cr Contract revenue (PL)....		10,000,000		8,750,000		11,250,000

Explanatory notes:

Contract asset represents the right to consideration for the contractor for the work done to date that is unbilled. Contract asset is eventually reduced when the progress billings are made to the customer. Under IFRS 15, there is no need to maintain a separate contra account for progress billings.

To record progress billings						
Dr Accounts receivable (BS) ...	3,000,000		10,850,000		18,000,000	
Cr Contract asset (BS).....		3,000,000		10,850,000		18,000,000

Explanatory notes:

Progress billings transform the asset from contract asset to accounts receivable. The accounts receivable represent unconditional payment expected from customer after passage of time.

To record cash received						
Dr Cash.....	1,200,000		10,000,000		20,000,000	
Cr Accounts receivable.....		1,200,000		10,000,000		20,000,000

3. Statement of Financial Position (extracts) of the Contractor

	31 Dec 20x1	31 Dec 20x2	31 Dec 20x3
Assets			
Contract asset	7,000,000	4,900,000	
Accounts receivable	1,800,000	2,650,000	650,000
Cash	(7,800,000)	(5,300,000)	2,700,000
Liabilities			
Contract liability			(1,850,000)
Net assets	1,000,000	2,250,000	1,500,000
Equity			
Retained earnings	1,000,000	2,250,000	1,500,000

4. Journal entries recorded by the Customer

	20x1		20x2		20x3	
To recognize progress billings (invoice from contractor) as fixed assets in progress						
Dr Fixed assets in progress.....	3,000,000		10,850,000		18,000,000	
Cr Accounts payable		3,000,000		10,850,000		18,000,000
To record cash paid						
Dr Accounts payable	1,200,000		10,000,000		20,000,000	
Cr Cash		1,200,000		10,000,000		20,000,000

5. Statement of Financial Position (extracts) for the Customer

	31 Dec 20x1	31 Dec 20x2	31 Dec 20x3
Assets			
Fixed assets in progress	3,000,000	13,850,000	31,850,000
Liabilities			
Bank overdraft	1,200,000	11,200,000	31,200,000
Accounts payable	1,800,000	2,650,000	650,000
	3,000,000	13,850,000	31,850,000

6. Consolidation adjustments if customer and contractor are within the same group

Explanatory notes:

We need to eliminate contract revenue, contract expense, contract assets or contract liabilities. Remember that an entity cannot have a contract account with itself. A "contractor" builds for "customers" and not for itself. Hence, the nature of the asset in the group should be "fixed assets", not "contract asset" or "contract liability". Next, we have to adjust the amount in fixed assets. The fixed assets should be the cumulative costs incurred to date, not the sum of progress billings.

		20x1		20x2		20x3	
CJE1: Eliminate contract revenue and expense							
Dr Opening RE.....	Note 1			1,000,000		2,250,000	
Dr Fixed assets.....	Note 2	6,000,000		2,650,000			
Dr Contract revenue	Note 3	10,000,000		8,750,000		11,250,000	
Dr Contract liability	Note 4					1,850,000	
Cr Fixed assets	Note 2						3,350,000
Cr Contract asset.....	Note 4		7,000,000		4,900,000		
Cr Contract expense	Note 5		9,000,000		7,500,000		12,000,000
		16,000,000	16,000,000	12,400,000	12,400,000	15,350,000	15,350,000

Note 1: Remove the cumulative gross profit included in the opening retained earnings (RE)

Note 2: Adjust the difference between fixed assets at two levels

Fixed assets (Group's SFP)	9,000,000	16,500,000	28,500,000
Fixed assets (Customer's SFP)	3,000,000	13,850,000	31,850,000
	6,000,000	2,650,000	(3,350,000)

Note 3: Eliminate the contract revenue for each period

Note 4: Eliminate the contract asset or contract liability at the end of each period (you can't have a contract with yourself)

Note 5: Eliminate the contract expense for each period

	20x1		20x2		20x3	
CJE2: Eliminate intercompany balances						
Dr Accounts payable	1,800,000		2,650,000		650,000	
Cr Accounts receivable		1,800,000		2,650,000		650,000

Explanatory notes:

This entry is to eliminate intercompany balances from the contract. Note however, that this assumes that there are no other transactions that affect the intercompany balances.

7. Statement of Financial Position (extracts) for the Group

	31 Dec 20x1	31 Dec 20x2	31 Dec 20x3
Assets			
Fixed assets in progress	9,000,000	16,500,000	28,500,000
Liabilities			
Bank overdraft	9,000,000	16,500,000	28,500,000

Explanatory notes:

The Group reports only fixed assets in progress at cost. Bank overdraft increases by the same amount to show the cash paid on the costs incurred on the fixed assets. The simplifying assumption here is that the expenditures are incurred through cash payment. In a more realistic setting, the expenditures are incurred through credit purchases, use of own inventory and own fixed assets. We also assume that this is the only transaction for the group resulting in a bank overdraft.

CONCEPT QUESTIONS

State True or False and the reasons for your response. For multiple-choice questions, give the most appropriate answer.

CQ5.1 Payables and receivables in the group statement of financial position include balances with associate companies.

CQ5.2 Dividend income in the profit or loss of a parent company should be eliminated against dividend payable in the statement of financial position of a subsidiary company.

CQ5.3 A profit from an intercompany sale would result in either a higher cost of sales in the income statement or a higher inventory balance in the statement of financial position of the buying company.

CQ5.4 An adjustment needs to be made to the unrealized profit included in the inventory balance to avoid the understatement of group profits and the overstatement of group assets.

CQ5.5 Revenue is recognized in group accounts only when the control of inventory are transferred to a third party.

CQ5.6 The parent's theory underlies the procedure for reducing non-controlling interests' share of current profit with their share of unrealized profit arising from an upstream sale.

CQ5.7 In a downstream sale, when a parent sells to its subsidiary, non-controlling interests' share of current profit is reduced by the latter's share of the unrealized profit.

CQ5.8 If an item purchased at a marked-up price from a group company in the previous year remains unsold at the end of the current year, group inventory and gross profit will have to be reduced.

CQ5.9 If an item purchased at a marked-up price from a group company in the previous year is resold in the current year, group gross profit will increase and group beginning retained earnings will reduce.

CQ5.10 If a subsidiary sells equipment to its parent and recognizes a loss on sale in the previous year and the loss is not indicative of an impairment loss, which of the following is true?

(a) A consolidation adjustment to reduce retained earnings and fixed assets is required.
(b) A consolidation adjustment to reduce gain on sale and fixed assets is required.
(c) A consolidation adjustment to increase retained earnings and fixed assets is required.

CQ5.11 Assuming the situation in CQ5.10, group depreciation expense in each subsequent year of sale will

(a) Not be subject to any adjustment.
(b) Be the sum of the parent's and subsidiary's depreciation adjusted downwards for the depreciation.
(c) Be the sum of the parent's and subsidiary's depreciation adjusted upwards for the depreciation.

CQ5.12 If a subsidiary sells equipment to its parent in the current year at a loss because the value of the equipment is impaired, which of the following is true?

(a) A consolidation adjustment to reverse loss on sale and increase fixed assets is required.
(b) A consolidation adjustment to reverse loss on sale and decrease fixed assets is required.
(c) Loss on sale is reclassified as an impairment loss.

PROBLEMS

P5.1 Consolidation adjustments and worksheets

The trial balances for FIRE and WALL as of 31 December 20x3 are as follows:

	FIRE		WALL	
	Debit	Credit	Debit	Credit
Cash	$ 19,800		$ 3,200	
Accounts receivable	32,000		38,000	
Inventory	330,000		170,000	
Land	160,000		80,000	
Buildings and equipment	680,000		520,000	
Investment in WALL, at cost	196,000			
Cost of goods sold	372,000		159,600	
Depreciation	40,000		30,000	
Interest expense	32,000		10,400	
Other expenses (including tax)	44,850		52,000	
Dividends declared	60,000		30,000	
Accumulated depreciation		$ 280,000		$ 160,000
Accounts payable		184,800		70,000
Bonds payable		400,000		300,000
Bond premium				3,200
Share capital		240,000		160,000
Retained earnings		241,600		100,000
Sales		520,000		250,000
Other income		79,250		50,000
Dividend income from subsidiary		21,000		
Total	$1,966,650	$1,966,650	$1,093,200	$1,093,200

Additional information:

(a) On 1 January 20x2, FIRE purchased 70% of WALL's ordinary shares. At the date of acquisition, share capital of WALL was $160,000 and retained earnings were $40,000.

(i) The excess of the acquisition price over the underlying book value was assigned to:

- Buildings that had a fair value of $40,000 greater than book value and remaining useful life of ten years from 1 January 20x2; and
- Goodwill. Goodwill impairment amounting to 20% of its original cost was recognized in 20x2.

(ii) Fair value of WALL as at acquisition date was $280,000. Non-controlling interests as at 1 January 20x2 had a proportionate share in the fair value of WALL as at that date.

(b) During 20x2, the following transactions arose:

(i) WALL purchased inventory for $64,000 and sold it to FIRE for $96,000. FIRE resold $54,000 of the inventory during 20x3, while the balance of $42,000 remained unsold as at 31 December 20x3.

(ii) FIRE sold the building that it originally purchased for $40,000 to WALL for $64,000. Accumulated depreciation at the date of sale was $8,000. Estimated useful life at date of original purchase was ten years and at the date of resale was eight years. WALL had recognized a full year's depreciation on the building in 20x2.

(c) During 20x3, FIRE sold inventory purchased for $120,000 to WALL for $180,000. WALL resold 40% of the inventory during 20x3.

(d) Tax rate was 20%. Recognize tax effects where appropriate.

Required:

1. Show all consolidation adjustment and elimination entries for the year ended 31 December 20x3.
2. Perform an analytical check on the non-controlling interests in WALL as at 31 December 20x3.
3. Prepare the consolidation worksheets for FIRE and WALL for the year ended 31 December 20x3.
4. Determine the following amounts for 20x3 analytically and compare with the amounts in your consolidation worksheets in 3:
   (a) Consolidated cost of sales
   (b) Consolidated depreciation expense
   (c) Consolidated inventory balance
   (d) Consolidated carrying amount of buildings and equipment
   (e) Consolidated retained earnings

P5.2 Consolidation adjustments and elimination entries

The financial statements of Jewel Ltd and its subsidiary Opal Ltd are shown below:

Income Statement and Partial Statement of Changes in Equity
For the Year Ended 31 December 20x2

	Jewel Ltd	Opal Ltd
Sales	$10,000,000	$3,300,000
Operating profit	$ 1,000,000	$ 160,000
Dividend income from Opal	23,400	
Profit before tax	$ 1,023,400	$ 160,000
Tax	(220,000)	(35,200)
Profit after tax	$ 803,400	$ 124,800
Retained earnings, 1 January 20x2	2,050,000	210,000
Dividends declared	(100,000)	(29,250)
Retained earnings, 31 December 20x2	$ 2,753,400	$ 305,550

Statement of Financial Position
As at 31 December 20x2

	Jewel Ltd	Opal Ltd
Share capital	$2,350,000	$300,000
Retained earnings	2,753,400	305,550
Shareholders' equity	$5,103,400	$605,550
Investment in Opal, cost	$ 450,000	

Other net assets	4,653,400	$605,550
Net assets	$5,103,400	$605,550

Additional information:

(a) Jewel Ltd acquired the interest in Opal Ltd on 1 January 20x0 when the shareholders' equity of Opal was as follows:

Share capital	$300,000
Retained earnings	120,000
Shareholders' equity	420,000
Purchase consideration paid by Jewel Ltd	450,000
Percentage ownership by Jewel Ltd in Opal Ltd	80%

Fair value of identifiable net assets was close to the book value at acquisition date.

(b) Goodwill and non-controlling interests

Non-controlling interests are recognized at fair value on acquisition date.

Fair value of non-controlling interests as at 1 January 20x0 . . . . . $112,500

Goodwill impairment is as follows: $50,000 in previous years and $40,000 in the current year.

(c) Intercompany sales

Intercompany sales made by Jewel to Opal during 20x2	$100,000
Profit on intercompany sales included in Opal's inventory as at 31 December 20x2	30,000

Tax expense on profit on intercompany sales has been properly charged to the income statement of Jewel during 20x2.

(d) Taxation rate was 20%. Tax effects are to be considered wherever appropriate.

Required:

1. Prepare consolidation adjustment and elimination entries for the year ended 31 December 20x2. Show all relevant workings. Worksheets are not required.
2. Perform an analytical check on non-controlling interests as at 31 December 20x2.
3. Perform an analytical check on consolidated retained earnings as at 31 December 20x2.

P5.3 Consolidation and analytical check on non-controlling interests

Prism Co acquired 80% of the stock of Sapphire Co for $300,000 on 1 January 20x7. At acquisition date, Sapphire reported retained earnings of $150,000. The excess of Prism Co's acquisition cost over its share of Sapphire's book value was assigned to buildings and equipment that had a remaining life of ten years at acquisition date and deferred tax liability on the undervalued building and equipment.

The purchase consideration paid by Prism Co was proportional to Prism's share of the fair value of Sapphire Co as an entity. Non-controlling interests are to be measured at its share of fair value of Sapphire Co as at acquisition date. The financial statements of the two companies for the year ended 31 December 20x9 are shown below. Investment in Sapphire Co was carried at cost.

Statements of Financial Position
As at 31 December 20x9

	Prism	Sapphire
Sales	$1,000,000	$ 480,000
Cost of goods sold	(640,000)	(320,000)
Dividend income	16,000	0
Depreciation expense	(100,000)	(10,000)
Interest expense	(72,000)	(14,000)
Tax and other expenses	(44,000)	(76,000)
Profit retained	$ 160,000	$ 60,000
Retained earnings, 1 January	580,000	300,000
Dividends declared	(40,000)	(20,000)
Retained earnings, 31 December	$ 700,000	$ 340,000
Cash and receivables	$ 620,000	$ 420,000
Inventory	640,000	270,000
Land	260,000	150,000
Buildings and equipment, cost	1,500,000	200,000
Investment in Sapphire, cost	300,000	
Debits	$3,320,000	$1,040,000
Accumulated depreciation	$1,000,000	$ 80,000
Payables	1,220,000	420,000
Share capital	400,000	200,000
Retained earnings	700,000	340,000
Credits	$3,320,000	$1,040,000

On 1 January 20x9, Prism Co held inventory purchased from Sapphire Co during 20x8 for $15,000, which had been manufactured by Sapphire at a cost of $10,000. During 20x9, Sapphire sold goods costing $40,000 to Prism Co for $60,000. Prism sold the inventory on hand at the beginning of the year, but continued to hold 40% of its 20x9 purchases from Sapphire on 31 December 20x9. Tax rate was 20%.

Required:

1. Prepare all necessary consolidation elimination and adjustment entries for the year ended 31 December 20x9.
2. Prepare the consolidation worksheets for the year ended 31 December 20x9.
3. Perform an analytical check on the non-controlling interests' balance as at 31 December 20x9.
4. Determine the following consolidated amounts as at 31 December 20x9 analytically and compare with the balances in your consolidation worksheets in Part 3:

   (a) Inventory

page 306

(b) Buildings and equipment, net of accumulated depreciation

(c) Retained earnings

P5.4 Intercompany transfer of fixed assets

Parent Co purchased an equipment on 1 January 20x1 for $200,000. The estimated useful life at that date was ten years with a nil residual value. On 1 July 20x5, Parent Co sold the equipment to Subsidiary Co for $120,000. Parent Co had a 90% ownership interest in Subsidiary Co. On 1 July 20x5, the remaining economic useful life was re-estimated as seven years. Net profit after tax of Subsidiary Co for 20x5 was $500,000. Assume a tax rate of 20% throughout.

Required:

1. Show the consolidated journal entries for 20x5 relating to the above transaction.
2. If the situation had been reversed in that it was Subsidiary Co that sold the equipment to Parent Co, show the consolidated journal entries for 20x5.

P5.5 Consolidation and analytical check on non-controlling interests

The financial statements of P Co and Y Co for the year ended 31 December 20x5 are shown below. P Co acquired a 90% interest in Y Co on 1 January 20x3.

Income Statement and Partial Statement of Changes in Equity
For the Year Ended 31 December 20x5

	P Co	Y Co
Profit before tax (including dividend income)	$2,500,000	$ 900,000
Tax	(500,000)	(180,000)
Profit after tax	$2,000,000	$ 720,000
Dividends declared	(300,000)	(140,000)
Profit retained	$1,700,000	$ 580,000
Retained earnings, 1 January 20x5	900,000	800,000
Retained earnings, 31 December 20x5	$2,600,000	$1,380,000

Statement of Financial Position
As at 31 December 20x5

	P Co	Y Co
Fixed assets, net book value	$2,500,000	$1,250,000
Investment in Y Co, at cost	1,200,000	
Other investments	300,000	
Inventory	750,000	500,000
Accounts receivable	420,000	150,000
Cash	50,000	100,000
	$5,220,000	$2,000,000

Accounts payable	$1,620,000	$ 120,000
Share capital	1,000,000	500,000
Retained earnings	2,600,000	1,380,000
	$5,220,000	$2,000,000
Shareholders' equity of Y Co as at date of acquisition:		
Share capital		$ 500,000
Retained earnings		600,000
		$1,100,000

Fair and book values of identifiable net assets of Y Co (excluding deferred tax liability on fair value adjustments) at date of acquisition are shown below:

	Book value	Fair value
Inventory	$ 200,000	$ 250,000
Other net assets	900,000	900,000
Total net assets	$1,100,000	$1,150,000

Fair value of non-controlling interests as at date of acquisition was $140,000.

Additional information:

(a) Undervalued inventory of Y Co was sold to third parties in 20x4.

(b) Y Co transferred its fixed asset to P Co on 1 January 20x5. Details are as follows:

Transfer price invoiced by Y Co to P Co		$120,000
Original cost of the fixed asset	$100,000	
Accumulated depreciation	(60,000)	
Net book value at 1 January 20x5		40,000
Profit on sale recorded by Y Co in 20x5		$ 80,000
Original useful life		5 years
Remaining life as at 1 January 20x5 (assume nil residual value)		2 years

(c) Assume a tax rate of 20%. Tax effects should be recognized.

Required:

1. Prepare the consolidation adjustments for the year ended 31 December 20x5.
2. Perform an analytical check on non-controlling interests' balance as at 31 December 20x5.
3. If P Co measures non-controlling interests as a proportion of identifiable net assets as at acquisition date, prepare the consolidation adjustment(s) that differs from 1, and perform an analytical check on non-controlling interests' balance as at 31 December 20x5.
4. Perform an analytical check on consolidated retained earnings as at 31 December 20x5.

P5.6 Consolidation and analytical check on non-controlling interests

On 1 January 20x3, P Co acquired 90% of the ownership interest of Y Co for $2,000,000. At that date, the following relate to Y Co:

Book value of net assets on 1 January 20x3	$1,500,000
Excess of fair value over book value of intellectual property	100,000

It was estimated that the intellectual property had a remaining useful life of five years from 1 January 20x3. The fair value of non-controlling interests of Y Co as at the date of acquisition was $200,000. There was no change in the share capital of Y Co since acquisition date. There were no other items in equity other than share capital and retained earnings.

On 1 July 20x4, Y Co transferred its equipment to P Co at a transfer price of $120,000. The equipment was purchased from external vendors on 1 July 20x1 at a price of $140,000. Its estimated useful life was five years from the date of purchase and it had no residual value. The original estimates remained unchanged at the date of transfer.

Y Co sold inventory to P Co on the following dates:

Date of transfer	1 October 20x4	1 June 20x5
Invoiced price	$150,000	$350,000
Original cost	100,000	400,000
In P's warehouse at end 20x4	40% of original batch	
In P's warehouse at end 20x5	10% of original batch	30% of original batch

Losses on transfers are indicative of impairment loss in the underlying asset. Tax rate was 20%. Tax effects are to be recognized.

Extracts of Y Co's financial statements for the year ended 31 December 20x5 are shown below:

Income Statement and Partial Statement of Changes in Equity
For the year ended 31 December 20x5

	Y Co
Profit before tax	$1,300,000
Tax	(260,000)
Profit after tax	$1,040,000
Dividends declared	(200,000)
Profit retained	$ 840,000
Retained earnings, 1 January 20x5	1,500,000
Retained earnings, 31 December 20x5	$2,340,000

Statement of Financial Position
As at 31 December 20x5

	Y Co
Fixed assets, net book value	$2,300,000
Inventory	500,000

Accounts receivable	150,000
Cash	100,000
	$3,050,000
Accounts payable	$ 210,000
Share capital	500,000
Retained earnings	2,340,000
	$3,050,000

Required:

1. Prepare the necessary consolidation adjustments for the year ended December 20x5.
2. Perform an analytical check on non-controlling interests as at 31 December 20x5.
3. If P Co measures non-controlling interests as a proportion of identifiable net assets as at acquisition date, prepare the consolidation adjustment(s) that differs from part 1, and perform an analytical check on non-controlling interests' balance as at 31 December 20x5.

P5.7 Research and development expenditure acquired in a business combination and consolidation

On 1 January 20x4, P Co purchased a 90% interest in Topaz Co, a company that specializes in developing patented engineering processes. To acquire the controlling interest in Topaz Co, P Co transferred consideration to the former owners of Topaz Co as follows:

Shares issued to former owners of Topaz Co	3,000,000
Fair value per share of P Co	$ 0.80
Direct costs of issuing shares	$ 20,000
Transfer of land to former owners of Topaz Co:	
Fair value	$1,200,000
Carrying amount of land	$ 800,000

At the date of acquisition, the shareholders' equity of Topaz Co was as follows:

Share capital	$1,000,000
Retained earnings	520,000
Other comprehensive income	300,000
	$1,820,000

The fair value of non-controlling interests on acquisition date was $340,000. As at acquisition date, Topaz Co had a research and development project that had the following expected outcomes:

Future event	Present value of cash inflows	Probability
Successful outcome	$5,000,000	0.30
Unsuccessful outcome	$ 0	0.70

Topaz Co incurred research expenditures of $120,000. The development expenditures incurred to acquisition date of $100,000 did not meet the conditions for capitalization in IAS 38 *Intangible Assets*. Topaz Co successfully completed the research and development project on 31 December 20x5. The estimated economic life of the intangible asset was ten years. P Co and its group use the cost model to measure its intangible assets. The financial statements of Topaz Co for the year ended 31 December 20x6 are as follows:

TOPAZ CO
Partial Income Statement and Statement of Changes in Equity
For the Year Ended 31 December 20x6

Profit before tax	$2,300,000
Tax	(460,000)
Profit after tax	$1,840,000
Dividends declared	(120,000)
Profit retained	$1,720,000
Retained earnings as at 1 January 20x6	480,000
Retained earnings as at 31 December 20x6	$2,200,000

TOPAZ CO
Statement of Financial Position
As at 31 December 20x6

Fixed assets, net book value	$3,890,000
Amount due from P Co	67,000
Inventory	190,000
Accounts receivable	320,000
Cash	67,000
	$4,534,000
Other liabilities	$ 884,000
Share capital	1,000,000
Retained earnings	2,200,000
Other comprehensive income (OC1) balance	450,000
	$4,534,000
OCI balance as at 1 Jan 20x6	$ 158,000

Additional information:

(a) On 1 July 20x5, Topaz Co transferred excess equipment to P Co at an invoiced price of $1,200,000. Topaz Co had purchased the equipment on 1 July 20x2 at an original cost of $800,000, when the useful life was ten years. The remaining useful life on 1 July 20x5 was four years. Residual value was negligible.

(b) On 1 July 20x6, P Co sold inventory to Topaz Co at the transfer price of $360,000. The carrying amount of the inventory in P Co's books prior to the sale was $280,000. Forty percent remained unsold as at 31 December

20x6.

(c) Recognize tax effects on fair value adjustments and other adjustments at the tax rate of 20%.

(d) Other comprehensive income (OCI) arises from items of income that bypass net income in accordance with IAS 1 *Presentation of Financial Statements*. OCI is built up in separate accounts in equity. (Hint: Where OCI balance at beginning of the year is provided, separate allocation of current and change in post-acquisition OCI in the same way as for profit and post-acquisition retained earnings).

Required:

1. Explain how the accounting for research and development differs for the legal entity and the economic entity at acquisition date and after acquisition date in accordance with IAS 38.
2. Prepare consolidation entries for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.
3. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6, showing the workings clearly.
4. If P's retained earnings as at 31 December 20x6 was $5,000,000, perform an analytical check on consolidated retained earnings as at 31 December 20x6.
5. If the fair value of the remaining inventory sold by P Co to Topaz Co was $130,000 as at 31 December 20x6, explain if the new information has any effect on your consolidation adjustment.

P5.8 Transfer of assets and consolidation

P Co acquired a controlling interest of 90% in X Co. The financial statements of P Co and X Co and other relevant details are shown below:

Partial Income Statement and Statement of Changes in Equity
For Year Ended 31 December 20x6

	P Co	X Co
Profit before tax	$2,500,000	$870,000
Tax	(500,000)	(174,000)
Profit after tax	$2,000,000	$696,000
Dividends declared	(300,000)	(145,000)
Profit retained	$1,700,000	$551,000
Retained earnings, 1 January 20x6	1,890,000	200,000
Retained earnings, 31 December 20x6	$3,590,000	$751,000

Statement of Financial Position
As at 31 December 20x6

	P Co	X Co
Fixed assets, net book value	$2,780,000	$1,200,000
Investment in X, at cost	1,200,000	
Other investments	880,000	
Inventory	350,000	200,000

Intercompany receivable		65,000
Accounts receivable	200,000	120,000
Cash	30,000	60,000
	$5,440,000	$1,645,000
Accounts payable	$ 785,000	$ 294,000
Intercompany payable	65,000	
Share capital	1,000,000	600,000
Retained earnings	3,590,000	751,000
	$5,440,000	$1,645,000

	X Co
Date of acquisition	1 January 20x3
Percentage acquired by P Co	90%
Shareholders' equity at date of acquisition:	
Share capital	$600,000
Retained earnings	120,000
	$720,000

Fair value of non-controlling interest as at date of acquisition was $120,000.

Fair and book values of identifiable net assets of X Co at date of acquisition:

	Book value	**Fair value**
Fixed assets	$220,000	$340,000
Other net assets	500,000	500,000
Total net assets	$720,000	$840,000

Additional information:

(a) The fixed assets of X Co as at the date of acquisition had a remaining life of six years. On 1 January 20x6, as result of technical enhancement, the remaining useful life was revised to five years.

(b) On 1 January 20x6, X Co transferred excess fixed assets to P Co at the transfer price of $300,000. The original cost of the fixed assets was $260,000 and the accumulated depreciation was $124,800. The original useful life was five years and the estimated remaining useful life at transfer date was three years. Residual value was negligible.

(c) P Co sold inventory to X Co on 15 December 20x6 at a transfer price of $50,000. The original cost as carried in P Co's books prior to the transfer was $53,000. Fair value of the inventory at transfer date was $55,000. Sixty percent of the inventory remained unsold as at 31 December 20x6. Fair values remained stable after the transfer date.

(d) Tax rate was 20% throughout. Recognize tax effects on fair value adjustments.

Required:

1. Prepare consolidation entries for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6, showing the workings clearly.
3. Perform an analytical check on the following consolidated amounts. Show workings clearly. (Derive the consolidated balance through a compilation of relevant CJEs and analytically check this number through an independent and logical process):
   a. Consolidated fixed assets as at 31 December 20x6
   b. Consolidated inventory as at 31 December 20x6
   c. Consolidated retained earnings as at 1 January 20x6
   d. Consolidated retained earnings as at 31 December 20x6

P5.9 Capitalization of intragroup interest and consolidation

P Co acquired a controlling interest of 90% in X Co on 1 January 20x3. The financial statements for the year ended 31 December 20x6 and other information are provided below.

Partial Income Statement and Statement of Changes in Equity
For Year Ended 31 December 20x6

	P Co	X Co
Profit before tax	$2,200,000	$ 800,000
Tax	(440,000)	(160,000)
Profit after tax	$1,760,000	$ 640,000
Dividends declared	(100,000)	(90,000)
Profit retained	$1,660,000	$ 550,000
Retained earnings, 1 Jan 20x6	1,200,000	650,000
Retained earnings, 31 Dec 20x6	$2,860,000	$1,200,000

Statement of Financial Position
As at 31 December 20x6

	P Co	X Co
Fixed assets, net book value	$3,800,000	$2,800,000
Loan receivable from P Co		1,000,000
Investment in X, at cost	1,200,000	
Other investments	820,000	
Inventory	554,000	320,000
Accounts receivable	470,000	280,000
Cash	90,370	35,000
	$6,934,370	$4,435,000
Other liabilities	$1,574,370	$2,735,000

Loan payable to X Co	1,000,000	
Share capital	1,500,000	500,000
Retained earnings	2,860,000	1,200,000
	$6,934,370	$4,435,000
Shareholders' equity at date of acquisition		
Share capital		$ 500,000
Retained earnings		400,000
		$ 900,000

Fair value of non-controlling interest as at date of acquisition was $118,000. As at acquisition, the book and fair value of identifiable net assets was as follows:

	Book value	Fair value
Equipment	$480,000	$ 600,000
Other net assets	420,000	420,000
Total net assets	$900,000	$1,020,000

Additional information:

(a) The undervalued equipment had an estimated useful life of six years as at acquisition date.

(b) During 20x5, X Co sold raw materials to P Co at transfer price of $150,000 when the carrying amount was $135,000. Subsequently:

Percentage unsold as at 31 December 20x5	60%
Percentage unsold as at 31 December 20x6	10%

(c) P Co constructed a warehouse during 20x5. As X Co could borrow from banks at more competitive rates, X Co borrowed $1 million from third party banks and extended a loan of $1 million to P Co in July 20x5 to fund P's construction of the warehouse. X Co charged interest on the loan to P Co at P Co's cost of debt, and recognized interest income during the period of the loan. P Co capitalized the interest charged by X Co into the cost of the warehouse in accordance with IAS 23 *Borrowing Costs*. The warehouse was completed on 1 October 20x6, and had an economic useful life of 20 years. Details of the interest charges were as follows:

Interest capitalized into the cost of the warehouse by P Co.:	
Interest charged by X Co during 20x5	$200,000
Interest charged by X Co from January to September 20x6	$150,000
Interest expense of P Co.:	
Interest charged by X Co from October to December 20x6	$30,000

The interest expense on external borrowings incurred by X Co to finance the construction of the warehouse is as follows:

Interest expense for 20x5	$120,000
Interest expense for January to September 20x6	$ 80,000

4. Tax rate was 20% throughout. Recognize tax effects on fair value adjustments.

Required:

1. If the cost of the warehouse (including the capitalized interest) in P Co's books as at 1 October 20x6 was $3,500,000, determine the:
   a. Cost of the warehouse for the economic entity as at 1 October 20x6; and
   b. Net book value of the warehouse for the legal entity (P Co) and the economic entity as at 31 December 20x6.
2. Prepare consolidation entries for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.
3. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6, showing the workings clearly.
4. Perform an analytical check on the following balances:
   a. Consolidated retained earnings as at 31 December 20x6
   b. Consolidated fixed assets as at 31 December 20x6
   c. Consolidated inventory as at 31 December 20x6

P5.10 Troubled receivables at acquisition, transfer of assets and consolidation

P Co acquired a controlling interest in Y Co on 1 January 20x4 as follows:

Percentage acquired by P Co	90%
Shareholders' equity at date of acquisition:	
Share capital	$1,000,000
Retained earnings	550,000
Revaluation reserves	120,000
	$1,670,000

	Book value	Fair value
Accounts receivable	170,000	130,000
Other net assets	1,500,000	1,500,000
Total net assets	1,670,000	1,630,000

Fair value of non-controlling interests as at 1 January 20x4 was $180,000. The financial statements for the year ended 31 December 20x6 are shown below:

Partial Income Statement and Statement of Changes in Equity
For the Year Ended 31 December 20x6

	P Co	Y Co
Profit before tax	$2,000,000	$ 700,000
Tax	(400,000)	(140,000)
Profit after tax	$1,600,000	$ 560,000

Dividends declared	(120,000)	(100,000)
Profit retained	$1,480,000	$ 460,000
Retained earnings, 1 Jan 20x6	1,450,000	670,000
Retained earnings, 31 Dec 20x6	$2,930,000	$1,130,000

Statement of Financial Position
As at 31 December 20x6

	P Co	Y Co
Fixed assets, net book value	$3,200,000	$2,900,000
Investment in Y, at cost	1,800,000	
Other investments	980,000	
Amount due from P Co		120,000
Inventory	600,000	400,000
Accounts receivable	420,000	368,000
Cash	56,000	23,000
	$7,056,000	$3,811,000
Accounts payable	$2,506,000	$1,281,000
Amount due to Y Co		120,000
Share capital	1,500,000	1,000,000
Retained earnings	2,930,000	1,130,000
Revaluation reserves		400,000
	$7,056,000	$3,811,000
Revaluation reserves at 1 Jan 20x6		$ 350,000

Additional information:

(a) During 20x5, Y Co expensed off impairment loss so that the troubled receivables at acquisition date were written down to the recoverable amount of $130,000. No further losses were expected thereafter.

(b) On 1 January 20x6, Y Co sold equipment to P Co at a transfer price of $250,000. The original cost of the equipment was $300,000 and the accumulated depreciation at the date of transfer was $112,500. Residual value was negligible. The original useful life of the equipment was eight years and the remaining useful life as at the date of transfer was three years.

(c) On 1 November 20x6, P Co sold inventory to Y Co at fair value of $80,000. The carrying amount in P Co's books was $70,000. Forty percent remained unsold as at 31 December 20x6. The fair value of the remaining inventory as at 31 December 20x6 was $30,000.

(d) Tax rate was 20% throughout. Recognize tax effects on fair value adjustments.

Required:

1. Prepare consolidation entries for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.

2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6, showing the workings clearly.
3. Perform an analytical check on the following consolidated amounts. Show workings clearly. (Derive the consolidated balance through a compilation of relevant entries and analytically check this number through an independent and logical process):
   a. Consolidated fixed assets as at 31 December 20x6
   b. Consolidated inventory as at 31 December 20x6
   c. Consolidated retained earnings as at 1 January 20x6
   d. Consolidated retained earnings as at 31 December 20x6

P5.11 Construction accounting and consolidation

P Co acquired interests in Silver Co. The current financial statements are shown below. All figures are in dollars, unless as otherwise indicated.

Abridged Income Statement and Statement of Changes in Equity
For the year ended 31 Dec 20x6

	P Co	Silver Co
Profit before tax	$2,500,000	1,670,000
Tax	(500,000)	(334,000)
Profit after tax	2,000,000	1,336,000
Dividends declared	(320,000)	(90,000)
Profit retained	1,680,000	1,246,000
Retained earnings, 1 Jan 20x6	4,320,000	1,320,000
Retained earnings, 31 Dec 20x6	6,000,000	2,566,000

	P Co	Silver Co
Fixed assets, net book value	4,000,000	3,800,000
Investment in Silver Co, at cost	2,200,000	
Inventory and development properties	6,000,000	400,000
Intercompany receivable		500,000
Accounts receivable	600,000	320,000
Cash	20,000	80,000
	12,820,000	5,100,000
Deferred tax liability	220,000	34,000
Accounts payable	4,100,000	1,600,000
Intercompany payable	500,000	
Share capital	2,000,000	900,000
Retained earnings	6,000,000	2,566,000
	12,820,000	5,100,000

	Silver Co
Date of acquisition	1 Jan 20x3
Percentage acquired by P Co	90%
Shareholders' equity at date of acquisition:	
Share capital	900,000
Retained earnings	800,000
	1,700,000

Fair and book values of identifiable net assets at date of acquisition was as follows:

	Silver Co →	
	Book value	Fair value
Inventory	180,000	230,000
Other net assets	1,520,000	1,520,000
Total net assets	1,700,000	1,750,000

Fair value of non-controlling interests in Silver at acquisition date was $220,000.

Additional information:

1. The under-valued inventory of Silver Co was disposed as follows:

   90% was resold to third party customers by 31 December 20x5.
   10% remained unsold as at 31 December 20x6.
   The net realizable value of remaining inventory as at 31 December 20x6 was $20,000.

2. On 15 September 20x5, Silver Co transferred the following inventory to P Co:

page 319

Transfer price	$120,000
Original cost (carrying amount)	$100,000
Inventory resold to third parties during 20x5	60%
Inventory resold to third parties during 20x6	20%
Inventory written off as obsolete during 20x6	10%

3. Silver Co provides sub-contracting services to P Co, a property developer. During 20x5 and 20x6, Silver Co recognized profit from contract work for P Co. The development project to build a block of flatted factory on a 20-year leasehold land was completed on 30 June 20x6. Applying the requirements of IFRS 15 *Revenue from Contracts with Customers,* Silver Co recognized revenue progressively using the percentage of completion method to recognize income while P Co recognized revenue when the units were sold. On 31 December 20x6, 40% of the units were unsold.

	31 Dec 20x5	31 Dec 20x6
Construction revenue for year	800,000	850,000

Construction costs for year	(600,000)	(750,000)
Construction profit for year	200,000	100,000
Current progress billings for year	670,000	980,000

The contract asset account of Silver Co was closed on 30 June 20x7.

4. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6, with narratives (brief headers).
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6.
3. Perform an analytical check on the balance of consolidated retained earnings as at 31 December 20x6.

P5.12 Upstream and downstream transfers and consolidation

P Co acquired interests in X Co. The current financial statements are shown below. All figures are in dollars, unless as otherwise indicated.

Income Statement and partial Statement of Changes in Equity for the year ended 31 December 20x4

	P Co	X Co
Profit before tax	2,800,000	800,000
Tax	(560,000)	(160,000)
Profit after tax	2,240,000	640,000
Dividends declared	(120,000)	(40,000)
Retained profit	2,120,000	600,000
Retained earnings, 1 Jan 20x4	1,000,000	520,000
Retained earnings, 31 Dec 20x4	3,120,000	1,120,000

Abridged Statement of Financial Position as at 31 December 20x4

	P Co	X Co
Investment in X Co, at cost	1,000,000	
Other investments	600,000	
Amount due to X Co	(100,000)	
Amount due from P Co		100,000
Other net assets	3,220,000	1,520,000
	4,720,000	1,620,000
Share capital	1,600,000	500,000
Retained earnings	3,120,000	1,120,000

	4,720,000	1,620,000

	X Co
Date of acquisition	1 Jan 20x1
Percentage of voting rights acquired by P Co	90%
Shareholders' equity at date of acquisition of voting rights	
Share capital	500,000
Retained earnings	350,000
	850,000
Fair value of non-controlling interests as at date of acquisition	100,000

Fair and book values of identifiable net assets as at date of acquisition:

	X Co →	
	Book value	Fair value
Intangible asset	250,000	300,000
Other net assets	600,000	600,000
Total net assets	850,000	900,000

Additional information:

1. The remaining useful life of the intangible asset of X Co as at the date of acquisition was five years, with negligible residual value. On 31 December 20x3, the following information relates to the intangible asset

Fair value less cost to sell	$ 90,000
Value in use	$110,000

The remaining useful life as at 31 December 20x3 was two years.

2. On 10 November 20x3, X Co sold inventory to P Co at an invoiced price of $130,000. page 321

The carrying amount and original cost of the inventory was $100,000. Subsequently, the inventory was:

Resold to third parties during 20x3	60%
Resold to third parties during 20x4	30%
Unsold as at 31 December 20x4	10%

3. On 1 July 20x4, P Co sold equipment to X Co at a transfer price of $70,000.

At the date of the transfer, the following relates to the equipment:

Original cost	$120,000
Carrying amount (net book value)	$100,000
Remaining useful life on 1 July 20x4	10 years
Fair value of equipment	$80,000

4. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x4.
2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x4.
3. Perform an analytical check on the balance of consolidated retained earnings as at 31 December 20x4.

P5.13 Capitalization of borrowing costs and consolidation

P Co acquired interests in Silver Co. The current financial statements are shown below. All figures are in dollars, unless as otherwise indicated.

Income Statement for year ended 31 December 20x6

	P Co	Silver Co
Profit before tax	3,000,000	2,000,000
Tax	(600,000)	(400,000)
Profit after tax	2,400,000	1,600,000
Dividends declared	(220,000)	(100,000)
Profit retained	2,180,000	1,500,000
Retained earnings, 1 Jan 20x6	5,500,000	1,600,000
Retained earnings, 31 Dec 20x6	7,680,000	3,100,000

Abridged Statement of Financial Position as at 31 December 20x6

	P Co	Silver Co
Investment in Silver Co	3,200,000	
Other investments	1,100,000	
Other net assets	5,880,000	4,100,000
	10,180,000	4,100,000
Share capital	2,500,000	1,000,000
Retained earnings	7,680,000	3,100,000
	10,180,000	4,100,000

	Silver Co
Date of acquisition	1 Jan 20x3
Percentage acquired by P Co	90%
Shareholders' equity at date of acquisition	

Share capital	1,000,000
Retained earnings	800,000
	1,800,000

Fair and book values of identifiable net assets as at date of acquisition

	Silver Co →	
	Book value	**Fair value**
Inventory	220,000	250,000
Other net assets	1,580,000	1,580,000
Total net assets	1,800,000	1,830,000
Fair value of non-controlling interests of Silver		$320,000

Additional information:

1. The under-valued inventory of Silver was disposed as follows:

   60% was sold to third party customers by 31 December 20x5.
   20% was sold to third party customers during 20x6.
   10% was destroyed by floods during 20x6.
   10% remained unsold at 31 December 20x6.

2. On 1 July 20x6, Silver Co transferred the following inventory to P Co:

Fair value	$90,000
Transfer price	$80,000
Original cost (book value)	$100,000

   Forty percent of the inventory was unsold as at 31 December 20x6.
   The fair value of the unsold inventory as at 31 December 20x6 was $30,000.

3. On 1 January 20x5, Silver Co borrowed a long-term loan of $20,000,000 from an unrelated bank. From the proceeds of the external loan, Silver Co extended to P Co a loan of $10,000,000 on 1 July 20x5 to build a warehouse, and $2,000,000 to finance the purchase of inventories. The construction of the warehouse was completed on 30 September 20x6. The estimated useful life of the warehouse was ten years. Details of the borrowings were as follows:

   page 323

Average interest rate on loan from bank	2.5% p.a.
Average interest rate charged to P Co	3.0% p.a.

   The loans to P Co remained unpaid as at 31 December 20x6.

4. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6.

2. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6.
3. Perform an analytical check on the balance of consolidated retained earnings as at 31 December 20x6.

P5.14 Intragroup transfers

P Co acquired a controlling interest in 90% of X Co. The financial statements of P Co and X Co and other relevant details are shown below. All figures are in dollars, unless as otherwise indicated.

Income Statement and partial Statement of Changes in Equity for year ended 31 December 20x6

	P Co	X Co
Profit before tax	2,200,000	890,000
Tax	(440,000)	(178,000)
Profit after tax	1,760,000	712,000
Dividends declared	(120,000)	(45,000)
Profit retained	1,640,000	667,000
Retained earnings, 1 Jan 20x6	935,000	220,000
Retained earnings, 31 Dec 20x6	2,575,000	887,000

Statement of Financial Position as at 31 December 20x6

	P Co	X Co
Fixed assets, net book value	2,890,000	1,420,000
Investment in X, at cost	1,050,000	
Inventory	340,000	143,000
Intercompany receivable		70,000
Accounts receivable	200,000	120,000
Cash	39,000	20,000
	4,519,000	1,773,000
Accounts payable	1,014,000	136,000
Intercompany payable	70,000	
Share capital	860,000	750,000
Retained earnings	2,575,000	887,000
	4,519,000	1,773,000

Date of acquisition	1 January 20x3
Percentage acquired by P Co	90%
Shareholders' equity at date of acquisition	
Share capital	750,000
Retained earnings	105,000
	855,000

Fair value of non-controlling interests as at date of acquisition	105,000

Fair and book values of identifiable net assets at date of acquisition

	Book value	Fair value
Equipment	120,000	180,000
Other net assets	735,000	735,000
Total net assets	855,000	915,000

Additional information:

1. The under-valued equipment of X Co as at the date of acquisition had a remaining life of ten years. On 1 January 20x6 as result of technical problems, the remaining useful life was revised to five years.
2. On 1 January 20x6, X Co transferred excess fixed assets to P Co at the transfer price of $120,000. The original cost of the fixed assets was $150,000 and the accumulated depreciation was $90,000. The original useful life was six years and the estimated remaining useful life at transfer date was three years. Residual value was negligible.
3. P Co sold inventory to X Co on 30 September 20x5 at a transfer price of $145,000. The original cost as carried in P Co's books prior to the transfer was $120,000. Thirty percent of the inventory remained unsold as at 31 December 20x5 and ten percent of the original inventory remained unsold as at 31 December 20x6.
4. Tax rate was 20% throughout. Recognize tax effects on fair value adjustments.

page 325

Required:

(a) Prepare consolidation adjusting entries for the year ended 31 December 20x6.

(b) Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6.

(c) Perform an analytical check on the balance of consolidated retained earnings as at 31 December 20x6.

P5.15 Intragroup transfer

P Co acquired a controlling interest in Y Co on 1 January 20x4. The financial statements of P Co and Y Co and other relevant details are shown below. All figures are in dollars, unless as otherwise indicated.

Income Statement and partial Statement of Change of Equity for the year ended 31 December 20x6

	P Co	Y Co
Profit before tax	2,570,000	1,780,000
Tax	(514,000)	(356,000)
Profit after tax	2,056,000	1,424,000
Dividends declared	(102,000)	(100,000)
Profit retained	1,954,000	1,324,000
Retained earnings, 1 Jan 20x6	1,268,400	410,000
Retained earnings, 31 Dec 20x6	3,222,400	1,734,000

Statement of Financial Position as at 31 December 20x6

	P Co	Y Co

Fixed assets, net book value	3,289,000	2,850,000
Investment in Y Co, at cost	1,280,000	
Other investments	570,000	
Amount due from P Co		100,000
Inventory	530,000	320,000
Accounts receivable	245,000	227,000
Cash	62,070	17,000
	5,976,070	3,514,000

	P Co	**Y Co**
Accounts payable	873,670	560,000
Amount due to Y Co	100,000	
Share capital	1,780,000	900,000
Retained earnings	3,222,400	1,734,000
Revaluation reserves		320,000
	5,976,070	3,514,000

Date of acquisition	1 January 20x4
Percentage acquired by P Co	90%
Shareholders' equity at date of acquisition	
Share capital	900,000
Retained earnings	120,000
Revaluation reserves	90,000
	1,110,000
Revaluation reserves at 1 Jan 20x6	55,000

Fair and book values of identifiable net assets of Y Co at date of acquisition

	Book value	**Fair value**
Accounts receivable	320,000	300,000
Other net assets	790,000	790,000
Total net assets	1,110,000	1,090,000
Fair value of non-controlling interests as at acquisition date		128,000

Additional information:

1. At acquisition date, Y Co had not made a provision for impairment loss of $20,000 on one of its debtors, Company Z. P Co, on acquisition of Y Co, had made the provision in its consolidated financial statements in accordance with the acquisition method in IFRS 3. On 31 December 20x5, the evidence confirmed that there

was an actual impairment loss of $30,000 on the amount due from Company Z. Both Y Co and the Group made the appropriate adjustments. No further losses were expected thereafter.

2. On 1 January 20x6, Y Co sold equipment to P Co at a transfer price of $300,000. The original cost of the equipment was $345,000 and the accumulated depreciation at the date of transfer was $115,000. Residual value was negligible. The original useful life of the equipment was six years and the remaining useful life as at the date of transfer was four years.
3. On 1 November 20x6, Y Co sold inventory to P Co at transfer price of $130,000. The carrying amount in Y Co's books was $90,000. Seventy percent remained unsold as at 31 December 20x6.
4. Tax rate was 20% throughout. Recognize tax effects on fair value adjustments.

Required:

(a) Prepare consolidation adjusting entries for the year ended 31 December 20x6.

(b) Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6.

(c) Perform an analytical check on the balance of consolidated retained earnings as at 31 December 20x6.

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[1] IAS 16 *Property, Plant and Equipment* requires the initial costs of property, plant, and equipment to include directly attributable costs such as employee benefits arising directly from the construction or development of the asset.

[2] Consolidation elimination entries that have no net impact on retained earnings need not be repeated each year. These include entries discussed in "Elimination of Realized Intragroup Transactions" of this chapter. For example, interest expense is eliminated against interest income to avoid overstatement of the disclosed line items, but they are naturally offsetting in terms of their final effect on net profit and retained earnings.

[3] However, transfer of an asset at a loss may indicate an impairment loss in the asset. Special considerations relating to such transfers are discussed in a later section of this chapter.

[4] A detailed explanation of the application of IFRS 15 is given in *Intermediate Accounting: Global 2nd Edition,* McGraw-Hill, 2018.

CHAPTER

6

Group Reporting V

Equity Accounting under IAS 28 Joint Arrangements under IFRS 11

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

LO1 Understand the concept of “significant influence” and “joint control”;

LO2 Appreciate the different accounting policies for investment in an associate and joint venture as reflected in an investor’s separate financial statements and the consolidated financial statements;

LO3 Understand the differences between the cost and equity method and consolidation;

LO4 Know how to apply the equity method in accounting for investment in an associate and joint venture in the consolidated financial statements;

LO5 Perform an analytical check on the balance of the investment in an associate and joint venture; and

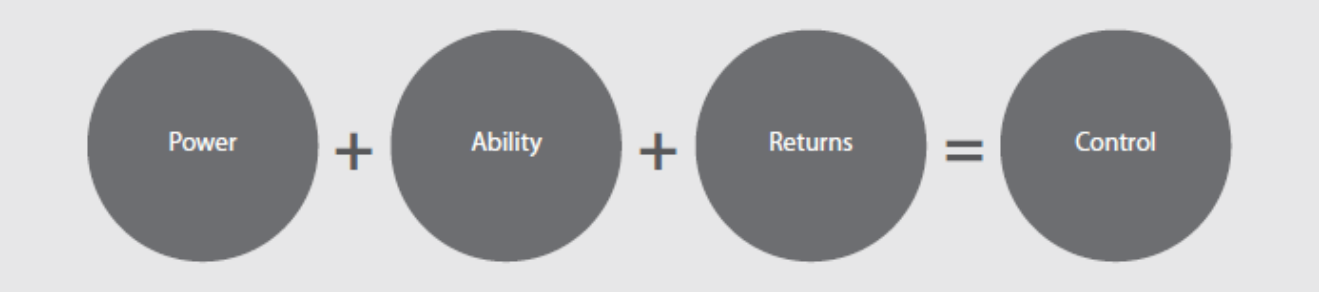
LO6 Appreciate the nature of joint arrangements and know how to apply the appropriate accounting treatment.

EQUITY METHOD VERSUS COST METHOD

Concept of "Significant Influence"

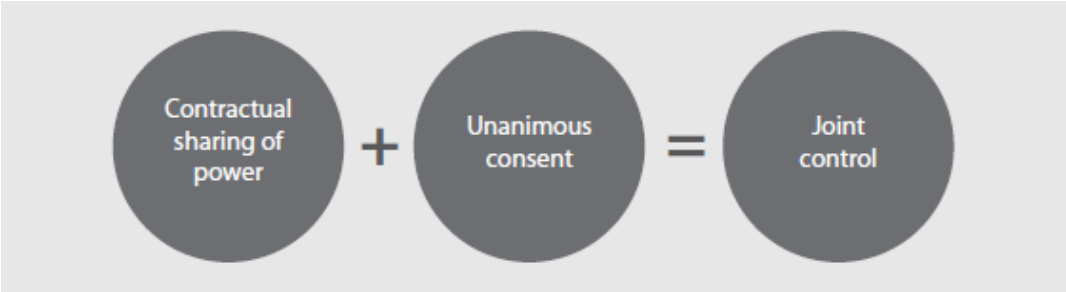
Chapter 2 explained the concepts of "significant influence" and "associate." Significant influence is the power to participate in the financial and operating policy decisions of the investee, but is not control or joint control of those policies. An investor of an associate is not a "parent," as defined by IFRS 10 *Consolidated Financial Statements*. In IFRS 10, a parent is an entity that "controls" another entity (that is, a subsidiary). We saw in Chapter 2 that an investor has control over an investee when that investor has an exposure or rights to variable returns of the investee and has the ability to use its power to affect those returns.[1] In other words, three important elements exist in a control relationship. A control relationship exists when the investor has power over the investee. However, the investor must also have the ability to use the power. For example, if an investor has power through voting rights, but the investee's business is expropriated by some higher authority, the investor is quite helpless and the power through voting rights is ineffective. Finally, the investor must be exposed or have rights to variable returns of the investee. We show the 3-element control relationship in Figure 6.1.

FIGURE 6.1 Control



Joint control, on the other hand, is the contractual sharing of control, which requires all parties in a joint arrangement to unanimously agree on decisions about relevant activities of the arrangement.[2] For joint control to exist, two elements must be present (see Figure 6.2).

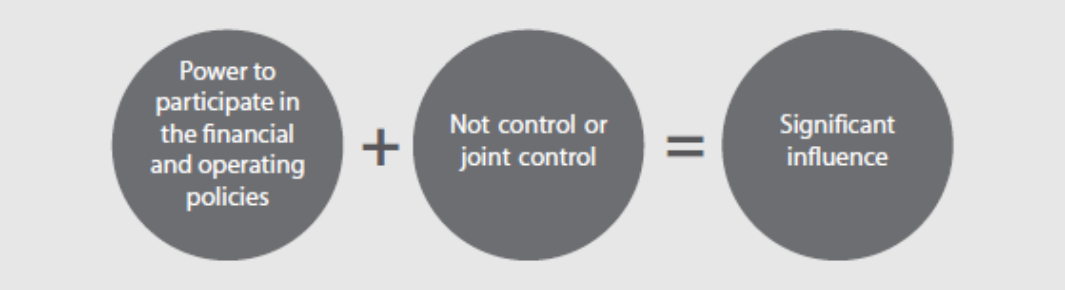
FIGURE 6.2 Joint control



By comparison, significant influence (see Figure 6.3) is not as powerful as control or joint control. It lacks the ability to determine the final decisions made on relevant activities of the investee. An investor's consent is also not required to arrive at these decisions when the investor has only significant influence. However, investors with

significant influence may participate in the process of decision-making. The existence of significant influence is evidenced in different ways. For example, representation on the board of directors is common evidence of significant influence. In some situations, an investor may have significant influence over an investee by virtue of a strategic relationship between the two parties. There may be material transactions between the investor and investee, interchange of managerial personnel, or provision of essential technical information.[3]

FIGURE 6.3 Significant influence



IAS 28 *Investments in Associates and Joint Ventures* sets a default presumption that the direct or indirect holding of 20% or more of the voting power of an investee leads to significant influence.[4] The upper limit is when control begins. As 20% is only a presumed minimum threshold for significant influence, an investor may depart from this threshold if the investor is able to demonstrate that the quantitative threshold is not indicative of significant influence. In the spirit of principles-based accounting standards of the International Accounting Standards Board (the Board), IAS 28 allows the investor to show that there is significant influence even when the direct or indirect holding falls below 20%. Conversely, the investor may also show that there is no significant influence when the direct or indirect holding is 20% or more. However, such departures from the default threshold must be explained and disclosed in the footnotes. The party that has significant influence over an "associate" is simply referred to as an investor in IAS 28. As with accounting for investments in subsidiaries, accounting for investments in associates differs with respect to the different levels of financial statements presented as shown in Table 6.1.

TABLE 6.1 Accounting policy for investments in associates

Levels of financial reporting	Accounting policy for accounting for investments in associates
1. Investor's separate financial statements	Cost or in accordance with IFRS 9 *Financial Instruments:* or the equity method
2. Consolidated financial statements: where an investor has investments in both subsidiaries and associates	Equity method
3. Investor's financial statements in place of consolidated financial statements: where an investor has investments in associates but not subsidiaries	Equity method

An investor of an associate must present the separate financial statements for itself as a legal entity, *and* either the consolidated financial statements or an investor's financial statements in place of consolidated financial statements. The last two financial statements relate to economic entity reporting. In some situations, the investor has only associates and will not present consolidated financial statements. However, the investor has to present two sets of

financial statements, one for the legal entity and the other for the economic entity, using the equity method. While the cost method is used often in reporting the investment in associates in the legal entity's financial statements, the equity method is used in reporting the investment in associates in the economic entity's financial statements. The investor is exempted from applying the equity method in the economic entity's financial statements in one of the following situations:

1. When the exemptions to consolidation in IFRS 10 applies. For example, the investor is a wholly-owned subsidiary of another investor and the investor's shares are not publicly traded. Chapter 3 explains the other exemptions.
2. When the investor is a venture capital organization, mutual fund of unit trust, or a similar organization, the investor may choose to measure the investment at fair value through profit or loss in accordance with IFRS 9 *Financial Instruments.*

Accounting for investments in associates in the investor's separate financial statements is the same as accounting for investments in subsidiaries in the investor's separate financial statements (IAS 27:10), that is, the investment may be measured either at cost or as a financial instrument in accordance with IFRS 9 *Financial Instruments*. For financial periods beginning on or after 1 January 2016, the equity method may be applied in accounting for investments in associates in the investor's separate financial statements (IAS 28:10). The same accounting method applies to all investments in each category.

What Is the Equity Method?

The **equity method** is "a method of accounting whereby the investment is initially recognized at cost and adjusted thereafter for the post-acquisition change in the investor's share of net assets of the investee. The profit or loss of the investor includes the investor's share of the profit or loss of the investee" (IAS 28:3).

In a nutshell, equity accounting essentially:

1. "Capitalizes" profits by adding them to the initial cost of the investment;
2. Does not eliminate the investment in associate account but presents the investment balance as the investor's share of the net assets of the associate including the unamortized balance of fair value adjustments, and the implicit goodwill held by the investor in an associate; and
3. Does not treat dividends as income but as "repayment" of the capitalized profits.

Contrast this with the *cost method* whereby the investment is recognized at initial cost, and the investor recognizes dividend income in profit or loss. The cost method is asymmetric; only impairment losses are recognized but no recognition is made for increases in the carrying amount of the investment.

Essentially, the equity method results in a carrying amount that is neither cost nor fair value but somewhere in between. The carrying amount of the investment under the equity method increases or decreases over time with the profits or losses made by an associate, and is reduced by the distribution of profits made by the associate. Dividends are deemed as a realization of profit rather than profit itself. The "capitalization" of profit increases the investment account and the retained earnings of the investor. The "capitalized" profits are an expectation of future dividend payments, and hence, increases the carrying amount of the asset. However, an investment carried under the equity method is not an approximation of fair value because equity accounting recognizes book profits and not the fair value changes of an investment.

page 331

Although the equity method does not capture the fair value of an investment, it is a more timely method of recognizing profit from an associate than the cost method. Since dividends lag behind profit, the earlier recognition of the share of profit under the equity method provides more timely information about the performance of an associate company than the cost method. Earlier recognition of the share of profit of an associate also provides users of financial statements with a basis to predict future dividend cash flows from an associate.

Comparison between the Cost Method, Equity Method, and Fair Valuation

Although there appears to be significant differences between the cost, equity and fair value methods, the main difference is one of *timing*. Eventually, the total stream of income that flows from each method are the same. The cost method, although slower in recognizing profit, catches up with a large terminal profit on sale. Fair value through profit or loss (FVTPL), on the other hand, provides the most timely and dynamic form of income recognition. Table 6.2 shows a comparison of the three methods.

TABLE 6.2 Comparison between cost and equity methods and fair value through profit or loss (FVTPL)

Dimensions	Cost method	Equity method	FVTPL
Income recognition	Dividend income – approximates cash basis for income recognition, emphasizing reliability, and realized income	Share of profits approximates the accrual basis of income recognition, emphasizing the predictive value of information of unrealized gains	Dividend income and change in fair value providing timely information and emphasizing relevance over reliability
Asset measurement	Initial cost, less impairment losses	Initial cost and share of post-acquisition profit and other changes in equity	Fair value
Profit on sale	Large terminal profit on final realization	Smaller terminal profit as profits are recognized systematically over holding period, leaving a smaller terminal profit on sale	Zero terminal profit
Nature of the economic relationship between investor and investee	No economic relationship between investor and investee. Investor is deemed a passive holder of investments.	Economic interdependence between investor and associate – the economic entity comprises the investor and the associate through a relationship that is built upon significant influence	No economic relationship between investor and investee. The investment may be held for trading or qualifies for fair value measurement.

EQUITY METHOD VERSUS CONSOLIDATION

Rationale for Differences in Presentation

In the *consolidated financial statements* presented for the group as a single economic entity, the equity method must be applied to present the results and net assets of an associate. However, the investor need not apply the equity method when an investment is classified as held for sale in accordance with IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*.[5] Although the definition of a "group" excludes an associate (a group comprises a parent and its subsidiaries), a consolidated statement of financial position must measure the investment in an associate to capture the change in net assets of the associate. Similarly, the consolidated income statement must recognize the investor's share of the net profit of the associate.

Hence, the equity method measures the results of associates in a manner that effectively captures the substance of consolidation but not the form thereof. Unlike consolidation, the equity method does not combine the individual line items (for example, revenues and cost of sales) of the investor and the associate to arrive at consolidated totals for

each income statement or statement of financial position. Instead, the equity method recognizes the results of the associate through compressed single line items, "share of profit of associate" and "investment in associate."

Hence, the substance of consolidation is achieved through compressing the income statement items of an associate in these single measures. Instead of showing the profit item on a line-by-line basis and non-controlling interests as a deduction, the equity method shows a net figure that reflects only the investor's share in the profit of the associate. Similarly, the statement of financial position items are not consolidated, but the change in net assets of an associate is recognized in the investment in associate account. Effectively, consolidation and the equity method achieve the same group retained earnings and net assets.[6] However, the level of detail and information on revenues, expenses, assets, and liabilities are considerably lesser under the equity method because there is no aggregation of assets, liabilities, expenses, and revenues of the associate with the investor's.

Since the decision rights implicit in "significant influence" are not as strong as when "control" exists, the integration and interdependencies between investor and associate are likely to be less so than in parent-subsidiary relationships. Hence, it may be potentially misleading to show the revenues, expenses, and assets and liabilities of the investor and the associate as a single economic entity when the relationship is more distant. The equity method provides an accounting basis whereby changes in net assets of the associate are recognized in a timely manner but without the line-by-line aggregation of individual assets and liabilities of consolidation.

Financial Statement Differences between Consolidation and the Equity Method

Table 6.3 summarizes the differences between consolidation and the equity method. Essentially, the primary difference lies in the presentation and aggregation of information. The equity method "reveals" less in that an investor's share of the associate's profit and net assets is compressed into single line items.

TABLE 6.3 Comparison between consolidation and the equity method

Dimensions	Consolidation	Equity method
Income recognition	Each line item in the subsidiary's income statement is added in full to the parent's income statement. Hence, the consolidated income statement shows combined revenues and expenses of the parent and subsidiaries.	Share of profit is reported as a single line item in the consolidated income statement. Disaggregated information relating to revenues and expenses of associates are not included in the consolidated income statement.
Non-controlling interests	Since the revenues and expenses of subsidiaries are added in full to the parent's, non-controlling interests' share of profit after tax for the year is shown as an allocation of consolidated profit after tax	Equity accounting takes into account only the investor's share of profit. Hence, a separate line item for non-controlling interests is not necessary.
Asset measurement	Investments in subsidiaries are eliminated on consolidation. The investment account is substituted with line-by-line addition of the net assets of the subsidiaries, goodwill and fair value adjustments	Investments in associates are carried at initial cost plus share of post-acquisition profits and other changes in equity. The investor's share of the book value of the net assets of the associates is included in the investment account, together with share of fair value adjustments and the implicit goodwill. Through a single line item, the investment account shows the investor's

		interest in the associates' net assets at year-end.	
Goodwill on consolidation	Unimpaired goodwill is shown separately as an asset on the consolidated statement of financial position	Unimpaired goodwill is implicit in the investment in associate account	
Unamortized balance of fair value adjustments of identifiable net assets	Adjustments are made to the specific assets or liabilities on the consolidated statement of financial position	Unamortized balance of fair value adjustments of identifiable net assets is implicit in the investment in associate account	
Profit on sale of the investment	Profit on sale = Sales proceeds – Initial cost + Share of post-acquisition change in equity	Profit on sale = Sales proceeds – Initial cost + Share of post-acquisition change in equity	page 334
Economic relationship between investor and investee	Economic integration between investor and investee based on "control" by investor	Relatively lesser degree of economic integration between investor and investee based on "significant influence" by investor	
Impact on financial ratios	Because of the line-by-line summation, certain reported items (for example, sales or total liabilities) are larger under consolidation. Ratios such as the net profit margin and the debt-equity ratio are likely to be different under consolidation vis-a-vis the equity method.	As the equity method does not entail the aggregation of line items of an associate, certain ratios (for example, debt-equity ratio) may appear more favorable under the equity method	

AN OVERVIEW OF THE METHODOLOGY OF EQUITY ACCOUNTING

The equity method embodies the following accounting procedures. These are illustrated and elaborated in subsequent sections.

1. Investment is initially recorded at cost.
2. The initial investment at cost comprises three elements:
   (a) Investor's *share of the book value* or carrying amounts of the net assets of the associate as reported in its legal entity financial statements;
   (b) Investor's *share of the fair value adjustments* of identifiable net assets of the associate;
   (c) *Goodwill.*
3. Hence, goodwill that is implicit in the cost of investment is written off when impaired. How-ever, the test of impairment is performed for the investment as a whole and not separately for goodwill.
4. *Any fair value adjustment* included in the cost of the investment is amortized or expensed off, and the amortization charges are adjusted against the investor's share of profit/(loss) in the period when the amortization takes place.
5. The investor's share of *past and current amortization of any fair value adjustment* is adjusted against the investment in the associate and opening retained earnings and share of profit.
6. The initial investment is adjusted thereafter for the *post-acquisition change in the investor's share of net assets* of the investee.

7. Post-acquisition change in the investor's share of net assets includes recognizing the *share of the profit/(loss)* of the investee in each reporting period between initial recognition and disposal date.
8. *Share of current profit of the associate* will be adjusted for the unrealized effects of asset transfers between investor and associate. Essentially: page 335
   (a) Unrealized profit at the end of a reporting period will result in a downward adjustment to share of current profit; and
   (b) Realized profit in current period relating to a transfer from a previous period will result in an upward adjustment to share of current profit.
9. *Distributions* (for example, dividends) reduce the carrying value of investments and are deemed as a repayment of profits. Dividends are not a basis for recognizing income. Since the share of profit of the associate is recognized in profit or loss of the investor, dividends should not be recognized as profit as well. Instead, dividends are credited to the investment in associate account as a realization of the capitalized profit.
10. *Other changes in equity* (for example, increase in revaluation reserves) are also recognized proportionately in accordance with the investor's interest. Share of current revaluation reserves are recognized in the statement of profit or loss and other comprehensive income.

To help form a mental model of the equity method, the investment in associate account below shows the constituent elements:

Investment in Associates (Group SFP)

Initial cost*	
+ Share of post-acquisition profits to beginning of current period	– Past impairment of investment
	–/+ Past amortization of fair value adjustments
	– Share of unrealized profit included in opening retained earnings of either the investor or associate
+ Share of profit of current period	– Dividends
+/– Share of adjustments of realized profit/(loss) from upstream and downstream sales in previous period	– Current impairment of investment
	–/+ Share of current amortization of fair value adjustments
+/– Share of other changes in equity	–/+ Share of adjustments of unrealized profit/(loss) from upstream and downstream sales in current period

**Initial cost = Share of book value of net assets (or equity) of associate at initial recognition + Share of excess of fair value over book value of identifiable net assets at initial recognition + Goodwill*

page 336

PERFORMING AN ANALYTICAL CHECK ON THE INVESTMENT IN ASSOCIATE BALANCE

As we have seen, investment in associate includes three components:

1. Share of book value of net assets;
2. Share of fair value adjustments; and
3. Goodwill.

You would recall that these three components also feature in our analysis of non-controlling interests (when the acquirer measures non-controlling interests at fair value). Interestingly, when non-controlling interests have significant influence in an investee, the investment balance on the non-controlling interests' statement of financial position would include these three components as well.

Subsequent to initial recognition, each item in the investment in associate account increases or decreases one of the three components. Table 6.4 illustrates this point by decomposing the investment in associate into the three components:

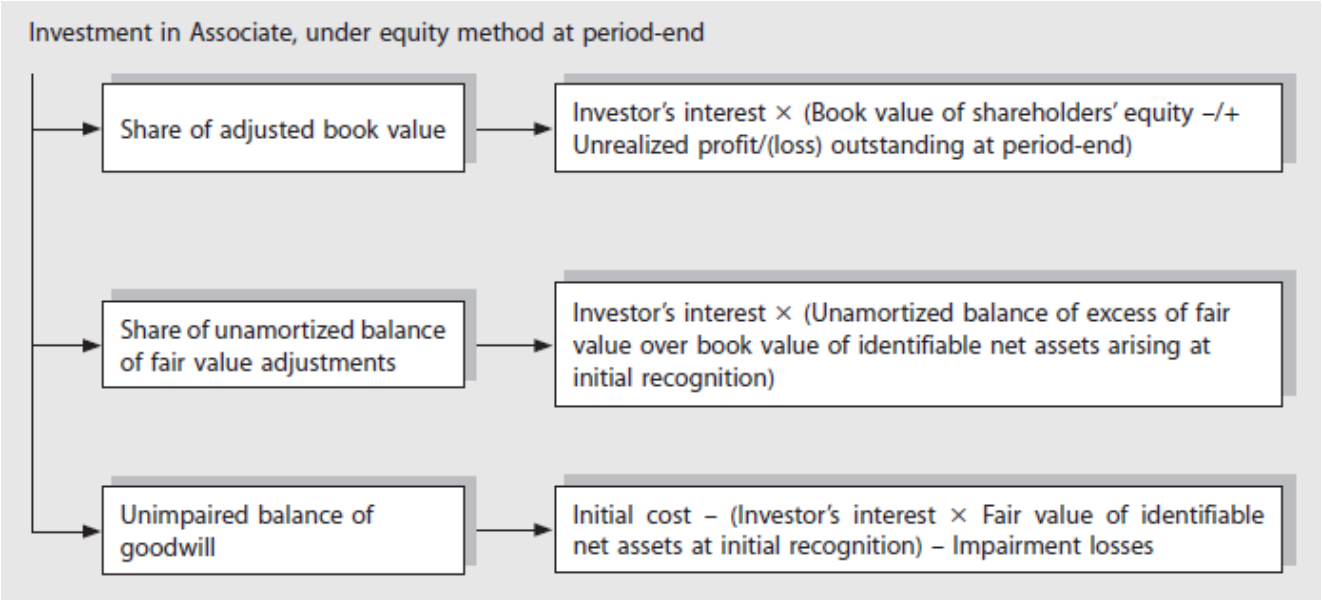
TABLE 6.4 Components of Investment in Associate

Period	Components of the Investment in Associate under the equity method		
At initial recognition	Share of book value of net assets or equity of associate at initial recognition	Share of fair value adjustments of identifiable net assets at initial recognition	Goodwill
From initial recognition to beginning of current period	+/− Share of post-acquisition profit/(loss) −/+ Share of adjustments of unrealized profit/(loss) in beginning retained earnings	−/+ Share of past amortization of fair value adjustments of identifiable net assets	− Past impairment of implicit goodwill
Current period	+/− Share of profit/(loss) after tax −/+ Share of adjustments of unrealized profit/(loss) from upstream and downstream sales in current period +/− Share of adjustments of realized profit/(loss) in current period in respect of previous period's upstream and downstream sales − Dividends +/− Share of other changes in equity	−/+ Share of current amortization of fair value adjustments of identifiable net assets	− Current impairment of goodwill[7]
Investment balance at end of current period	= Share of book value of net assets or equity of associate −/+ share of unrealized profit or loss at period-end = Share of *adjusted* book value of net assets or equity of associate at period-end	= Share of unamortized balance of fair value adjustments of identifiable net assets at period-end	= Unimpaired balance of goodwill at period-end

Hence, if we wish to check the period-end balance in the investment in associate, we can perform an analytical check by ascertaining the balance in these three components at the end of the year as shown in Figure 6.4.

Illustration 6.1 shows how the analytical check may be carried out.

FIGURE 6.4 Components of an analytical check on Investment in Associate

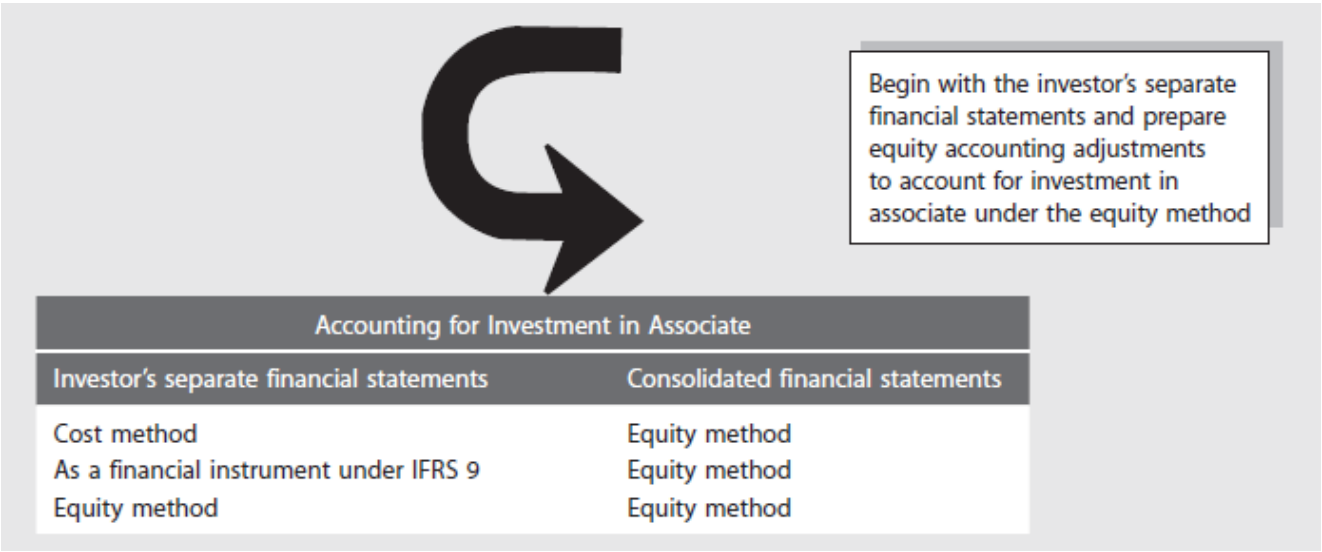


SPECIFIC PROCEDURES RELATING TO THE EQUITY METHOD

Conversion from the Cost Method to the Equity Method

Since we have to apply the equity method in the consolidated financial statements but the investment is normally carried at cost in the investor's separate financial statements, we have to make adjustments to the investment balance. The entries that we pass to effect the conversion to the equity method are known as "equity accounting entries." Adjustments are necessary to bring the basis of accounting from the cost method (or fair value) to the equity method (refer to Figure 6.5).

FIGURE 6.5 Conversion to the equity method



Accounting for Investment in Associate	
Investor's separate financial statements	Consolidated financial statements
Cost method	Equity method
As a financial instrument under IFRS 9	Equity method
Equity method	Equity method

In our illustrations, we assume that the investor carries the investment at cost. If the investment is carried at fair value under IFRS 9, additional equity accounting entries are required to strip off the fair value elements and bring the investment to its cost balance. If the investor uses the equity method to account for the investment in associate in the separate financial statements as permitted by IAS 27, no adjustments will be required to the consolidated financial statements.

IAS 28 paragraph 26 reinforces the underlying principle that the equity method results in the same substantive effects as consolidation:

> Many of the procedures that are appropriate for the application of the equity method are similar to the consolidation procedures described in IFRS 10. Furthermore, the concepts underlying the procedures used in accounting for the acquisition of a subsidiary are also adopted in accounting for the acquisition of an investment in an associate or joint venture.

Let us first consider some of the consolidation procedures that are not applicable to the equity method:

1. Because the equity method does not require line-by-line aggregation of financial statement items, the *elimination of balances* and *transactions between investor and associate are not required*.
2. *Investment in associate is not eliminated*. Instead, the investment captures multiple elements including implicit goodwill, changes in post-acquisition retained earnings of the associate, and the realization of earnings through dividends.

The consolidation procedures that apply to the equity method are discussed below.

Amortization of Fair Value Adjustments of Identifiable Net Assets

The investor must recognize *amortization of the undervaluation or overvaluation of identifiable assets and liabilities* that are included in the investment account. IAS 28 paragraph 32 requires appropriate adjustments to be made to the investor's share of the associate's profits or losses after acquisition to account for amortization of the associate's assets based on their fair values at initial recognition.

For example, I bought 20% of A's shares on 1 January 20x4 and had significant influence over A.

1. Initial investment in A was $6,000,000. I carries the investment at cost in its separate financial statements.
2. The excess of fair value over the carrying amount of a depreciable asset of A at 1 January 20x4 was $5,000,000. Depreciation was over a ten-year period.
3. Retained earnings of A on 1 January 20x4 was $15,000,000, while its retained earnings as at 1 January 20x5 was $20,000,000.
4. Net profit before tax of A for the current year ended 31 December 20x5 was $10,000,000 and its tax expense was $2,100,000 (there were some non-deductible items included in net profit).
5. Tax rate was 20%.

Dr Investment in associate	6,000,000	
Cr Cash		6,000,000

Initial investment in the associate

Explanatory note:

This entry is recorded in I's separate financial statements. The investment in associate is not eliminated and is included as an asset in the consolidated financial statements.

Dr Investment in associate	1,000,000	
Cr Opening retained earnings		1,000,000
Share of change in retained earnings from acquisition date to beginning of current period		

Retained earnings as at 1 January 20x5	$20,000,000
Retained earnings as at acquisition date	15,000,000
Change in retained earnings from acquisition date	$ 5,000,000
Share of A's post-acquisition retained earnings	$ 1,000,000

Explanatory note:

This entry re-enacts past equity accounting entries to arrive at the balance in the investment account under the equity method as at the end of the previous reporting year. By debiting the investment account and crediting retained earnings, this entry "capitalizes" the share of past profits in the investment account. The change in retained earnings captures the composite and cumulative effects of post-acquisition profits in past periods and the reducing effects of past post-acquisition dividend payments. This entry may be combined with the next entry on past depreciation of the undervalued fixed asset. Furthermore, if there are any unrealized profits in beginning retained earnings, an adjustment has to be made to the change in retained earnings.

Dr Opening retained earnings	100,000	
Cr Investment in associate		100,000
Share of past cumulative depreciation (20% × $5,000,000/10)		

Explanatory note:

Since equity accounting does not entail a line-by-line addition of assets and liabilities, any adjustment relating to an asset or liability of the associate is made against the investment in associate account. The investment account acts as a proxy for the "net assets" of the associate. In this example, the past cumulative depreciation relating to the undervalued fixed asset is debited to opening retained earnings to re-enact past entries relating to the depreciation. The credit entry is to the investment in associate to show that the net assets, which are represented by the investment in associate account, are reduced because of the cumulative depreciation effect. This entry may combine the tax effects of past amortization by applying the after-tax rate of 80% (refer to the composite entry below).

Dr Investment in associate	20,000	
Cr Opening retained earnings		20,000
Share of tax on past depreciation on undervalued fixed assets (20% × $100,000)		

Explanatory note:

Since past depreciation reduces past profits, tax expense in the past would also be reduced. The effect is to increase opening retained earnings and investment in associate. The reduction in tax expense enhances the investment in associate account. For simplicity, the tax adjustment entry can be combined with the depreciation entry to show the after-tax effect in the following composite entry.

page 340

Dr Opening retained earnings	80,000

Cr Investment in associate		80,000

Share of the after-tax effects of past depreciation on undervalued fixed assets (20% × 80% × $5,000,000/10)

Dr Investment in associate	1,500,000	
Cr Share of profit of associate		1,500,000

Share of current profit after tax of associate (20% × $7,500,000)

The adjusted net profit after tax is as follows:

Net profit after tax	$7,900,000
Less current excess depreciation after tax	(400,000)
Adjusted net profit after tax	$7,500,000

Explanatory note:

Equity accounting recognizes the share of profit or loss for the period together with the share of tax of the associate. The split between profit and taxes is conceptually purer as tax expense is shown as a separate line item in the income statement. Investment income, such as dividend and interest, is also shown on a pre-tax basis. However, the *Guidance on Implementing Presentation of Financial Statements* presents the share of profit of associates after tax and non-controlling interests in the associates as a single line item. The *Guidance* is not a part of IAS 1 *Presentation of Financial Statements*, but in practice, most companies follow this presentation. In our illustrations and problems, we will present share of profit on an after-tax basis. Net profit after tax of the associate has to be adjusted for any amortization of fair value adjustments relating to the current period.

Goodwill Impairment

Since goodwill is not separately recognized in the equity method, it is included in the investment balance. Any impairment in goodwill will be credited to the investment in associate account. Impairment tests are explained in IAS 28 paragraph 42. Since goodwill included in the carrying amount of an investment in an associate is not recognized as a stand-alone asset but is implicit in the investment account, it is not tested for impairment on its own. Specifically under IAS 28, after application of the equity method where losses of the associate, if any are recognized, the entire carrying value of the investment for associate is tested for impairment in accordance with the requirements of IAS 36 *Impairment of Assets* when there is an indicator of impairment of the investment under IAS 28, that is, the guidance in IAS 28 is applied to determine if there is any objective evidence of impairment. If there is, the principles in IAS 36 will provide guidance on the measurement and recognition of any impairment losses. In particular, an impairment loss is recognized when the carrying value of the investment exceeds its recoverable amount. page 341
However, paragraph 42 of IAS 28 clarifies that such impairment loss is not allocated to any asset, including goodwill, that forms part of the carrying value of the investment in associate. If subsequent analysis reveals that the recoverable amount has increased, a reversal of the impairment loss is recognized in accordance with IAS 36 *Impairment of Assets*. Similarly, the accounting for the reversal of impairment losses is symmetrical to the recognition of impairment losses in that the reversal will be recognized in the investment in associate account and not allocated to any component within the investment account. The investor compares the investment's recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount, whenever there is an indication that the investment may be impaired. Hence, impairment losses may be attributable to one of the three components: book value of net assets, fair value adjustments or goodwill.

For example, the past impairment of an investment in an associate was $250,000 and the current impairment is $100,000. The net profit before tax of the associate is $10,000,000 and the tax expense is $2,100,000. Ownership interest in the associate is 20%. The equity accounting entries are as follows:

Dr Opening retained earnings	250,000	
Cr Investment in associate		250,000

Past impairment loss

Explanatory note:

Since the investment in associate account includes goodwill at acquisition date, impairment losses are credited to the investment in associate account to write down the carrying amount of the investment account. This entry re-enacts past impairment losses. The impairment loss relates to the goodwill owned by the investor. Hence, there is no need to apply the ownership percentage to the impairment loss.

Dr Investment in associate	1,480,000	
Cr Share of profit of associate		1,480,000

Share of current profit after tax, after adjustment for current impairment loss

Share of profit after tax of associate	$1,580,000	(20% × $7,900,000)
Less current impairment loss	(100,000)	
Adjusted net profit after tax	$1,480,000	

Impairment loss relating to goodwill is assumed to be non-tax deductible

Explanatory note:

As with the past impairment loss, the current impairment relates wholly to the investor's share of the goodwill in the associate. There are no tax effects for reasons explained in Chapter 3.

As discussed above, for the purpose of goodwill impairment assessment, the recoverable amount of the investment in associate is the higher of the value-in-use and fair value less costs to sell under IAS 36. In determining the value-in-use of the investment, paragraph 42 of IAS 28 allows the investor to estimate either its share of the present value of the estimated future cash flows expected to be generated by the associate (which includes the cash flow from operations and the proceeds from the ultimate disposal of the investment) or the present value of the estimated future cash flows expected to arise from dividends to be received from the investment and its ultimate disposal. The IFRS Standard clarifies that using appropriate assumptions, both methods will provide the same results. The recoverable amount should be assessed for each associate individually unless the associate does not generate cash flows from continuing use that are largely independent on those from the other assets of the entity.

page 342

It should also be emphasized that goodwill impairment testing for associates differs from the goodwill impairment testing for subsidiaries on a few aspects. In the case of goodwill relating to subsidiaries, paragraph 10(b) of IAS 36 requires goodwill acquired in a business combination to be tested for impairment annually. In contrast, IAS 28 requires an investor to test for impairment for the investment in associate, which includes the goodwill in accordance with the requirements of IAS 36 when there is objective evidence of impairment on occurrence of a loss event such as significant financial difficulty or probable bankruptcy of the associate or joint venture (IAS 28 Paragraphs 41A to 41C). Further, if an impairment loss is recognized, paragraph 104 of IAS 36 requires the impairment loss to be allocated first to reduce the carrying amount of any goodwill arising on business combination allocated to the cash-generating unit (or group of units) before allocating the rest to reduce the carrying amount of the other assets of the cash generating unit (or group of units) pro rata on the basis of the carrying amount of each asset in the cash generating unit (group of units). IAS 28, on the other hand, requires the investor to recognize the impairment loss against the entire carrying amount of the investment of associate without allocation to any asset including goodwill

that forms the carrying value of the investment. Finally, paragraph 124 of IAS 36 prohibits the reversal of any impairment loss recognized for goodwill relating to subsidiaries in subsequent periods. Conversely, as goodwill that forms part of the carrying amount of the investment in associate is not separately recognized and any impairment losses previously recognized reduces the carrying value of the investment in associate directly, IAS 28 and IAS 36 require the reversal of the impairment to be recognized to the extent of subsequent increases in the recoverable amount of the investment in associate.

When the Investor Applies the Equity Method in its Separate Financial Statements

If an investor uses the equity method in its separate financial statements, there is no need to re-enact equity accounting adjustments. Effectively, the balance of investment in associate in the investor's books would be identical to the balance of investment in associate in the consolidated financial statements or investors' financial statements prepared in place of consolidated financial statements (where the investor has associates but not subsidiaries).

When the Investor Carries the Investment at Fair Value in its Separate Financial Statements

If an investor uses the fair value method in its separate financial statements under IFRS 9, the investor needs to strip off the fair value changes from the investment in associate balance. It then proceeds to recognize the same equity accounting entries that are passed when the cost method is used. IFRS 9 requires the investor to measure the investment in equity securities at fair value through profit or loss (FVTPL). However, the investor is permitted to elect to measure the investments at fair value through other comprehensive income (FVOCI). IFRS 9 is discussed in greater depth in Chapter 9. If an investment in associate is measured at FVTPL, changes in fair value in the current period are taken to income statement. Past periods' changes in fair value would thus be included in the opening retained earnings of the investor. If the investor elects to measure the investments at FVOCI, changes in fair value in the current period are taken to the statement of profit or loss and other comprehensive income. Past periods' changes in fair value would be included in accumulated other comprehensive income (for example, fair value adjustment reserve in equity).

page 343

Let's expand our earlier example as follows:

1. Initial investment in A as at 1 January 20x4 was $6,000,000.
2. Fair value as at the following reporting dates are as follows:

   31 December 20x4 $7,000,000

   31 December 20x5 $6,600,000

Assuming that the investor carries the investment at FVTPL, the entries passed in its books as a legal entity and the equity accounting entries passed for the economic entity would differ. Assume that the fair value changes have no tax consequences. Table 6.5 shows the accounting entries in the legal entity's books and the equity accounting adjustments.

TABLE 6.5 Investment in associate at fair value in separate financial statements

	Legal entity's books			Equity accounting adjustments		
1 January 20x4	Dr Investment	6,000,000		No adjustment		
	Cr Cash		6,000,000			
	Recognition of initial investment					
31 December 20x4	Dr Investment	1,000,000		Dr Fair value gain (I/S)	1,000,000	
	Cr Fair value gain (I/S)		1,000,000	Cr Investment		1,000,000
	Recognition of fair value gain			*Reversal of fair value gain*		
31 December 20x5	Dr Fair value loss (I/S)	400,000		Dr Investment	400,000	
	Cr Investment		400,000	Cr Fair value loss (I/S)		400,000
	Recognition of fair value loss			*Reversal of fair value loss*		
				Dr Opening retained earnings	1,000,000	
				Cr Investment		1,000,000
				Reversal of past period's fair value gain		

By stripping off the investment from the fair value changes, the equity accounting adjustments would bring the investment back to its original cost of $6,000,000. From this point, the usual equity accounting entries that apply to the investment carried at cost will apply to investments in associates carried at fair value. If the investment is carried at FVOCI, the adjustments would remove fair value changes taken to other comprehensive income.

Transfer of Assets between Investor and Associate

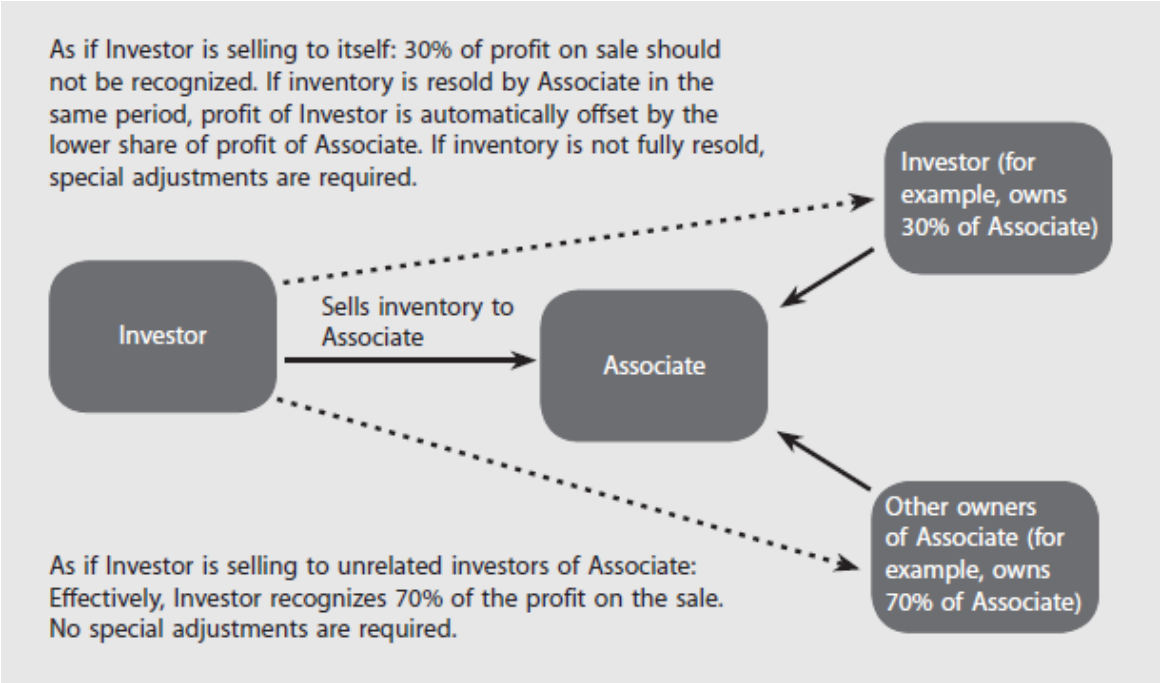
An investor's share in unrealized profit or loss from the transfer of assets to and from an associate must not be recognized in the share of profit from the associate. IAS 28 paragraph 28 states that:

> Gains and losses resulting from "upstream" and "downstream" transactions between an entity (including its consolidated subsidiaries) and its associate or joint venture are recognized in the entity's financial statements only to the extent of unrelated investors' interests in the associate or joint venture. "Upstream" transactions are, for example, sales of assets from an associate or a joint venture to the investor. "Downstream" transactions are, for example, sales or contributions of assets from the investor to its associate or a joint venture. The investor's share in the associate's or joint venture's gains and losses resulting from these transactions is eliminated.

In the equity method, the quantitative impact of adjustment for upstream and downstream sales is the same, unlike in consolidation where special considerations apply in the calculation of non-controlling interests' share of profit or loss. Non-controlling interests do not feature in the equity method as it requires the investor to recognize only its own share of profit and share of tax (which automatically excludes unrelated investors' share).

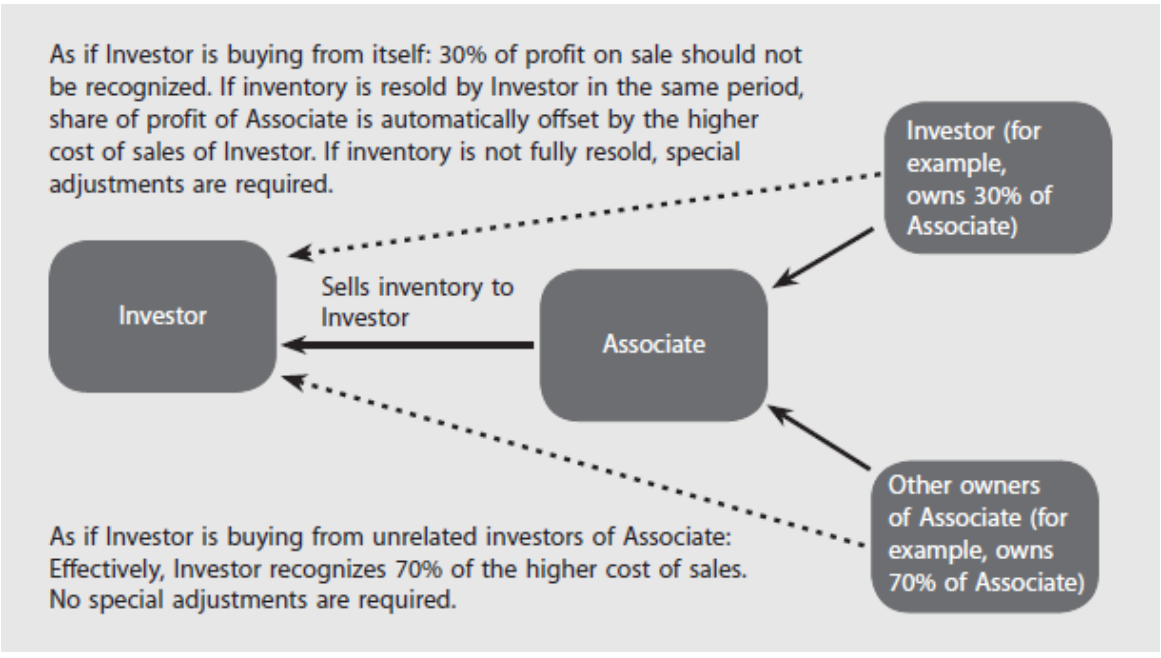
When an investor sells to its associate, it is as if the investor is selling partially to itself. Consider Figure 6.6, which illustrates the identity of the effective "purchaser" of an asset in a downstream transfer.

FIGURE 6.6 Downstream transfer



When an associate sells to its investor, it is as if the investor is buying partially from itself. Let us now consider the identity of the effective "seller" in an upstream transfer when an associate transfers an asset to its investor in Figure 6.7.

FIGURE 6.7 Upstream transfer



We can see from the diagrams that there is an "automatic" elimination of profit or cost of sales and share of profit of associates when the sale is realized through resale to third parties in the same period. However, when the sale is unrealized (that is, the asset remains in the books of either the investor or its associates), special adjustments must be effected to adjust the "unrealized profit." Special considerations for losses apply and are discussed later in the chapter.

IAS 28 does not prescribe the actual format for presenting the adjustments for unrealized profit on upstream and downstream transfers. Broadly speaking, there are two approaches to adjust the unrealized profit on a downstream or upstream transfer between an investor and an associate.

1. *Adjust the specific accounts affected.* For example, in an upstream sale, adjust equity accounted profit and the inventory of the investor; in a downstream sale, adjust the line items sales and cost of sales (COS) and investment in associate. When the profit is realized, adjust the specific line items that require correction. For example, in a subsequent year, when the transferred inventory is resold by the investor, the cost of sales of the investor should be adjusted together with equity accounted profit.
2. *Use the one-line adjustment approach to adjust the unrealized profit and the subsequent realization.* All adjustments are taken to the investment account and the share of profit for all transfers, whether upstream or downstream. Method 2 should be accompanied by footnote disclosures to explain the nature of the adjustments that affect the current share of profit of the associate.

In practice, there are many other variants that are a hybrid of Method 1 and Method 2. We apply Method 2 in our illustrations and problems, not only because it is simpler but it also better differentiates accounting for associates from accounting for subsidiaries. Transactions with associates are not eliminated by virtue of the fact that associates are not part of a "group." For example, if an investor makes a loan of $1,000,000 to its associate and earns interest income of $60,000 from the associate, the loan of $1,000,000 is not eliminated but left on the consolidated statement of financial position as a receivable. Likewise, the interest income is not eliminated on the consolidated income statement. However, by virtue of the offsetting effects through the share of profit, the investor effectively earns the unrelated investors' share of the interest income. If the ownership interest in the associate is 30% and if we ignore tax effects, the effects on the consolidated financial statements are as follows:

Consolidated income statement (extract)

Interest income	+ $60,000
Share of profit of associate	− $18,000
Net profit	+ $42,000

Consolidated statement of financial position (extract)

Investment in associate	−$18,000
Loan receivable from associate	+$1,000,000
Cash balances	−$1,000,000 + $60,000 = −$940,000
Net assets	$42,000
Retained earnings	+$42,000
Equity	+$42,000

This illustration shows that in a "downstream" transaction, the interest income is not eliminated, but shown in full. However, the associate recognizes the interest charged as an expense and consequently reports a profit that is lower by $60,000. The equity accounted profit will be lower by $18,000, that is, 30% × $60,000. The lower equity accounted profit partially offsets the interest income earned. The net effect on the consolidated retained earnings is to recognize up to 70% (unrelated investors' interests) of the interest income, that is, 70% × $60,000 or $42,000.

Similarly, the loan receivable from the associate is not eliminated on the consolidated statement of financial position. It is also wrong to proportionately eliminate the balance. Thus, there is a fundamental difference between the associate and the subsidiary. Effectively, the associate is akin to a "quasi-third party," whereby transactions and balances are not eliminated. However, the fundamental principle that IAS 28 upholds is that in substance, the investor should not recognize its own share of the profit on the transfer.

Method 2 is underpinned by the principle that the investor has a more distant relationship with the associate as compared with its relationship with the subsidiary. However, many practitioners may be uncomfortable with the distortions on the share of profit if a huge downstream adjustment is effected through the "one-line" equity accounted profit. In that respect, disclosure in the footnote is necessary to explain the components that are purely share of profit and reflective of the associate's performance and the components that are profit adjustments for transfers.

Consider the following example. An investor, I sells $200,000 worth of inventory to its associate A (A). The original cost of the inventory is $140,000. One-third of the inventory remains in A's warehouse at the end of the year. A's net profit before tax is $1,000,000, and its tax expense is $200,000. I has a 20% interest in A. Assume a tax rate of 20%.

A's net profit after tax	$800,000
Less after tax unrealized profit in the current year (80% × ⅓ × $60,000)	(16,000)
A's adjusted net profit after tax	$784,000
I's share of net profit at 20%	$156,800

Explanatory note:

The gross profit from the sale is $60,000 (sales price of $200,000 less original cost of $140,000). Since one-third of the inventory is unsold to third parties, I's share of the unrealized profit, that is, $4,000 (20% of 1/3 of $60,000), is not recognized. On an after-tax basis, this works out to be $3,200. Although I is not able to recognize its share of the unrealized profit, it recognizes 80% of the unrealized profit, that is, the portion that relates to the unrelated investor's share. Consider the overall effect on I's group financial statements:

page 347

	I's profit (at group level) (Adjusted)	I's profit (at group level) (Unadjusted)
Gross profit from downstream sale	$ 60,000	$ 60,000
Share of A's profit	156,800	160,000
Profit effect	$216,800	$220,000

I is not able to recognize $3,200 or its share of the unrealized profit. However, I is able to recognize 80% of the unrelated investor's share as if it had sold the inventory to unrelated investors of A.

The equity accounting entry is as follows:

Dr Investment in A	156,800	
Cr Share of profit of A		156,800

In the case of downstream sales, the unrealized profit resides in the retained earnings of the investor's books. However, from the economic entity's perspective, the investor's share of the unrealized profit is unearned. To eliminate the investor's share of the unrealized profit, one approach is to reduce the investor's share of the unrealized profit as shown in the illustration above. Although the investor's share of the unrealized profit does not reside in the associate's books, the adjustment is effected through the share of profit of the associate in line with the concept of equity accounting, as a compressed single-line consolidation reflecting all relevant adjustments.[8] Hence, unrealized

profit from both upstream (associate's sale to investor) and downstream[9] (investor's sale to associate) sales is adjusted from the associate's net profit.

Let us now consider the impact of the adjustment on unrealized profit on an upstream transfer. We adapt the situation in the previous example such that associate A sells inventory to investor I. All other information remains the same. The investor is the buyer and will recognize a higher cost of sales as a result of the profit element in the transfer. Since two third of the inventory is sold, the investor will recognize an increase in cost of sales of $40,000 (that is, 2/3 × $60,000). Share of A's profit will be reduced by the share of the unrealized profit. You will note that in substance, both downstream and upstream sales have the same profit reduction of $3,200 to group profits.

	I's profit (at group level) (Adjusted)	I's profit (at group level) (Unadjusted)
Increase in cost of sales from upstream sales . . .	($40,000)	($40,000)
Share of A's profit.	156,800	160,000
Profit effect.	$116,800	$120,000

The difference between the adjusted and unadjusted amount is $3,200, which is I's share of the unrealized profit on the upstream transfer

In this example, both upstream and downstream adjustments are effected through the share of profit and investment in associate accounts. We are using the one-line adjustment approach in Method 2. In subsequent periods when the remaining one third of the inventory is resold to third parties, the same principle applies whereby adjustments are made through the share of profit line.

If Method 1 is applied, the specific line items will be adjusted. For example, in the upstream sales adjustment, the share of profit of A will be reduced together with a concurrent adjustment to the inventory of I. When the inventory is resold to third parties in subsequent periods, the cost of sales of I will be adjusted downwards.

More complex transfers of assets that constitute a business between an investor and an associate are dealt with in Appendix 6A.

Treatment of Dividends

Dividend income and other distributions received are deemed as repayment of profits and credited to the investment in associate account. Income is recognized purely on the basis of net profit of the associate. However, the separate financial statements of the investor measures investment in associate on the cost basis or as a financial asset under IFRS 9, whereby dividend is recognized as an income item. Hence, dividend income has to be reclassified from the income statement (I/S) and taken to the statement of financial position to reduce the investment in associate account. If the investor uses the equity method to measure the investment in associate in the investor's separate financial statements, the dividend would be shown as a reduction of investment. There is no need to make any equity accounting adjustments as the legal entity's investment balance would be identical with the balance required for the economic entity reporting under IFRS 10 (where consolidated financial statements are prepared) or IAS 28 (where the investor has only associates).

For example, dividend income from an associate is $160,000. The equity accounting adjustment if the investment is carried at cost or fair value is as follows:

Dr Dividend income (I/S)	160,000	
Cr Investment in associate		160,000

The above entry is a reclassification and not an elimination entry. Essentially, income from asso-ciates can be recognized only in one form, either as share of profits or as dividends, but not both. Hence, dividend income is reclassified to the statement of financial position as a realization of the accrued profits.

If the investor opts to use the equity method in its separate financial statements, the investor would pass the following entry on receipt of dividend income in its books:

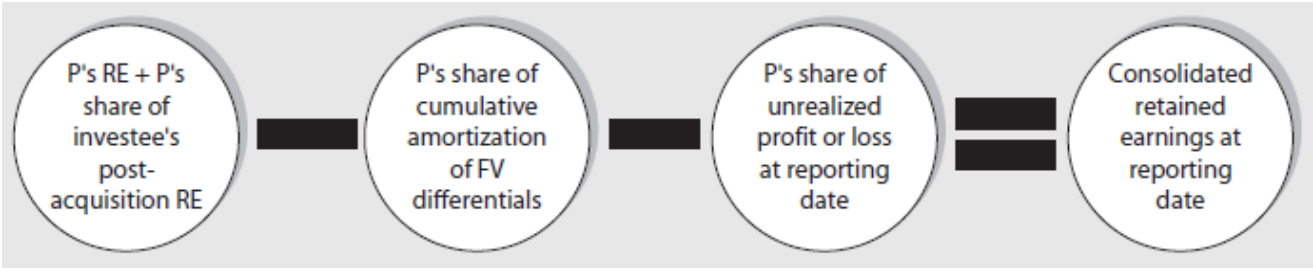
Dr Cash or Dividend receivable	160,000	
Cr Investment in associate		160,000

No further adjustment is required on consolidation if the investor uses the equity method in its separate financial statements. Unlike consolidation, equity accounting does not involve a line-by-line summation of an associate's financial statements. Hence, the dividends declared by the associate need not be eliminated.

PERFORMING AN ANALYTICAL CHECK OF CONSOLIDATED RETAINED EARNINGS WITH SUBSIDIARIES AND ASSOCIATES

Recall in Chapter 5 that we could determine the consolidated retained earnings analytically by considering the following three components. The analytical process can easily incorporate the impact of equity accounting on consolidated retained earnings. We reproduce Figure 5.3 here to show the three components.

FIGURE 6.8 Components of Consolidated Retained Earnings



When an investor has an associate, the analytical process is the same as for subsidiaries, except that there is no distinction for unrealized profit from upstream or downstream transfers. In accounting for subsidiaries, the parent would adjust for 100% of unrealized profits or losses from downstream transfers included in retained earnings but only its own share of unrealized profits or losses from upstream transfers. Non-controlling interests would have a share of adjustments from upstream transfers as well. However, in accounting for associates, the investor's interest is applied consistently to unrealized profits or losses from upstream or downstream transfers.

Illustration 6.1 explains the equity method in a specific example.

ILLUSTRATION 6.1 Equity accounting

P Co acquired a 40% interest in the ordinary shares of A Co on 1 January 20x2. P Co was deemed to have significant influence over A Co. P Co carried investment in A Co at cost in its separate financial statements. However, the

requirements of IAS 28 had to be complied with in the preparation of the financial statements of the economic entity where P Co's interests in the net assets of A Co were to be shown. The following information pertains to A Co at the date of acquisition and in the year ended 31 December 20x3. page 350

A Co
Statement of Financial Position
As at 1 January 20x2

	A Co Book value	A Co Fair value
Fixed assets	$250,000	$300,000
Inventory	150,000	150,000
Accounts receivable	120,000	120,000
Cash	45,000	45,000
Total assets	$565,000	$615,000
Accounts payable	$245,000	$245,000
Share capital	200,000	
Retained earnings	120,000	
Equity and liabilities	$565,000	$615,000

A Co
Income Statement
For the Year Ended 31 December 20x3

	P Co	A Co
Sales	$8,000,000	$1,500,000
Cost of sales	(5,500,000)	(900,000)
Gross profit	$2,500,000	$ 600,000
Operating expenses net of other income	(1,000,000)	(400,000)
Net profit before tax	$1,500,000	$ 200,000
Tax	(300,000)	(40,000)
Net profit after tax	$1,200,000	$ 160,000
Dividends declared	(200,000)	(100,000)
Net profit attributable to shareholders	$1,000,000	$ 60,000
Retained earnings, 1 January 20x3	2,500,000	180,000
Retained earnings, 31 December 20x3	$3,500,000	$ 240,000

page 351

A Co
Statement of Financial Position
As at 31 December 20x3

	P Co	A Co

Investment in A Co	$ 600,000	
Fixed assets	4,000,000	$400,000
Inventory	2,000,000	200,000
Accounts receivable	1,000,000	35,000
Cash	120,000	20,000
	$7,720,000	$655,000
Accounts payable	$1,220,000	$215,000
Share capital	3,000,000	200,000
Retained earnings	3,500,000	240,000
	$7,720,000	$655,000

Additional information:

(a) Remaining useful life of fixed assets at the date of acquisition was four years with zero residual value.

(b) The following sales of inventory were made during 20x2 and 20x3:

	20x2	20x3
Sales from A to P	$300,000	
Original cost	(240,000)	
Gross profit on transfer	$ 60,000	
Percentage unsold to third parties at year-end	60%	10%
Sales from P to A		$600,000
Original cost		(450,000)
Gross profit on transfer		$150,000
Percentage unsold to third parties at year-end		30%

(c) A Co transferred fixed assets to P Co on 1 July 20x2. Details are as follows:

Date of transfer	1 July 20x2
Original cost	$100,000
Accumulated depreciation	(20,000)
Net book value at transfer date	$ 80,000
Transfer price	$120,000
Remaining useful life at date of transfer	4 years
Residual value is zero	

(d) There were no changes in the share capital of A Co from the date of acquisition.

(e) Assume a tax rate of 20%. Recognize tax on fair value adjustments.

Required:

1. Prepare the equity accounting (EA) entries for the year ended 31 December 20x3.
2. Perform an analytical check on the Investment in A Co as at 31 December 20x3.
3. Show P Co's financial statements for the year ended 31 December 20x3 after incorporating the effects of equity accounting of A Co.

1. Equity accounting (EA) entries for the year ended 31 December 20x3

EA1: Recognize share of post-acquisition retained earnings of A

Dr Investment in A	24,000	
Cr Opening retained earnings .	24,000	

Retained earnings of A as at 1 January 20x3	$180,000	
Retained earnings of A as at date of acquisition	(120,000)	
Change in retained earnings	$ 60,000	
Share of A's change in retained earnings	$ 24,000	(40% × $60,000)

Explanatory note:

This entry re-enacts the cumulative effects of past equity accounting entries. The change in retained earnings from the date of acquisition to the beginning of the current period captures *cumulative post-acquisition profit* after taking into account dividends declared during the post-acquisition period. Since the separate financial statements carries the investment at cost, this entry is necessary to reinstate the equity accounted profits up to the end of the previous year.

EA2: Adjustment for unrealized profit in beginning fixed assets

Dr Opening retained earnings	12,800	
Cr Investment in A	12,800	

Profit arising from transfer of fixed assets	$40,000	($120,000 – $80,000)
Tax on unrealized profit	(8,000)	
Unrealized after-tax profit . . .	$32,000	
P's share of unrealized after-tax profit	$12,800	(40% × $32,000)

Explanatory note:

This entry is necessary to remove the share of unrealized profit at the beginning of the reporting period, so that the opening retained earnings of the combined entity is equal to the closing retained earnings from the previous period. Note that the adjustment is only for the investor's interest in the unrealized profit and is on an after-tax basis. Since equity accounting does not entail a line-by-line combination of specific assets and liabilities, the adjustment for the "overstated" fixed asset and the deferred tax asset are effected against investment in A. The investment account effectively represents P's share of the net assets of A. Since opening retained earnings reflect after-tax cumulative profits, the tax effects of adjustments to opening retained earnings can be netted off from the adjustments.

EA3: Adjustment for past after-tax depreciation on unrealized profit in fixed assets

Dr Investment in A	1,600		
Cr Opening retained earnings		1,600	
Past "over-depreciation" on overstated fixed assets		$5,000	(50% × $40,000/4)
Less tax on over-depreciation		(1,000)	
Correction of after-tax over-depreciation		$4,000	
P's share of correction of after-tax over-depreciation		$1,600	(40% × $4,000)

Explanatory note:

As with EA2, the correction of excessive depreciation is made against the investment in A. Opening retained earnings are credited with the adjustment as the depreciation charge was overstated. Past depreciation was for half a year from 1 July 20x2 to 31 December 20x2.

EA4: Adjustment for past after-tax depreciation on undervalued fixed assets

Dr Opening retained earnings	4,000		(80% × 40% × $50,000/4)
Cr Investment in A		4,000	

Explanatory note:

The initial investment in A reflects P's share of fair value of A's identifiable net assets and goodwill. The excess of the fair value over book value is implicitly included in the investment account. Since the excess relates to an identifiable asset, the excess has to be amortized as P had effectively "purchased" a share of fixed asset at fair value. Under equity accounting, there is no separate recognition of fixed assets and the investment in A reflects the net assets of A. Hence, the depreciation is credited to investment in A. Since the depreciation relates to past periods, the debit entry is made to opening retained earnings. The tax effect of past depreciation reduces the debit charge to opening retained earnings.

EA5: Adjustment for unrealized profit in beginning inventory

Dr Opening retained earnings	11,520		
Cr Investment in A		11,520	
Transfer price		$300,000	
Original cost		(240,000)	
Profit on transfer		$ 60,000	
Percentage unsold as at 31 December 20x2		60%	
Unrealized profit as at 31 December 20x2		$ 36,000	(60% × $60,000)
P's share of unrealized profit		14,400	(40% × $36,000)
After-tax effect		11,520	(80% × $14,400)

Explanatory note:

This entry re-enacts the adjustment for unrealized profit as at the end of the previous period.

EA6: Reclassify dividend income as a reduction of investment

Dr Dividend income	40,000		
Cr Investment in A		40,000	(40% × $100,000)

Explanatory note:

This entry is not an elimination entry but a "reclassification" entry. Under the cost method, P records the net dividend income in the separate income statement. (The same applies if P had adopted the fair value basis under IFRS 9.) However, from an equity accounting perspective, the investor's share of the associate's profit is recognized as income. Hence, dividends have to be removed from the income statement to avoid double counting of income and credited to the investment account as a realization of capitalized profits.

EA7: Recognize share of current profit after tax of A

Dr Investment in A	58,400	
Cr Share of profit of A		58,400

Explanatory note:

This entry is the income recognition entry under the equity method. Effectively, the investor is "capitalizing" profit by increasing the investment account when profits are made by the associate. Share of profit of A has to be adjusted for current depreciation on undervalued asset, the recognition of realized profit from previous year's upstream sales, and the removal of unrealized profit from the current year's downstream sales. All figures are on an after-tax basis. The share of profit of A is shown below:

Profit after tax of A	$160,000	
Less after-tax depreciation of undervalued fixed asset (fair value adjustment)	(10,000)	(80% × $50,000/4)
Add after-tax correction of current "over-depreciation" of fixed assets (upstream sale)	8,000	(80% × $40,000/4)
Add after-tax realization of profit in beginning inventory (upstream sale)	24,000	(80% × 50% × $60,000)
Less after-tax unrealized profit included in ending inventory (downstream sale)	(36,000)	(80% × 30% × $150,000)
Adjusted profit after tax of A	$146,000	
Share of adjusted profit of A	$ 58,400	(40% × $146,000)

2. Analytical check on Investment in A Co

First, determine the balance in the investment in A, under the equity method, by adding the effects of the equity accounting entries.

Investment in A, at cost	$600,000

EA1: Share of post-acquisition retained earnings	24,000
EA2: Adjustment for beginning profit (after-tax) on transferred fixed assets .	(12,800)
EA3: Adjustment for past "over-depreciation" (after-tax) on fixed assets	1,600
EA4: Adjustment for past depreciation (after-tax) of undervalued fixed assets	(4,000)
EA5: Adjustment for unrealized profit in (after-tax) beginning inventory	(11,520)
EA6: Dividends received	(40,000)
EA7: Share of current profit after tax	58,400
Investment in A as at 31 December 20x3	$615,680

Next, analyze the components of the investment in A. After applying equity accounting, the investment in A should comprise the following:

(1) Share of book value of shareholders' equity (or net assets) of A, after adjusting for outstanding unrealized profit or loss at the end of the year;

(2) Undepreciated or unamortized balance of fair value adjustment of identifiable net assets of A at the end of the year. The fair value adjustments relate to the difference between the fair and book value of identifiable net assets of A at the date of acquisition by P; and

(3) Balance of unimpaired goodwill that is included in investment in A at the end of the year.

These three familiar components that feature in the analytical check of non-controlling interests conversely apply to the investment in associate carried on the investor's consolidated statement of financial position.

We now show the results of an analytical check on the components of the investment in A as at 31 December 20x3.

Book value of shareholders' equity of A	$440,000	
Adjustment for outstanding unrealized after-tax profit from fixed asset transfer (upstream sale)	(20,000)	[80% × ($40,000 – $5,000 – $10,000)]
Adjustment for outstanding unrealized after-tax profit from inventory transfer (upstream sale)	(4,800)	(80% × 10% × $60,000)
Adjustment for outstanding unrealized after-tax profit (downstream sale)	(36,000)	(80% × 30% × $150,000)
Adjusted shareholders' equity of A . .	$ 379,200	
P's share of A's adjusted book value of equity (1)	$ 151,680	(40% × $379,200)
P's share of after-tax undepreciated balance of fair value adjustment of fixed assets (2)	$ 8,000	[40% × 80% × ($50,000 – $12,500 – $12,500)]
Implicit goodwill in investment in A:		
Initial investment	$ 600,000	
Less: Share of after-tax fair value of identifiable net assets of A at acquisition date	(144,000)	[40% × ($370,000 – $10,000) (Note 1)]

Goodwill implicit in investment in A (3)	$ 456,000
P's interest in A as at 31 December 20x3 (1) + (2) + (3)	$ 615,680

Note 1: Share of fair value of identifiable net assets of A at acquisition date

Book value of net assets of A at acquisition date	$320,000
Excess of fair value over book value of fixed assets	50,000
Fair value of net assets of A at acquisition date	$370,000
Deferred tax liability on excess of fair value over book value of fixed assets (20% × $50,000)	(10,000)
After-tax fair value of identifiable net assets of A	$360,000

Explanatory note:

The excess of fair value over book value of the fixed assets of A gives rise to future taxable income in the form of higher output of goods and services. Since the fair value of fixed assets is recognized at acquisition date, the deferred tax liability on the excess of fair value over book value should also be recognized under paragraph 19 of IAS 12 *Income Taxes*. Essentially, under IAS 12, the recognition of assets gives rise to a need to recognize the future tax payable arising from the realization of the assets.

3. P Co's financial statements for the year ended 31 December 20x3, after incorporating the effects of equity accounting of A Co

In this example, P Co has an investment in an associate but has no subsidiaries. The worksheet is prepared using the same format as a consolidation worksheet. The total debits and credits posted to the income statement are carried over to retained earnings in the statement of financial position. Investment in the associate is not eliminated, but is adjusted for share of profit and other equity accounting entries.

Income Statement and Partial Statement of Changes in Equity For Year Ended 31 December 20x3				
	P Co	Dr	Cr	P Co (with equity accounting)
Sales	$8,000,000			$8,000,000
Cost of sales	(5,500,000)			(5,500,000)
Gross profit	$2,500,000			$2,500,000
Operating expenses net of other income	(1,000,000)	$40,000		(1,040,000)
Share of profit of associate			$58,400	58,400
Net profit before tax	$1,500,000			$1,518,400
Tax	(300,000)			(300,000)
Net profit after tax	$1,200,000			$1,218,400
Dividends declared	(200,000)			(200,000)
Net profit attributable to shareholders	$1,000,000			$1,018,400
Retained earnings, 1 January 20x3	2,500,000	12,800	24,000	2,497,280
		4,000	1,600	
		11,520		
Retained earnings, 31 December 20x3	$3,500,000	$68,320	$84,000	$3,515,680

page 357

Statement of Financial Position As at 31 December 20x3				
	P Co	Dr	Cr	P Co (with equity accounting)
Investment in A Co	$ 600,000	$ 24,000	$ 12,800	$ 615,680
		1,600	4,000	
		58,400	11,520	
			40,000	
Fixed assets	4,000,000			4,000,000
Inventory	2,000,000			2,000,000
Accounts receivable	1,000,000			1,000,000
Cash	120,000			120,000
	$7,720,000	$ 84,000	$ 68,320	$7,735,680
Accounts payable	$1,220,000			$1,220,000
Share capital	3,000,000			3,000,000
Retained earnings	3,500,000	$ 68,320	$ 84,000	3,515,680
	$7,720,000	$ 68,320	$ 84,000	$7,735,680
Total adjustments		$152,320	$152,320	

Illustrations 6.2 and 6.3 are comprehensive problem sets incorporating consolidation and equity accounting.

ILLUSTRATION 6.2 Comprehensive problem

The income statements and summarized statements of financial position for P, S and A are presented below.

Income Statements
For Year Ended 31 December 20x4

	P	S	A
Operating profit	$1,375,000	$185,000	$365,625
Dividend income	77,500	0	0
Profit before tax	$1,452,500	$185,000	$365,625
Taxation	(275,000)	(37,000)	(73,125)
Profit after tax	$1,177,500	$148,000	$292,500
Dividends declared	(375,000)	(50,000)	(93,750)
Profit retained for the year	$ 802,500	$ 98,000	$198,750
Retained earnings, 1 January 20x4	1,806,875	652,000	363,750
Retained earnings, 31 December 20x4	$2,609,375	$750,000	$562,500

Statements of Financial Position
As at 31 December 20x4

	P	S	A
Investment in S, at cost	$1,250,000		
Investment in A, at cost	875,000		
Other net assets	2,984,375	$1,625,000	$1,875,000
Net assets	$5,109,375	$1,625,000	$1,875,000
Share capital	$1,875,000	$ 625,000	$ 937,500
Other reserves	625,000	250,000	375,000
Retained earnings	2,609,375	750,000	562,500
Shareholders' equity	$5,109,375	$1,625,000	$1,875,000

Additional information:

(a)

	S	A
Date of initial investment by P	1 July 20x1	1 January 20x3
Number of shares purchased by P	500,000	375,000
Number of total issued shares	625,000	937,500

Retained earnings at the date of purchase by P	$450,000	$375,000

There are no changes in the share capital and other reserves since the date of initial investment. The fair value of non-controlling interests of S at acquisition date is $312,500.

(b) At the date of acquisition, S owned (and still owns) certain unrecognized identifiable intangible assets. All other assets acquired were at fair values.

Fair value of unrecognized licenses and trademarks at acquisition date	$50,000
Impairment in fair value during the year ended 31 December 20x3	$18,750

Book values of identifiable net assets of A are close to their fair values at the date of acquisition.

(c) In 20x3, the group recognized a goodwill impairment loss in S of $79,000. No goodwill impairment loss arose with respect to the investment in A.

(d) Information on intercompany transactions between P and S is as follows:

Year	Produced by	Sold to	Cumulative percentage resold to third parties		Original cost	Sales price
			20x3	20x4		
20x3	S	P	40%	90%	$37,500	$50,000
20x4	P	S		70%	$62,500	$93,750

Tax on the profit from these sales had been recognized in the individual books.

(e) Tax rate was 20%. Tax effects of fair value adjustments should be recognized in the consolidated financial statements.

Required:

1. Assuming that P had "control" over S and "significant influence" over A, show the consolidation and equity accounting entries, and their related tax effects that must be passed by P in the 20x4 group financial statements.
2. Show the non-controlling interests' balance as at 31 December 20x4. Perform a reconciliation check on the balance in non-controlling interests.
3. Show the balance of investment in A as at 31 December 20x4. Perform an analytical check on the balance of investment in A.

1. Consolidation adjustments

CJE1: Elimination of investment in S

Dr Share capital	625,000
Dr Other reserves	250,000
Dr Retained earnings, 1 January	450,000
Dr Intangible asset	50,000

Dr Goodwill	197,500	
Cr Investment in S		1,250,000
Cr Deferred tax liability		10,000
Cr Non-controlling interests		312,500

Explanatory notes:

- Investment in S was eliminated against the shareholders' equity of S, which resulted in the recognition of the intangible asset and goodwill.
- $$\begin{aligned}\text{Goodwill} &= \underset{\text{transferred}}{\text{Consideration}} + \underset{\text{non-controlling interests}}{\text{Fair value of}} - \underset{\text{identifiable net assets of S}}{\text{Fair value of}} \\ &= \$1{,}250{,}000 + \$312{,}500 - \$1{,}365{,}000 \\ &= \$1{,}562{,}500 - \$1{,}365{,}000 \\ &= \$197{,}500\end{aligned}$$
- Goodwill attributable to:

$$\begin{aligned}\text{P} &= \$158{,}000\ (\$1{,}250{,}000 - 80\% \times \$1{,}365{,}000) \\ \text{Non-controlling interests} &= \$39{,}500\ (\$312{,}500 - 20\% \times \$1{,}365{,}000)\end{aligned}$$

- Fair value of identifiable net assets at acquisition date

$$\begin{aligned}&= \text{Book value of identifiable net assets of S} + \text{Fair value of unrecognized intangible asset} \\ &\quad - \text{Deferred tax liability on intangible asset} \\ &= (\text{Share capital} + \text{Other reserves} + \text{Retained earnings of S}) \\ &\quad + \text{Fair value of unrecognized intangible asset} - \text{Deferred tax liability on intangible asset} \\ &= (\$625{,}000 + \$250{,}000 + \$450{,}000) + \$50{,}000 - \$10{,}000 \\ &= \$1{,}325{,}000 + \$40{,}000 \\ &= \$1{,}365{,}000\end{aligned}$$

- The book value of identifiable net assets of S at acquisition date is the book value of equity as reported in S's legal entity financial statements. Components of equity at acquisition date comprise share capital and "pre-acquisition" reserves and retained earnings.
- As an intangible asset of $50,000 was recognized at acquisition date, a corresponding deferred tax liability of $10,000 should be recognized on the asset under IAS 12. The recognition of the intangible asset implies that a future taxable income of $50,000 is to be expected from the intangible asset. The future taxable income gives rise to future tax payable of $10,000. The future tax payable is called deferred tax liability. The recognition of the asset warrants the recognition of the deferred tax liability that arises from the asset.

page 360

- Non-controlling interests were recognized at fair value as at date of acquisition.

$$\begin{aligned}\text{Non-controlling interests \%} &= \frac{\text{Number of shares issued to non-controlling shareholders}}{\text{Total number of shares issued}} \\ &= \frac{125{,}000}{625{,}000} = 20\%\end{aligned}$$

CJE2: Impairment of goodwill in 20x3

Dr Retained earnings, 1 January	63,200	
Dr Non-controlling interests	15,800	
Cr Accumulated impairment		79,000

Explanatory note:

Impairment of goodwill was recorded in a prior period in the consolidated financial statements. This group expense must be re-enacted in each subsequent year to opening retained earnings in order to ensure consistency between the group's opening retained earnings and the previous year's closing retained earnings of the group. Impairment of goodwill has no tax effects (IAS 12:15a). Non-controlling interests have a share of goodwill impairment.[10]

CJE3: Impairment of identifiable intangible asset in 20x3

Dr Retained earnings, 1 January	15,000	
Dr Non-controlling interests	3,750	
Cr Accumulated impairment		18,750

Explanatory note:

Since non-controlling interests were set up at fair value at acquisition date, this group of shareholders must also bear a share of the amortization effects of the fair value adjustments. In this case, the identifiable intangible asset was impaired in a prior period. Thus, non-controlling interests were debited with 20% of the impairment loss of $18,750. The group's share of the impairment was debited to opening retained earnings.

CJE4: Tax effects of impairment of intangible asset during 20x3

Dr Deferred tax liability	3,750	
Cr Retained earnings, 1 January		3,000
Cr Non-controlling interests		750

Explanatory note:

The impairment of the intangible asset results in the concurrent extinguishment of the deferred tax liability. Since the carrying amount of the intangible asset is reduced, the related deferred tax liability or future tax payable arising from the intangible asset is similarly reduced. As the impairment relates to a past period, the profit and loss effects are reflected in opening retained earnings. Furthermore, as non-controlling interests have a share of the deferred tax liability in CJE1, these parties would also have a share of the extinguishment of the deferred tax liability.

CJE5: Elimination of dividends from S

Dr Dividend income	40,000	
Dr Non-controlling interests	10,000	
Cr Dividends declared		50,000

Explanatory note:

Dividends declared of S are eliminated against the dividend income of P and reduction of non-controlling interests.

CJE6: Adjustment of unrealized profit in beginning inventory (upstream sale)

Dr Retained earnings, 1 January	6,000	
Dr Non-controlling interests	1,500	
Cr Cost of sales		6,250
Cr Inventory		1,250

Unrealized profit at beginning of year

Original sales price	$50,000
Original cost	(37,500)
Gross profit on sales from S to P	$12,500
% not yet sold to third parties at end 20x3	60%
% not yet sold to third parties at end 20x4	10%

Explanatory note:

Sixty percent of the inventory was unsold at the end of the previous year. Opening retained earnings were debited with the group's share of unrealized profit (80% × 60% × $12,500). Likewise, non-controlling interests were debited with their share of the adjustment of unrealized profit at the start of the year (20% × 60% × $12,500). The credit entries reflect the subsequent events relating to the inventory. Ten percent of the original inventory transferred still remained unsold at the end of the current year. Hence, inventory had to be credited (reduced) by 10% of the original profit (10% × $12,500). Fifty percent of the original inventory transferred were sold during the current year. Hence, the cost of sales had to be "brought down" to its original cost. The adjustment was 50% × $12,500, or $6,250, to remove the marked-up element from the cost of sales.

CJE7: Adjustment of tax on unrealized profit at start of year (upstream sale)

Dr Tax expense	1,250	
Dr Deferred tax asset	250	
Cr Retained earnings, 1 January		1,200
Cr Non-controlling interests		300

Explanatory note:

CJE7 reflects the tax effects of CJE6. As with all tax adjustments, the direction of the entries is opposite to the income adjustments.

CJE8: Elimination of intercompany sales and adjustment of unrealized profit in current year (downstream sale)

Dr Sales	93,750	
Cr Cost of sales		84,375
Cr Inventory		9,375

Explanatory note:

The elimination of downstream sales is a composite entry of two individual entries. To conceptually understand the entry, consider the two individual entries (a) and (b) below.

CJE8(a): Elimination of "realized sales"

Dr Sales (P's I/S)	65,625	
Cr Cost of Sales (S's I/S)		65,625

Explanatory note:

Seventy percent of the inventory purchased from P by S were resold to third parties by S during 20x4. Hence, 70% of the sales by P to S (70% × $93,750) were matched exactly to the cost of selling this inventory in S's books. The cost of sales was the amount that was invoiced by P. The profit and loss effects cancelled each other perfectly. An elimination entry is still required to remove intragroup transactions from the line items in the income statement.

CJE8(b): Elimination of "unrealized sales"

Dr Sales (P's I/S) 30% × $93,750	28,125	
Cr Cost of sales (P's I/S) 30% × $62,500 .		18,750
Cr Inventory (S's SFP)		9,375

Explanatory note:

Thirty percent of the inventory purchased from P by S still remained in S's inventory as at 31 December 20x4. The profit element that is included in the carrying amount of the inventory is deemed "unrealized" from the group's perspective. Hence, an adjustment is required to adjust out the unrealized profit from S's inventory in the statement of financial position and to reverse out the sales and cost of sales as recorded by P in its income statement.

CJE9: Adjustment of tax on unrealized profit in current year from downstream sale

Dr Deferred tax asset	1,875	
Cr Tax expense		1,875

Explanatory note:

The tax adjustment in CJE9 relates to the tax effects of CJE8(b). There are no tax effects in CJE8(a) as the income effects cancel out through the elimination entry.

CJE10: Allocation of undistributed post-acquisition retained earnings to non-controlling interests

Dr Retained earnings, 1 January	40,400	
Cr Non-controlling interests		40,400

Retained earnings at 1 January 20x4	$652,000
Retained earnings at acquisition date	450,000
Change	$202,000
Non-controlling interests' share at 20% . . .	$ 40,400

Explanatory note:

Non-controlling interests' share of post-acquisition retained earnings reduce the group's retained earnings.

CJE11: Allocation of share of current after-tax profit to non-controlling interests

Dr Income to non-controlling interests	30,600	
Cr Non-controlling interests		30,600

Profit after tax of S	$148,000
Add realized profit from prior-year transfer	6,250
Less tax on realized profit	(1,250)
Adjusted profit after tax	$153,000
Non-controlling interests' share at 20%	$ 30,600

Explanatory note:

The resale of transferred inventory to third parties warrants the recognition of profit to the economic entity. Since CJE6 reduces non-controlling interests for the unrealized profit at the start of the year, CJE11 is required to allocate to non-controlling interests the proportion that is realized during the year. The journal entry for equity accounting is shown below.

EA1: Equity-accounted profit for the year		
Dr Investment in A	117,000	
Cr Share of A's profit after tax		117,000

Explanatory note:

A's profit after tax for 20x4 is $292,500. Since P has ownership interests of 40%, P recognizes 40% of $292,500 or $117,000 as share of profit. Applying the Illustrative Guidance in IAS 1 *Presentation of Financial Statements*, the profit is presented on an after-tax basis. However, companies may choose to present tax separately from income. P's ownership in A is 40% (375,000/937,500).

EA2: Dividend as a repayment of profits		
Dr Dividend income	37,500	
Cr Investment in A		37,500

Explanatory note:

P's separate income statement recognizes dividend income of $37,500 from A. Under the equity method, income is recognized in the form of share of profit (EA1). As such, dividend income is deemed as a repayment of profit and reduces the amount of capitalized profit in the investment account.

EA3: Allocation of post-acquisition retained earnings to beginning of period		
Dr Retained earnings, 1 January	4,500	
Cr Investment in A		4,500

Retained earnings at 1 January 20x4	$363,750
Retained earnings at acquisition date	(375,000)
Change	$(11,250)
P's share at 40%	$ (4,500)

Explanatory note:

EA3 recognizes P's share of change in post-acquisition retained earnings in opening retained earnings and investment in A. This entry is similar, but goes in the opposite direction to allocation of share of post-acquisition retained earnings to non-controlling interests. EA3 re-enacts the recognition of past equity accounted losses (in this example, retained earnings of A had declined after acquisition). If the associate had other comprehensive income (for example, revaluation reserves), the investor would also recognize share of change in post-acquisition other comprehensive income.

2. Non-controlling interests as at 31 December 20x4

Non-controlling interests as at acquisition date (CJE1)	$312,500
Share of past goodwill impairment (CJE2)	(15,800)
Share of prior-period impairment loss on intangible asset (CJE3)	(3,750)
Share of tax of prior-period impairment loss on intangible asset (CJE4)	750
Share of dividends declared (CJE5)	(10,000)
Share of adjustment of unrealized profit as at 1 January (CJE6)	(1,500)
Share of adjustment of tax on unrealized profit as at 1 January (CJE7)	300
Share of post-acquisition retained earnings as at 1 January (CJE10)	40,400
Share of current year's profit after tax (CJE11)	30,600
Non-controlling interests as at 31 December 20x4	$353,500

Reconciliation:

S's net assets as at 31 December 20x4	$1,625,000
Unrealized after-tax profit in inventory from upstream sale at 31 December 20x4 (10% × 80% × $12,500)	(1,000)
Unamortized after-tax balance of intangible asset 80% × ($50,000 – $18,750)	25,000
Adjusted S's net assets as at 31 December 20x4	$1,649,000
Non-controlling interests' share of adjusted S's net assets at 31 December 20x4	$329,800
Non-controlling interests' share of unimpaired goodwill ($39,500 – $15,800)	23,700
Non-controlling interests as at 31 December 20x4	$353,500

3. Analytical check on investment in associate balance as at 31 December 20x4

Initial investment			$875,000
EA1: Share of profit after tax			117,000
EA2: Dividends received			(37,500)
EA3: Share of post-acquisition retained earnings			(4,500)
Balance as at 31 December 20x4			$950,000
Analytical check:			
Share of book value of net assets of A as at 31 December 20x4			$750,000
Implicit goodwill included in investment in A:			
Cost of investment		$875.000	
Less share of fair value of net assets of A as at date of investment:			
Share capital	$ 937,500		
Other reserves	375,000		
Retained earnings	375,000		
Book value of net assets	$1,687,500		
Fair value adjustments	0		
Fair value of identifiable net assets	$1,687,500 × 40%	675,000	
Implicit goodwill included in investment in A			200,000
Investmet in A as at 31 December 20x4			$950,000

ILLUSTRATION 6.3 Comprehensive problem

P Ltd is an investor. As at 31 December 20x2, P Ltd held shares in three companies, as follows:

	SA Co	SB Co	A Co
Percentage shareholding held by P Ltd	80%	100%	30%
Date of acquisition	1 Jan 20x1	1 Jan 20x2	1 Jan 20x2
Purchase consideration paid by P Ltd for the shares	$5,000,000	$4,600,000	$1,800,000

Shareholders' equity of companies at date of acquisition:

Share capital	$2,000,000	$1,000,000	$3,000,000
Retained earnings	2,200,000	2,600,000	3,000,000
	$4,200,000	$3,600,000	$6,000,000
Fair value of non-controlling interests in SA Co as at date of acquisition			$1,250,000
Excess of fair value over book value of buildings of SB Co			$600,000

P Ltd has control of SA Co and SB Co but only significant influence over A Co. The book values of the identifiable net assets of SA Co and A Co were close to their fair values. Goodwill of SA Co attributable to both P Ltd

and non-controlling interests was impaired to the extent of $164,000 in 20x1.

The excess of purchase consideration of P Ltd's interest in shareholders' equity of the wholly owned SB Co at the acquisition date was attributable to an undervaluation of buildings of $600,000 with the remainder attributable to goodwill. Goodwill impairment was 10% of original goodwill in the first year of acquisition. The undervaluation of buildings was to be adjusted in the consolidated statement of financial position and depreciated on a straight line basis over a useful life of 20 years.

Sales of P Ltd during the year included intercompany sales to SA Co amounting to $300,000, which were priced at 25% above cost. The inventory of SA Co included unrealized profits of $30,000 as at 1 January 20x2 and $25,000 as at 31 December 20x2. Inventories were normally sold within one year of purchase. Tax rate was 20%. Deferred tax liability on fair value adjustments should be provided for.

The financial statements of P and the other companies for 20x2 are shown below.

Required:

1. Prepare the consolidation and equity accounting journal entries for the year ended 31 December 20x2.
2. Determine the following amounts and balances in the consolidated financial statements for 20x2:

   (a) Operating profit
   (b) Interest income
   (c) Interest expense
   (d) Fixed assets
   (e) Inventory
   (f) Non-controlling interests in SA Co
   (g) Investment in A Co
   (h) Retained earnings

Income Statement
For Year Ended 31 December 20x2

	P	SA Co	SB Co	A Co
Sales	$5,600,000	$3,500,000	$980,000	$2,500,000
Operating profit	$2,305,000	$ 666,250	$328,750	$ 876,000
Dividend income	280,000	0	0	0
Interest income from subsidiaries and associate	40,000	0	0	0
Interest expense to P	0	(20,000)	(15,000)	(5,000)
Interest expense – others	(77,000)	(60,000)	(25,000)	(3,000)
Profit before tax	$2,548,000	$ 586,250	$288,750	$ 868,000
Tax	(508,900)	(117,250)	(57,750)	(173,600)
Profit after tax	$2,039,100	$ 469,000	$231,000	$ 694,400

Extract from Statement of Changes in Equity (Retained Earnings)				
	P	SA Co	SB Co	A Co
Balance as at 1 January	$6,700,000	$4,000,000	$2,600,000	$3,000,000
Prior-period item		120,000		(40,000)
Profit for the year	2,039,100	469,000	231,000	694,400
Dividends	(500,000)	(210,000)	(70,000)	(140,000)
Balance as at 31 December	$8,239,100	$4,379,000	$2,761,000	$3,514,400

Statement of Financial Position As at 31 December 20x2				
	P	SA Co	SB Co	A Co
Share capital	$10,000,000	$2,000,000	$1,000,000	$3,000,000
Retained earnings	8,239,100	4,379,000	2,761,000	3,514,400
Shareholders' equity	$18,239,100	$6,379,000	$3,761,000	$6,514,400
Fixed assets	$5,900,000	$6,000,000	$3,500,000	$5,900,000
Investment in subsidiaries	9,600,000	0	0	0
Investment in associate	1,800,000	0	0	0
Loans to subsidiaries	850,000	0	0	0
Loan to associate	120,000	0	0	0
Current assets:				
Inventory	1,461,900	751,000	779,000	1,197,600
Accounts receivable	190,000	450,000	456,000	250,000
Dividends receivable from subsidiaries	70,000	0	0	0
Dividends receivable from associate	12,000	0	0	0
Cash and bank	39,100	1,000	5,000	10,000
	$ 1,773,000	$1,202,000	$1,240,000	$1,457,600
Current liabilities:				
Bank loans	565,000	105,750	171,250	389,600
Accounts payable	630,000	100,000	320,000	120,000
Dividends payable	100,000	50,000	30,000	40,000
Provision for taxes	308,900	67,250	27,750	93,600
	$ 1,603,900	$ 323,000	$ 549,000	$ 643,200
Net current assets	169,100	879,000	691,000	814,400
Deferred tax liabilities	(200,000)	(50,000)	(30,000)	(80,000)
Loans payable to P	0	(450,000)	(400,000)	(120,000)
Net assets	$18,239,100	$6,379,000	$3,761,000	$6,514,400

1. Consolidation and equity accounting entries

The journal entries to show elimination of investment in subsidiaries are shown below.

CJE1a: Elimination of investment and shareholders' equity in SA

Dr Share capital	2,000,000	
Dr Retained earnings	2,200,000	
Dr Goodwill	2,050,000	
Cr Investment in SA		5,000,000
Cr Non-controlling interests		1,250,000

$$\text{Goodwill of SA} = \left(\begin{array}{c}\text{Investment in SA by P}\\+\\\text{Fair value of non-controlling interests}\end{array}\right) - \begin{array}{c}\text{Fair value of identifiable net assets}\\\text{of SA at acquisition date}\end{array}$$

$$= (\$5{,}000{,}000 + \$1{,}250{,}000) - \$4{,}200{,}000$$
$$= \$6{,}250{,}000 - \$4{,}200{,}000$$
$$= \$2{,}050{,}000$$

CJE1b: Elimination of investment and shareholders' equity in SB

Dr Share capital	1,000,000	
Dr Retained earnings	2,600,000	
Dr Buildings	600,000	
Dr Goodwill	520,000	
Cr Investment in SB		4,600,000
Cr Deferred tax liability		120,000

$$\text{Goodwill of SB} = \begin{array}{c}\text{Investment}\\\text{in SB by P}\end{array} - \left(\begin{array}{c}\text{Fair value of identifiable net assets}\\\text{of SB at acquisition date}\end{array}\right)$$

$$= \$4{,}600{,}000 - (\$3{,}600{,}000 + \$600{,}000 - \$120{,}000)$$
$$= \$4{,}600{,}000 - \$4{,}080{,}000$$
$$= \$520{,}000$$

Next, we show the journal entries for impairment of goodwill and depreciation of undervalued building.

CJE2: Past cumulative impairment of goodwill in SA

Dr Opening retained earnings	131,200	
Dr Non-controlling interests	32,800	
Cr Accumulated impairment		164,000

CJE3: Current impairment of goodwill in SB

Dr Impairment of goodwill	52,000	
Cr Accumulated impairment		52,000

CJE4: Depreciation on undervalued buildings

Dr Depreciation	30,000	
Cr Accumulated depreciation		30,000

Depreciation on the undervaluation: $600,000/20 years

CJE5: Tax effects of depreciation on undervalued buildings

Dr Deferred tax liability	6,000	
Cr Tax expense		6,000

Tax on depreciation in CJE4: 20% × $30,000

The journal entries to show adjustment of unrealized profits from intragroup transactions are:

CJE6: Realization of profit in opening inventory (downstream sale)

Dr Opening retained earnings	30,000	
Cr Cost of sales		30,000

CJE7: Tax expense on realized profit in opening inventory (downstream sale)

Dr Tax expense	6,000	
Cr Opening retained earnings		6,000

CJE8: Unrealized profit in closing inventory (downstream sale)

Dr Sales	300,000	
Cr Cost of sales		275,000
Cr Inventory		25,000

CJE9: Tax expense on unrealized profit in closing inventory (downstream sale)

Dr Deferred tax asset	5,000	
Cr Tax expense		5,000

The journal entries for the elimination of intragroup transactions and balances are:

CJE10: Elimination of intragroup interest income and expense

Dr Interest income	35,000	
Cr Interest expense		35,000

CJE11: Elimination of intragroup loan balances

Dr Loans payable to P	850,000	

Cr Loans receivable from subsidiaries .		850,000

CJE12: Elimination of intragroup payables and receivables

Dr Dividends payable	70,000	
Cr Dividends receivable		70,000

CJE13: Elimination of dividend income and dividends declared

Dr Dividend income	238,000	
Dr Non-controlling interests	42,000	
Cr Dividends declared		280,000

The journal entries for non-controlling interests are:

CJE14: Allocation of post-acquisition profits to non-controlling interests

Dr Opening retained earnings	360,000	
Cr Non-controlling interests		360,000

Retained earnings at 1 January 20x2 .	$4,000,000
Retained earnings at acquisition date .	2,200,000
Change in retained earnings	$1,800,000
Non-controlling interests' share at 20%	$ 360,000

CJE15: Non-controlling interests' share of current profit after tax and prior-period items

Dr Income to non-controlling interests	93,800	
Dr Prior-period item (opening retained earnings)	24,000	
Cr Non-controlling interests		117,800

The non-controlling interests' deduction in the income statement relates to their share of profit for the year, excluding prior-period items. Prior-period items are adjustments to retained earnings for correction of errors or changes in accounting policies. Non-controlling interests' share of the prior-period items is debited directly to opening retained earnings because the prior-period deduction in the statement of retained earnings is a line item that is separate from profit after tax. Hence, non-controlling interests' share of prior-period item should not be included in the "normal" income allocation to non-controlling interests in the income statement.

Finally, we show the journal entries for equity accounting of associate:

EA1: Equity-accounted profits of associate

Dr Investment in associate	196,320	
Dr Share of associate's prior-period item* .	12,000	

Cr Share of associate's profit		208,320

* Adjustment to opening retained earnings

EA2: Reclassification of dividends as a repayment of profit

Dr Dividend income	42,000	
Cr Investment in associate		42,000

The investor recognizes a share of all changes in equity of the associate. In this illustration, the associate recognizes a prior-period adjustment to opening retained earnings. The investor equity accounts for a share of the prior-period adjustment. The same approach applies to other changes in equity such as other comprehensive income.

2. Consolidated financial statements

There are various ways to determine the amounts and balances as reported on the consolidated financial statements as at 31 December 20x2. Essentially, we can consider two ways. One is the straight-forward worksheet or listing approach, which is simply a compilation of the sum of the legal entity amounts and the consolidation adjustments. The other may be broadly described as the analytical approach, which derives the consolidated amounts and balances independently of the consolidation adjustments. However, when the calculations are less complex, the two approaches tend to be rather similar. However, in more complex items, such as non-controlling interests, the two approaches would be quite different and the analytical approach serves to be a more effective check on the worksheet approach.

(a) *Operating profit*

Worksheet approach:

P	$2,305,000
SA Co	666,250
SB Co	328,750
CJE3	(52,000)
CJE4	(30,000)
CJE6	30,000
CJE8	(25,000)
	$3,223,000

Analytical approach:

P	$2,305,000
SA Co	666,250
SB Co	328,750
Goodwill impairment in SB	(52,000)
Depreciation of undervalued fixed assets	(30,000)
Realized profit from 20x1 transfers	30,000
Unrealized profit from 20x2 transfers	(25,000)
	$3,223,000

(b) *Interest income from subsidiaries and associates*

Worksheet approach:

P	$40,000
SA Co	–
SB Co	–
CJE10	(35,000)
	$ 5,000

Analytical approach: Only interest income from third parties should be recognized.

Interest income from associate	$5,000

(c) *Interest expense*

page 372

Worksheet approach:

P	$ 77,000
SA Co	80,000
SB Co	40,000
CJE10	(35,000)
	$162,000

Analytical approach: Only interest expense to third parties should be recognized.

P Co	$ 77,000
SA Co	60,000
SB Co	25,000
	$162,000

(d) *Fixed assets*

Worksheet approach:

P	$ 5,900,000
SA Co	6,000,000
SB Co	3,500,000
CJE1b	600,000
CJE4	(30,000)
	$15,970,000

Analytical approach:

P	$ 5,900,000
SA Co	6,000,000

SB Co	3,500,000
Add balance of undervalued building	570,000
	$15,970,000

(e) *Inventory*

Worksheet approach:

P	$1,461,900
SA Co	751,000
SB Co	779,000
CJE8	(25,000)
	$2,966,900

Analytical approach:

P	$1,461,900
SA Co	751,000
SB Co	779,000
Unrealized profit in inventory at 31 Dec 20x2	(25,000)
	$2,966,900

(f) *Non-controlling interests in SA Co*

Worksheet approach:

CJE1a	$1,250,000
CJE2	(32,800)
CJE13	(42,000)
CJE14	360,000
CJE15	117,800
	$1,653,000

Analytical approach:

Book value of equity of SA Co	$6,379,000
Non-controlling interests' share of adjusted book value of equity	$1,275,800
Non-controlling interests' goodwill	
Fair value of non-controlling interests at acquisition date	1,250,000
Less non-controlling interests' share of fair value of identifiable net assets as at acquisition date	(840,000)
Goodwill	$ 410,000

Less impairment loss	(32,800)
Unimpaired goodwill attributable to non-controlling interests	$ 377,200
Non-controlling interests' balance	$1,653,000

(g) *Investment in Associate*

Worksheet approach:

Investment in associate, at cost	$1,800,000
EA1	196,320
EA2	(42,000)
	$1,954,320

Analytical approach:

Book value of equity of A Co	$6,514,400
P's share of book value of equity of A Co	$1,954,320
Investment in associate, at cost	1,800,000
Less share of fair value of identifiable net assets at investment date	(1,800,000)
Goodwill	–
Investment in associate	$1,954,320

(h) *Retained earnings*

Worksheet approach:

P	8,239,100
SA Co	4,379,000
SB Co	2,761,000
CJE1a	(2,200,000)
CJE1b	(2,600,000)
CJE2	(131,200)
CJE3	(52,000)
CJE4	(30,000)
CJE5	6,000
CJE8	(25,000)
CJE9	5,000
CJE13	42,000
CJE14	(360,000)
CJE15	(117,800)
EA1	196,320

EA2	(42,000)
	10,070,420

Analytical approach:

P	8,239,100	
P's share of SA Co's post-acquisition retained earnings	1,743,200	80% × (4,379,000 − 2,200,000)
P's share of SB Co's post-acquisition retained earnings	161,000	100% × (2,761,000 − 2,600,000)
P's share of A Co's post-acquisition retained earnings	154,320	30% × (3,514,000 − 3,000,000)
Less:		
P's share of goodwill impairment of SA Co	(131,200)	80% × 164,000
P's share of goodwill impairment of SB Co	(52,000)	100% × 10% × 520,000
P's share of after-tax depreciation of undervalued buildings of SB Co	(24,000)	100% × 80% × 600,000/20
Less:		
P's share of unrealized profit, after tax, of downstream transfer	(20,000)	100% × 80% × 25,000
	10,070,420	

SPECIAL ISSUES RELATING TO THE EQUITY METHOD

Transfers at a Loss

When an investor transfers an asset to the associate at a loss ("downstream transfer"), the investor has to evaluate whether the loss is impairment in nature. The newly revised IAS 28 clarifies that the impairment loss to be recognized in full by the investor. In other words, impairment loss should be recognized in full before inventory is released. For example, an investor sells inventory at fair value of $30,000 to its associate in which it has a 30% interest. The carrying amount of the inventory is $50,000. The investor should recognize $20,000 as loss in the income statement. There will not be any difference in treatment for realized or unrealized sales. In this scenario, assume that the associate sells 90% at fair value of $27,000 and holds the remaining 10% in inventory at $3,000. The net profit earned by the associate is zero. For simplicity, we assume that there is no assurance that the tax loss could be used to offset future income, and hence, we do not recognize the tax benefit on the loss. The consolidated income statement will show the following income items:

Revenue	$30,000
Cost of sales	(50,000)
Gross loss	($20,000)
Share of profit of associate	–
Net loss	($20,000)

The loss has to be recognized in full by the investor. However, if the associate sells inventory to investor ("upstream transfer") at fair value of $30,000 when the carrying amount is $50,000, the investor recognizes its share of the loss rather than the full loss of $20,000. Let us assume that the investor sells 90% at fair value of $27,000 and holds the remaining 10% in inventory at $3,000. The investor recognizes $6,000 or 30% of $20,000 as the share of loss of the investor. The fact that 10% of the inventory is unsold is not important as the loss is indicative of impairment of the inventory. The consolidated income statement will show the following income items:

Revenue	$27,000
Cost of sales	(27,000)
Gross loss	–
Share of loss of associate	($6,000)
Net loss	($6,000)

Applying the same principles in Chapter 5, if the loss is an "artificial" loss, we should adjust it out in the same manner as we do for unrealized profit. We would add back the artificial loss that is unrealized at the end of the year. In subsequent years, we should deduct the realized loss on the portion that is sold. Recall that a loss is artificial if the asset is not impaired but is transferred at an artificially low price. For example, the inventory may be transferred at $30,000 when its carrying amount is $40,000 and the fair value is $50,000. The inventory is not impaired and the loss on sale of $10,000 is artificial. The various situations of impairment and artificial loss that were analyzed in Chapter 5 apply to identifying the nature of the loss in transfers between an investor and its associate.

page 376

Can the Investment in an Associate be a Negative Balance?

When post-acquisition losses exceed the initial investment in an associate, the investor should stop equity accounting of further losses. In other words, the investment is carried at zero balance. An exception to the requirement arises when the investor has a constructive or legal obligation to make good the losses (IAS 28:39). In this matter, the accounting for investments in associates is different from accounting for non-controlling interests. Recall, in Chapter 5, non-controlling interests become a deficit balance when the post-acquisition losses exceed the initial amount of the non-controlling interests. However, the same does not apply to equity accounting.

Other Issues

The investor should also compare the reporting dates and accounting policies of its associates. If the reporting dates and/or accounting policies are not the same as the investor's, the investor has to make appropriate adjustments to the financial information of the associate before applying the equity method. Ultimately, the financial information of the associate must conform to the reporting date and accounting policies of the investor.

Occasionally, an associate may have outstanding cumulative preference shares that are held by other parties and these are classified as equity. In computing the share of profit of the associate, the investor should deduct the dividends on these shares from the profit, irrespective of whether the dividends have been declared or not (IAS 28:37).

ACCOUNTING FOR JOINT ARRANGEMENTS

This chapter thus far has explained and illustrated the principles and processes of the equity method. We also saw how the equity method applies to the accounting for investments in associates in the economic entity financial statements. An associate is an investee over which the investor has significant influence.

We now consider another type of investment in which the equity method applies. These investments are described as joint arrangements. A joint arrangement exists when two or more parties to the arrangement has joint control. In the introduction to this chapter, we explained what joint control is. Essentially, joint control is the contractual sharing of power among parties such that decisions about relevant activities require the unanimous consent of these parties. Hence, a joint arrangement has two characteristics: (a) the existence of a contractual arrangement and (b) the parties to the contract has joint control over the arrangement.

In this section, we go deeper into the nature of a joint arrangement and the accounting methods that apply. One of the methods, the equity method, is already explained in the earlier part of this chapter. IAS 28 not only deals with accounting for associates but also accounting for joint ventures. However, we will also discuss another accounting method that applies to joint operations.

IFRS 11 *Joint Arrangements* is the standard that governs the accounting for joint arrangements. IFRS 11 applies to financial periods beginning on or after 1 January 2013 and establishes accounting principles for financial reporting by parties to a joint arrangement. IFRS 11 supersedes IAS 31 *Interests in Joint Ventures* and SIC 13 *Jointly Controlled Entities — Non-Monetary Contributions by Venturers*.

page 377

By replacing IAS 31, IFRS 11 seeks to improve the accounting for joint arrangements in two ways. First, IFRS 11 removes the choice of accounting methods that IAS 31 permits. In the past, joint venture parties in a jointly controlled entity could choose either the proportionate consolidation or the equity method. In practice, the equity method was more popular because it reveals less and has a more favorable impact on leverage. Proportionate consolidation was the consolidation of pro-rated line items on the income statement and statement of financial position of the jointly controlled entity. Proportionate consolidation would increase the assets and liabilities of the joint venturer. As a consequence, ratios such as return on assets, debt to equity ratio and leverage ratios would be more negatively impacted.

Joint Ventures and Joint Operations

There are essentially two types of joint arrangements: joint operations and joint ventures. IFRS 11 defines the joint operation as a "joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangements. Those parties are called joint operators."[11] For example, a joint operator may contribute knowledge and expertise while another operator may contribute equipment. The first operator would have rights to the intellectual property of the joint arrangement while the second operator would have rights to property, plant, and equipment. The operators may also have different obligations depending on the contractual arrangements.

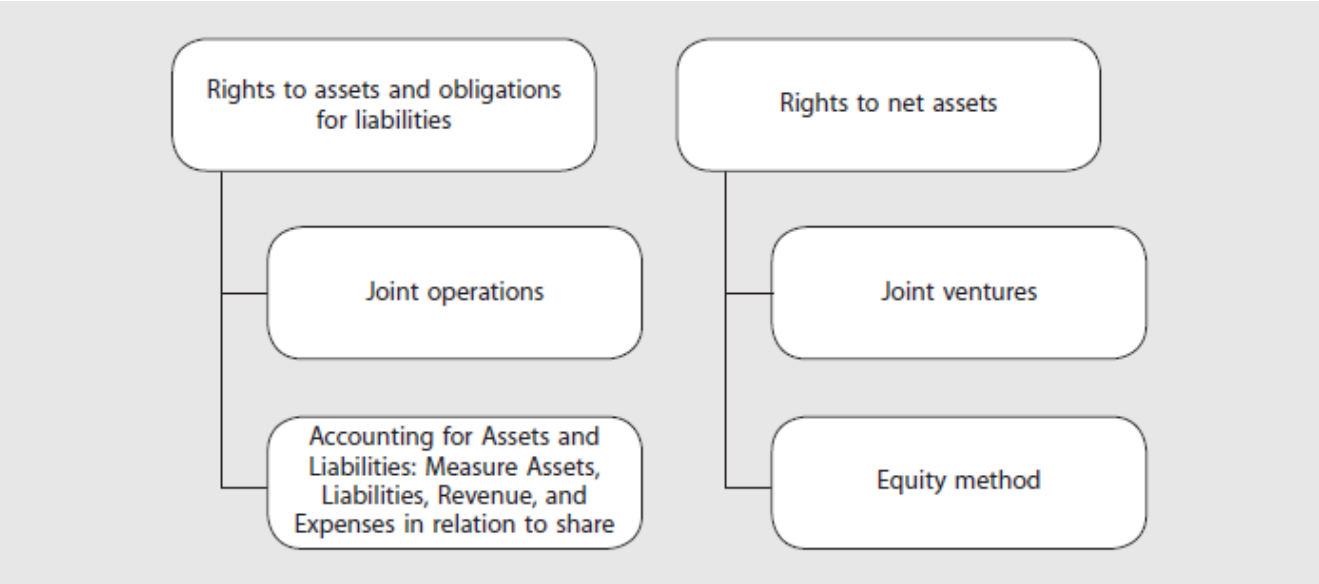
Joint operations need not be in a form of a separate vehicle such as a third entity. Project accounts are maintained for each joint operation. Each joint operator will have a share of revenues or share of output from the joint operation and bear own expenses and share of expenses in proportions that are agreed upon in the contractual arrangement. Each operator will also recognize own assets and own liabilities and share of assets and share of liabilities from the joint operation as specified in the agreement. Joint operators may provide guarantees in their own names to obtain loan financing. Each operator will contribute assets and/or expertise to the project and bear liabilities according to the contractual agreement.

Joint operations are fairly common in mining and extractive industries. Projects in these industries are highly capital intensive with substantial need for equipment, expertise, and financing. Joint operations provide resources from different joint operators to better manage the scale of operations and the risks that result from these projects.

The other joint arrangement is a joint venture. IFRS 11 defines a joint venture as an arrangement "whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Those parties are called joint venturers." Unlike a joint operation, a joint venture does not give rise to rights to specific assets and obligations for specific liabilities. All parties to a joint venture would have rights to the net assets or equity in the arrangement. For example, if two parties have a contractual arrangement to set up a company to develop a new drug, both parties will have rights to the net assets of the company. In many ways, this arrangement is similar to the relationship that an investor has with its associate. However, the difference between significant influence and joint control is the existence of a contractual arrangement in joint control. The sharing of power has to be determined by a contract.

It is important to identify the type of joint arrangement as the accounting methods differ for each. Figure 6.9 summarizes the approaches in IFRS 11.

FIGURE 6.9 Types of joint arrangements



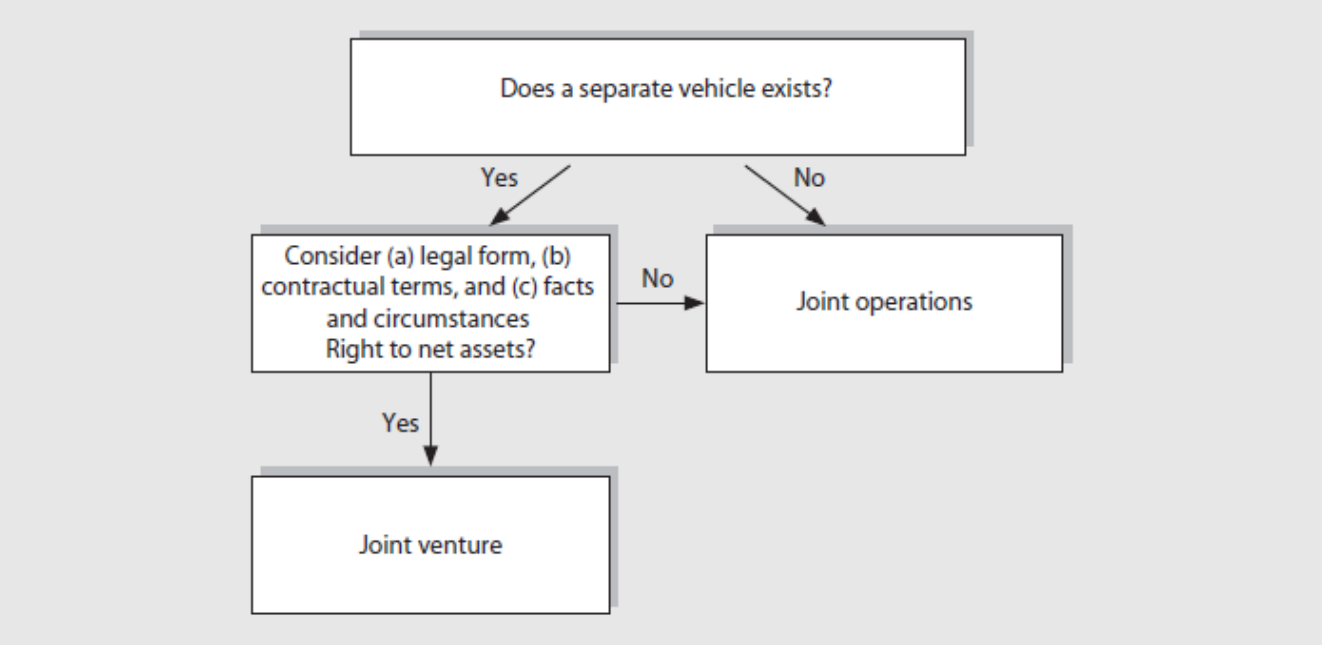
The determination of the type of joint arrangement often involves judgement. Parties to a joint arrangement must consider the facts and circumstances to determine whether the joint arrangement is effectively a joint operation or a joint venture. Very often, a joint arrangement is structured through a separate vehicle. The form of the vehicle may differ but it may well be a separate company. "A joint arrangement that is not structured through a separate vehicle is a joint operation."[12] In a joint operation, a contract determines each joint operator's rights to the assets and obligations for the liabilities of the joint arrangement, and each operator's rights to the revenues and obligations for expenses of the arrangement. In a joint venture, each joint venturer (owner) has rights to net assets of a joint arrangement (entity). Each joint venturer does not have rights to the assets or obligations to the liabilities of the joint arrangement. The separation of entity from its owners is a distinguishing feature in a joint venture. Hence, a joint venture requires the existence of a separate vehicle whose legal form confers it with rights and obligations that are separate from those of its owners (the joint venturers). However, IFRS 11 also explains that assets and liabilities held through a separate vehicle may be either a joint venture or a joint operation.[13]

The acid test is still with respect to whether each joint arrangement party has rights to net assets or rights to assets and obligations of the joint arrangement. In a joint operation, a separate vehicle, if any, would be of a legal form that allows the owners (the joint operators) to have rights to assets and obligations for the liabilities of the separate vehicle. The separate vehicle in a joint arrangement would typically not be an incorporated company or any other structure that is recognized as a legal person with rights and obligations that are separate from its owners.

In a nutshell, a joint venture is structured through a separate vehicle. However, the presence of a separate vehicle does not imply that the joint arrangement is a joint venture. The acid test has to be applied to determine the rights and obligations of each party to the joint arrangement. Figure 6.10 shows the decision flow.

page 379

FIGURE 6.10 Separate vehicles in joint arrangements



In some cases, a joint arrangement has to be inferred from the facts and circumstances. Unanimous consent implies that no one party in a contractual arrangement is able to make decisions about relevant activities unilaterally. Recall in Chapter 2 that relevant activities are those activities that have a significant impact on returns. Determination of relevant activities is context specific and one must evaluate the significance of each activity in relation to the returns of the joint arrangement. As with control, joint control is not the power to exercise protective rights. The rights must be substantive, albeit shared with other counterparties in unanimous decision making. In Chapter 2, we explained that protective rights are exercisable only in rare circumstances as defined by the contractual agreement (for example, a default of payment).

Unanimous consent need not always entail a 100% agreement from all parties to the contract. A contractual arrangement often stipulates the minimum required proportion of voting rights[14] required to determine a decision on relevant activities of another entity. For example, a shareholder agreement among three investors stipulates that the minimum vote required to approve the appointment of directors is 75%. In this example, unanimous consent is achieved by 75% votes. The appointment of directors is clearly an important decision that affects how relevant activities of the entity are managed. Consider the following independent scenarios. The following table shows the percentage of ownership interests held by each investor.

	Scenario 1	Scenario 2	Scenario 3
Investor A	40%	50%	35%
Investor B	40%	25%	30%
Investor C	20%	25%	5%
Other investors (<1% each)			30%
Total	100%	100%	100%

Scenario 1: A and B collectively, but not individually, are able to decide on the appointment of directors. C has no power to change the final decision. Hence, A and B have joint control over the entity.

Scenario 2: A does not have control as A needs the support of either B or C to achieve the minimum voting threshold. At the same time, there is more than one possible combination to achieve the 75% threshold. Without any further specification in the contract as to which combination prevails, the situation fails to meet the requirement for unanimous consent by specified investors.[15]

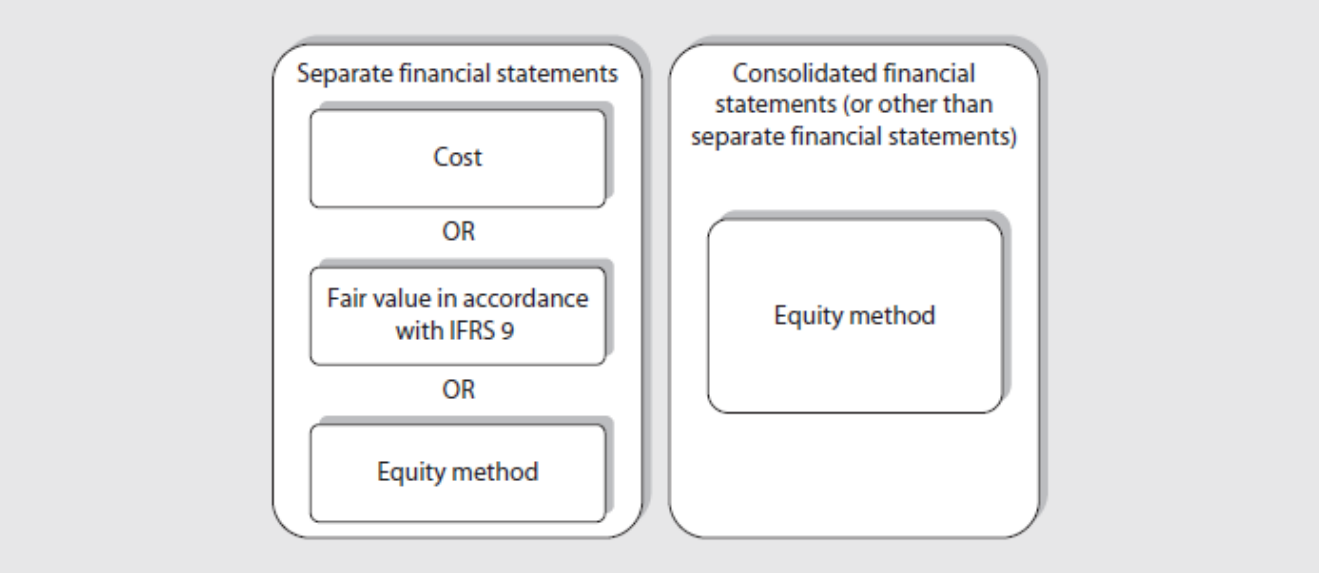
Scenario 3: It is uncertain as to how the other investors will vote. Unanimous consent from A and B is not necessarily the outcome in all situations. In such a situation, A and B have joint control only if the contractual arrangement requires agreement from A and B.[16]

When facts and circumstances change, the investor must re-evaluate the existence of joint control and the nature of the joint arrangement. Changes in ownership interests is an example of such a change and are further discussed in Appendix 7C.

Accounting for Joint Ventures

Joint venturers will account for joint ventures using the equity method in the consolidated financial statements. However, in the separate (legal entity) financial statements, the joint venturer will account for the investment in the joint venture at either cost or as a financial instrument under IFRS 9 or using the equity method. Hence, the accounting for joint ventures (see Figure 6.11) is the same as accounting for associates that we saw earlier in the chapter. The equity method explained earlier in this chapter applies to the accounting of joint ventures in the consolidated financial statements or the investor's financial statements other than separate financial statements. An example of accounting for joint ventures is shown in Illustration 6.4.

FIGURE 6.11 Accounting for joint ventures



Under IAS 27, a joint venturer has a choice of three measurement bases to account for the investment in joint ventures in its separate financial statements. However, the same accounting basis must apply to all joint venture investments. The measurement bases are the same as those, which apply to accounting for investments in subsidiaries and accounting for associates in the separate financial statements of the parent or investor. If a joint venturer chooses to apply the equity method in accounting for investments in joint ventures in the separate financial statements, the investment amount will be the same in both the separate and consolidated financial statements.

ILLUSTRATION 6.4 Accounting for joint arrangements

P Co and T Co acquired a 50% interest each in Z Co on 1 January 20x2. Z Co was incorporated in 20x0. P Co and T Co agreed on the contractual sharing of power to govern the activities of Z Co. P Co does not have rights to the assets of Z Co nor obligations to the liabilities of Z Co. By virtue of its rights to the net assets of Z Co, P Co is a joint venturer of Z Co and applies the equity method to account for its interests in Z Co. The financial statements of P Co and Z Co for the year ending 31 December 20x3 are shown below:

Income Statement and Statement of Changes in Equity (extract)
For Year Ended 31 December 20x3

	P Co	Z Co
Revenues	$12,000,000	$6,000,000
Expenses	(7,000,000)	(5,000,000)
Profit before tax	$ 5,000,000	$1,000,000
Tax	(1,000,000)	(200,000)
Profit after tax	$ 4,000,000	$ 800,000
Dividends declared	(300,000)	(50,000)
Profit retained	$ 3,700,000	$ 750,000
Retained earnings, 1 Jan 20X3	1,200,000	500,000
Retained earnings, 31 Dec 20X3	$ 4,900,000	$1,250,000

Statement of Financial Position
As at 31 December 20x3

	P Co	Z Co
Fixed assets, net book value	$3,500,000	$1,900,000
Other long-term assets	1,800,000	
Investment in Z Co, at cost	600,000	
Amount due from Z Co	60,000	
Inventory	800,000	300,000
Accounts receivable	520,000	400,000
Cash	100,000	20,000
	$7,380,000	$2,620,000
		page 382
Accounts payable	$ 390,000	$ 710,000
Other liabilities	90,000	
Amount due to P Co		60,000
Share capital	2,000,000	600,000
Retained earnings	4,900,000	1,250,000
	$7,380,000	$2,620,000

	Z Co
Date of investment in joint venture	1 Jan 20x2
Percentage acquired by P Co	50%
Shareholders' equity at date of investment:	
Share capital	$600,000
Retained earnings	200,000
	$800,000

The fair and book values of net assets at date of investment are as follows:

	Z Co	
	Book value	Fair value
Inventory	$200,000	$300,000
Other net assets	600,000	600,000
Total net assets	$800,000	$900,000

The undervalued inventory was resold to third parties during 20x2. Assume a tax rate of 20%. Prepare the equity accounting entries for 20x3 and determine the balance of the investment in the joint venture.

EA1: Recognize share of post-acquisition retained earnings (RE) of Z

Dr Investment in Z	150,000	
Cr Opening RE		150,000
RE of Z as at 1 Jan 20x3		$500,000
RE of Z as at date of investment		200,000
Change in RE		$300,000
Share of Z's change in RE		$150,000

EA2: Recognize past cost of sales of undervalued inventory, after-tax

Dr Opening RE	40,000 (50% × 80% × 100,000)	
Cr Investment in Z		40,000

EA3: Reclassify dividend income as a reduction of investment

Dr Dividend income	25,000	
Cr Investment in Z		25,000

EA4: Recognize share of current profit after tax of Z

Dr Investment in Z	400,000 (50% × 80% × 1,000,000)	
Cr Share of profit of Z		400,000

Analytical check of Investment in Z:

Book value of shareholders' equity of Z			$1,850,000
P's share of Z's identifiable net assets			$ 925,000
Implicit goodwill in investment in Z:			
Investment in Z		$600,000	
BV of net assets of Z at investment date	$800,000		
Excess of FV over BV of inventory (after tax)	80,000		
FV of net assets of Z at investment date	$880,000		
Less Share of FV of net assets of Z at investment		440,000	
Goodwill in Z implicit in the investment in Z			160,000
			$1,085,000
Investment in Z, at cost			$ 600,000
EA1: Recognize share of post-acquisition retained earnings of Z			150,000
EA2: Recognize past cost of sales of undervalued inventory, after tax			(40,000)
EA3: Reclassify dividend income as a reduction of investment			(25,000)
EA4: Recognize share of current profit after tax of Z			400,000
Investment in Z as at 31 Dec 20x3			$1,085,000

Accounting for Joint Operations

Joint operators, on the other hand, will account for their interests in the joint operations in the same manner in both the separate and consolidated financial statements. In both the separate and consolidated financial statements, each operator will "recognize in relation to its interest in a joint operation:

1. Its assets, including its share of any assets held jointly;
2. Its liabilities, including its share of any liabilities incurred jointly;
3. Its revenue from the sale of its output arising from the joint operation;
4. Its share of the revenue from the sale of the output by the joint operation; and
5. Its expenses, including its share of any expenses, incurred jointly."[17]

An example of the accounting for joint operations is shown in Illustration 6.5.

ILLUSTRATION 6.5 Accounting for joint operations

P Co and T Co formed a special purpose entity Z with the sole purpose of acquiring its output of extracted minerals. P Co and T Co agreed on the contractual sharing of power that required unanimous consent on all strategic activities of Z. P Co and T Co fund the activities of Z Co. By virtue of its rights to the assets of Z and its obligations for the liabilities of Z, P Co is a joint operator of Z and recognizes its share of the assets and liabilities of Z on its statement of financial position. P Co and T Co share in Z's assets, liabilities, revenues, and expenses equally.

page 384

The financial statements of P Co for 20x3 result from the summation of P Co's and 50% of Z Co's revenues, expenses, assets and liabilities.

Income Statement and Statement of Changes in Equity (extract)
For Year Ended 31 December 20x3

	P Co (without Z)	Z	P Co (with Z)
Revenues	$6,000,000	$3,000,000	$7,500,000
Expenses	(4,000,000)	(2,000,000)	(5,000,000)
Profit before tax	$2,000,000	$1,000,000	$2,500,000
Tax	(400,000)	(200,000)	(500,000)
Profit after tax	$1,600,000	$ 800,000	$2,000,000
Dividends	(300,000)		(300,000)
Profit retained	$1,300,000	$ 800,000	$1,700,000
Retained earnings, 1 Jan 20X3	1,200,000	500,000	1,450,000
Retained earnings, 31 Dec 20X3	$2,500,000	$1,300,000	$3,150,000

Statement of Financial Position
As at 31 December 20x3

	P Co (without Z)	Z	P Co (with Z)
Fixed assets, net book value	$3,500,000	$1,900,000	$4,450,000
Other long-term assets	500,000		500,000
Initial investment in Z	300,000		–
Inventory	800,000	240,000	920,000
Accounts receivable	520,000	400,000	720,000
Cash	100,000	20,000	110,000
	$5,720,000	$2,560,000	$6,700,000
Current liabilities	$720,000	$200,000	$ 820,000
Long-term liabilities	500,000	460,000	730,000
Initial capital	2,000,000	600,000	2,000,000
Retained earnings	2,500,000	1,300,000	3,150,000
	$5,720,000	$2,560,000	$6,700,000

The share of revenue, expenses, assets, and liabilities are recognized period-by-period in the books of the joint operator. Hence, there is no need to "re-enact" prior year entries. There is also no difference between legal entity and economic entity reporting for joint operations.

To illustrate the journal entries that are passed in the P Co's books, we show the statement of financial position of Z as at 31 December 20x2 below.

Statement of Financial Position as at 31 December 20x2

Fixed assets, net book value	950,000
Inventory	320,000
Accounts receivable	150,000
Cash	50,000
	1,470,000

Current liabilities	130,000
Long-term liabilities	240,000
Initial capital	600,000
Retained earnings	500,000
	1,470,000

Journal entry by P Co during 20x3

Dr Expenses	1,000,000		
Dr Tax	100,000		
Dr Fixed assets	475,000	50% × (1,900,000−950,000)	
Dr Accounts receivable	125,000	50% × (400,000−150,000)	
Cr Cash		15,000	
Cr Inventory		40,000	
Cr Current liabilities		35,000	50% × (200,000–130,000)
Cr Long-term liabilities		110,000	50% × (460,000–240,000)
Cr Revenue		1,500,000	

Recognition of assets, liabilities, revenue, and expenses during 20x3

In this example, because there is an equal sharing of 50% across all line items, the share of equity attributable to P Co is equal to the share of net assets attributable to P Co.

Share of initial share capital	300,000
Share of opening retained earnings	250,000
Share of revenue	1,500,000
Share of expenses	(1,000,000)
Share of tax	(100,000)
Share of equity attributable to P Co	950,000

Share of fixed assets	950,000
Share of inventory	120,000
Share of accounts receivable	200,000
Share of cash	10,000
Share of current liabilities	(100,000)

Share of long-term liabilities	(230,000)
Share of net assets attributable to P Co	950,000

Where the proportion shared across revenues, expenses, assets, and liabilities is not constant, the share of equity attributable to a joint operator will not be equal to the share of net assets attributable to the joint operator. The contractual arrangement will need to spell out how shortfalls are dealt with. Typically, the other joint operator with the excess will reimburse the joint operator with the shortfall.

ILLUSTRATION 6.6 Accounting for joint operations

On 1 January 20x3, P Co and T Co entered into a joint arrangement to extract mineral oil in deep ocean. P Co contributes equipment and T Co the mining rights and mining expertise. Assume that the useful life of the equipment is 50 years. The revenues and expenses are shared equally. Expenses include the depreciation of equipment, amortization of mining rights and employee expenses. At 31 December 20x3, the year end, the following amounts were recorded:

Equipment, carrying amount in P Co's books	US$200,000,000
Mining rights, carrying amount in T Co's books	US$100,000,000
Revenue from sale of mineral oil	US$35,000,000
Expenses incurred in 20x3	US$15,000,000
Output of oil distributed to each operator	1,000,000 barrels of oil (Market price is US$40 per barrel)

In this example, there is no separate vehicle for the joint operation. T Co is the project manager and has custody of the bank account.

P Co and T Co will recognize the equipment and mining rights separately in their own books. Share of revenue, expenses and value of the physical output will be recognized by each operator.

The journal entries passed during 20x3 by P Co are as follows:

Dr Project Account	US$4,000,000	
Cr Accumulated depreciation		US$4,000,000
Depreciation expense on equipment loaned to project		
Dr Depreciation expense	US$2,000,000	
Dr Other expense	US$5,500,000*	
Cr Project Account		US$7,500,000
Share of expenses on project (including share of depreciation expense)		

* (US$15,000,000 - US$4,000,000)/2

Dr Project Account	US$17,500,000	
Cr Revenue		US$17,500,000
Share of revenue on project (US$35,000,000/2)		
Dr Inventory	US$40,000,000	
Cr Revenue		US$40,000,000
Share of physical output from project (1,000,000 × US$40)		
Dr Cash	US$14,000,000	
Cr Project Account		US$14,000,000
Cash received from T Co in settlement of project account		

The project account is settled by cash. P Co as a joint operator receives cash from the project and physical output.

APPENDIX 6A

Sale or Contribution of Assets or Business Between Investor and its Associate

The discussions in Chapter 6 have focused on the sale of assets to and from the investor. It should be noted that, in the case of downstream transactions, paragraph 28 of IAS 28 specifically includes contribution of assets from the investor to its associate other than sales to an associate. Such contributions of assets by the investor could take place at the inception where the investor transfers non-monetary assets to a newly setup associate as part of its initial investment in exchange for the equity instruments issued by the associate. It can also take place post-inception where such assets are contributed in exchange for additional equity investments.

Paragraph 30 of IAS 28 requires the contribution of a non-monetary asset to an associate in exchange for an equity interest in the associate to be accounted for in accordance with paragraph 28 of IAS 28 except when the contribution lacks commercial substance[18], i.e. it requires the gains or losses resulting from the contribution of assets to be recognized in the investor's financial statements only to the extent of the unrelated investor's interest in the associate. As discussed earlier, what this effectively means is that the investor's share of the gain or loss is eliminated as it is deemed to be unrealized.

However, paragraph 30 deals only in situations where non-monetary assets are contributed. In some cases, the investor may contribute its interests in a subsidiary to its associate. From the investor's perspective, the investor would have lost control of the subsidiary at the time when it contributes the interests in the subsidiary to the associate.

Consequently, the investor will have to account for that loss of control in accordance with the requirements in IFRS 10.

Prior to the issuance of the Amendment to IFRS 10 and IAS 28 *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*[19], a conflict existed between the requirements of IFRS 10 relating to the accounting for loss of control of a subsidiary and the requirements of IAS 28 pertaining to the accounting for contribution of assets by an investor. In particular, the pre-amended paragraph 25 of the IFRS 10 requires an entity that loses control of a subsidiary but retains an interest (which is now accounted for as an associate if it retains significant influence) to account for that retained interest at fair value on the date where control is lost and that is included in calculating the gain or loss associated with the loss of control of the subsidiary. This fair value is regarded as the cost on initial recognition of an investment in an associate for which equity accounting will apply for subsequent measurement. Paragraph 28 of IAS 28, on the other hand, requires an investor to restrict the recognition of the gain or loss arising from the contribution or sale of non-monetary assets to the associate only to the extent of unrelated interests. This requirement runs counter to the requirement in IFRS 10 where no restriction is required in respect of the gain or loss to the extent of unrelated interest.

page 388

Hence, in order to rectify this, the Board issued the said Amendments above in September 2014. The Amendments, specifically B99A of IAS 28 requires a parent to calculate the gain or loss arising from the loss of control of a subsidiary that does not contain a business arising from a transaction[20] with an associate or joint venture in accordance with B98 to B99[21] of IFRS 10. The parent will recognize the gain or loss in its profit and loss only to the extent of the unrelated investors' interest in the associate or joint venture. The remaining amount is eliminated against the carrying value of the associate.

In addition, if the parent as part of the transaction, retains an investment in the former subsidiary such that it is now an associate or a joint venture that is equity accounted for by the parent, the parent which is required to recognize the retained interest at fair value, will only recognize such remeasurement gains or losses to the extent of the unrelated investors' interests in this associate or joint venture. The remaining part is eliminated against the carrying value of the investment in associate retained in the parent. However, if the retained interest is accounted for in accordance with IAS 39/IFRS 9, the part of the gain or loss arising from the remeasurement of the retained interest at fair value is recognized in full in the parent's profit and loss[22].

Conversely, if the subsidiary in which the parent lost control over constitutes a business under the definition of IFRS 3, the full gain or loss calculated in accordance with B98 to B99 of IFRS 10 is recognized by the parent. Similarly, any interest retained in this former subsidiary is recognized at fair value in full in the parent's financial statements.

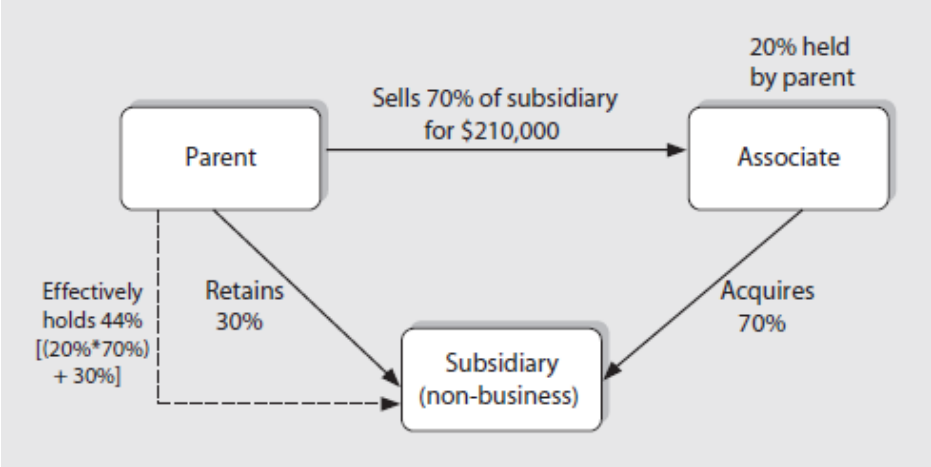
In developing the Amendments, the Board's primary concern was centered around the possibility that the existing requirements in IFRS 10 and IAS 28 could result in different outcomes depending on how the transaction is structured, i.e. it could result in the accounting for a transaction being driven by its form rather than substance. For instance, different accounting might be applied depending on whether the assets were transferred in a transaction that was structured as a sale of assets or as a sale of the entity that holds the assets (BC 190D to IAS 28). However, the Board concluded that on balance, for consistency purposes, the accounting for loss of control of a business should be consistent with the conclusions in IFRS 10 and hence, a full gain or loss should be recognized on loss of control regardless of whether the business is housed in a subsidiary or not. As assets that do not constitute business were not part of the Board's Business Combination project on which IFRS 3 was subsequently issued, the Board concluded that the current requirements in IAS 28 on the partial recognition of gains or losses in transactions between the investor and associate should only apply to sale or contribution of assets that do not constitute a business under IFRS 3 (BC190E, BC190F to IAS 28).

page 389

The following illustration which is adapted from the application example 17 in the Amendments demonstrates the accounting above.

ILLUSTRATION 6A.1 Accounting for sale of subsidiary that does not contain a business to an associate

A parent has a 100% interest in a subsidiary that does not contain a business. The parent sells 70% of its interest in the subsidiary to an associate in which it has 20% interest. As a result of this transaction, the parent loses control of the subsidiary, but retained 30% equity interest after the transaction. This 30% interest retained in the former subsidiary is equity accounted for as an associate in parent's financial statements. The fair value of the consideration received from the associate is $210,000 is also equivalent to the fair value of the 70% interest sold. The cost of investment of subsidiary in the separate financial statements of parent is $50,000. The following also information is relevant at the date of the transaction.



	Carrying Values of Net Assets $'000	Fair Value $'000
Subsidiary	100	300

Analysis

Calculation of the gain on disposal in the consolidated financial statements of parent prior to elimination required by B99A of IFRS 10

Gain on disposal	Fair value of consideration	+	Fair value of retained interest at date when control is lost	–	Carrying value of net assets[23] at date when control is lost
	= 210,000	+	90,000*	–	100,000
	= 200,000				

* $90,000 = 30% interest held * Fair value of investment of $300,000.

The gain on disposal above comprises of two components as follows:

Gain on disposal	=	Gain on sale of 70% of subsidiary to associate	+	Gain on remeasurement of retained interest of 30% to fair value
	=	(Fair value of consideration – carrying value of 70% interest)	+	(Fair value of 30% retained interest – Carrying value of 30% retained interest)
	=	(210,000 – 70%*100,000)	+	(30%*300,000 – 30%*100,000)
	=	140,000	+	60,000
	=	200,000		

Calculation of the adjusted gain on disposal in the consolidated financial statements of parent and amount to be eliminated against cost of investment in associate as required by B99A of IFRS 10

Gain on disposal recognized by parent – post elimination	=	Gain on sale of 70% of subsidiary to associate*Equity shareholding held by unrelated interest	+	Gain on remeasurement of retained interest of 30% to fair value*Equity shareholding held by unrelated interest
	=	140,000*80% interest	+	60,000*56% interest
	=	112,000	+	34,000
	=	146,000		

Hence, the amount to be eliminated against cost of investment in associate

Amount to be eliminated against cost of investment in associate	=	Gain on sale of 70% of subsidiary to associate*Equity shareholding held by parent	+	Gain on remeasurement of retained interest of 30% to fair value*Equity shareholding held by parent
	=	140,000*20% interest	+	60,000*44% interest
	=	28,000	+	26,000
	=	54,000		

Calculation of gain on disposal in parent's separate financial statements

Gain on disposal	=	Sales proceeds	–	Share of cost of investment disposed
	=	Sales proceeds	–	70%*Cost of investment
	=	210,000	–	70%*50,000
	=	210,000	–	35,000
	=	175,000		

Preparation of accounting entries

In the consolidated financial statements

Dr Gain on disposal	35,000#	
Cr Opening retained earnings		35,000

Being adjusted gain on disposal at group level prior to elimination as required by B99A

35,000 = 70%* Post acquisition profits ($100,000 – $50,000)

Dr Gain on disposal	28,000	
Cr Cost of investment in associate		28,000

Being recognition of gain on disposal to the extent of unrelated interest, i.e. 80%

Dr Cost of investment in former subsidiary, now associate	60,000	
Cr Gain on disposal		60,000

Being remeasurement of retained interest to fair value prior to elimination as required by B99A

Dr Gain on disposal	26,000	
Cr Cost of investment in former subsidiary, now associate		26,000

Being restraining the gain on disposal to the extent of unrelated party interests in the former subsidiary now associate

In the parent's separate financial statements

Dr Cash	210,000	
Cr Cost of investment		35,000
Cr Gain on disposal		175,000

Being gain on disposal on sale of former subsidiary in the separate financial statements In the associate's financial statements

Dr Net Assets	210,000[+]	
Cr Cost of investment		210,000

Being accounting for acquisition of assets in the associate's financial statements

[+]In the associate's financial statements, this sale of the subsidiary that does not constitute a business is accounted for as an acquisition of assets. The purchase consideration is allocated to the individual assets and liabilities in the subsidiary based on the relative fair values at the date of the transaction.

Conversely, if the scenario were to be tweaked such that the subsidiary sold by the parent constitutes a business, the gain on disposal of $200,000 calculated above will be recognized in full in the consolidated financial statements of the parent. The associate will account for the transaction as a business combination under IFRS 3.

Subsequent to the issuance of the Amendments to IFRS 10 and IAS 28 *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture,* an unintended consequence was uncovered. As discussed above, when the parent retains an interest in the transaction described in B99A of IFRS 10, this interest is remeasured to fair value at the date when control is lost. The gain or loss on the remeasurement recognized by the parent in its consolidated financial statement is restricted to the extent of the unrelated investors' interests in the associate and the remaining part of the gain or loss is eliminated against the carrying amount of the investment in that associate. Consequently, the net carrying value (i.e. fair value adjusted for the gain or loss of the parent's share in the now associate) forms the cost of investment in the associate on acquisition.

page 392

However, paragraph 32 of IAS 28 provides guidance on the accounting for the difference between the cost of the investment recognized on acquisition of the investment and the investor's share of net assets of the equity accounted for associate. Specifically, goodwill (i.e. the excess of cost of investment over the investor's share of fair value of net assets) is included in the carrying amount of the investment and any excess of the investor's share of fair value of net identifiable assets over the cost of investment is included as income in the determination of the investor's share of associate's profit or loss in the period in which the investment is acquired.

As the gain or loss of remeasurement to the extent of parent's interest is eliminated against the cost of investment as required in B99A of IFRS 10, there is a concern that the carrying value of the cost of investment may be reduced significantly when the remeasurement of the retained interest in the associate results in a gain and when the investor's share of fair value of the net identifiable assets is calculated in applying the requirements of paragraph 32 of IAS 28, this may result in an excess of the investor's share in the net assets over the cost of investment for which the excess is required to be recognized as a gain in the investor's profit and loss. Effectively in this case, the gain arising from the remeasurement which was previously eliminated against the cost of investment in accordance with paragraph B99A of IFRS 10 is re-recognized as income for the period, thereby completely reversing the elimination of the gain required under paragraph B99A of IFRS 10.

The Board deliberated in January 2015 and tentatively agreed to clarify the requirements of IFRS 10 and IAS 28 to:

1. Amend IFRS 10 to explain that in the limited circumstance when the loss of control of a subsidiary gives rise to an investment that is equity accounted for and that subsidiary does not contain a business, the cost on initial recognition of the investment is the fair value of the investment; and any gains or losses eliminated are a subsequent adjustment and
2. Amend IAS 28 to explain that for the limited circumstance described above, the cost of acquisition of the associate for the purpose of acquisition accounting is the fair value of the investment at the date where control is lost and is determined before the elimination of any gains or losses required by paragraph B99A of IFRS 10.

However, in June 2015, the Board decided to consider the above tentative decisions together with other proposals relating to application of IAS 28 as part of a wider research project on the equity method of accounting. At the same time, they also tentatively decided to defer the effective date of the Amendments to IFRS 10 and IAS 28 so that entities would not need to change the way in which they apply IAS 28 twice in a short period. In addition, the Board decided that early application of the Amendment to IFRS 10 and IAS 28 should continue to be permitted because the amendments were intended to address existing diversity in practice and consequently, the IASB was of the view that early application of the Amendments to IFRS 10 and IAS 28 was unlikely to increase diversity. An exposure draft (ED/2015/17) on these proposals was issued in August 2015 to seek constituents' views on the proposals. Majority of the respondents agreed with the proposal and the Board finalized the deferral of the September 2014 Amendment in December 2015. The original effective date of 1 January 2016 was deleted and the IASB indicated that a new effective date will be determined at a future date when the Board finalizes the revisions, if any that result from the research project on the equity method of accounting.

PROBLEMS

P6.1 Equity method versus consolidation

Refer to the information in P5.2.

Required:

1. If Jewel could legitimately structure the relationship with Opal such that it could equity account rather than consolidate Opal's financial statements, what would be the reported balance in the investment in Opal account as at 31 December 20x2?

2. Advise Jewel on whether, and how, investors may differ in their perceptions of the risk and value of the economic entity as a result of the different information presented under equity as compared with consolidation for group reporting.

P6.2 Equity method and analytical check on Investment in Associate

Refer to the information in P5.3.

Required:

1. If other evidence suggests that Prism had only significant influence and not control over Sapphire, prepare the necessary equity accounting entries for the year ended 31 December 20x9.
2. Perform an analytical check on the balance of the investment in Sapphire account under the equity method.

P6.3 Analysis of cost method versus equity method

On 1 January 20x2, I-Co entered into a joint-venture agreement to incorporate a new company called A-Co. I-Co's initial investment in A-Co was $10,000,000, which was 30% of the initial start-up capital. The following information relates to A-Co for the year ended 31 December 20x2:

Profit before tax	$6,000,000
Tax	(1,500,000)
Profit after tax	$4,500,000
Dividends	(150,000)
Retained profit	$4,350,000

Required:

1. Assume that if I-Co had a choice between the cost and equity method, what amounts would be reported for the following items under either method?
   (a) The after-tax income from A-Co for the year ended 31 December 20x2; and
   (b) The carrying amount of A-Co as at 31 December 20x2.
2. Consider the arguments put forward by V. Mazay, T. Wilkins and I. Zimmer, "Determinants of the Choice of Accounting for Investments in Associated Companies", *Contemporary Accounting Research*, Vol. 10 No. 1 (Fall 1993). Their paper focuses on the motivations for the choice between cost and the equity accounting methods. Using insights from the paper and your own critical analysis, explain which of the two methods would be preferred by the following groups and under what conditions.
   (a) I-Co's management;
   (b) I-Co's equity holders; and
   (c) I-Co's lenders.

page 394

A note on non-elimination of profits arising from transactions with associates by Mazay et al.: When an investor sells to an associate or subsidiary, a profit may be earned and recorded in the books of the investor. The profit arises when the transfer price is at a mark-up to the original cost incurred by the investor. The associate or subsidiary that buys the goods will then sell to an external party and record a cost of sale based on the transfer price. If the two transactions (the original sale and the resale) are made within the same period, there is no issue with any "unrealized profit" as the sales recorded by the investor will be offset by the cost of sales recorded by the associate. However, when the two sales are not in the same period, an unrealized profit arises from an intragroup transaction. From the group's perspective, this profit does not exist as it arises from a sale to a related party within the group. It

is also a result of intragroup transfer pricing, which has not been ratified by an external market transaction. (The above arguments also hold when the associate or subsidiary sells to the investor.) Unrealized profits must be adjusted out in *equity accounting* and *consolidation*. The *cost method*, however, emphasizes the legal entity perspective: the investor and associate are deemed as two unrelated parties and the "unrealized" profit arising from the sale is deemed as earned.

P6.4 Equity method

The financial statements of A Co are shown below. P Co acquired a 30% interest in A Co on 1 January 20x3.

Income Statement
For Year Ended 31 December 20x5

Profit before tax	$200,000
Tax at 20%	(40,000)
Profit after tax	$160,000
Dividends declared	(20,000)
Profit retained	$140,000
Retained earnings, 1 January 20x5	100,000
Retained earnings, 31 December 20x5	$240,000

Statement of Financial Position
As at 31 December 20x5

Fixed assets, net book value	$450,000
Inventory	120,000
Accounts receivable	60,000
Cash	25,000
	$655,000
Accounts payable	$315,000
Share capital	100,000
Retained earnings	240,000
	$655,000
Date of acquisition of A Co	1 January 20x3
Percentage acquired by P Co	30%
Cost of investment in A Co	$200,000
Shareholders' equity of A Co at date of acquisition:	
Share capital	100,000
Retained earnings	30,000
	$130,000

Fair and book values of identifiable net assets at date of acquisition:	
Unrecognized intangible asset (fair value)	$ 40,000
Other identifiable net assets (book and fair values) .	130,000
Fair value of identifiable net assets at date of acquisition	170,000
Book value of identifiable net assets at date of acquisition	130,000

Additional information:

(a) Unrecognized intangible asset of A Co was partially impaired in 20x4 to the extent of 50% of its original fair value.

(b) A Co purchased inventory from P Co on 1 December 20x4. Details are as follows:

Transfer price	$20,000
Original cost	(15,000)
Profit on sale	$ 5,000

The inventory was sold only in 20x5.

(c) Assume a tax rate of 20%. Recognize tax on fair value adjustments.

Required:

1. Prepare the equity accounting entries for 20x5.
2. Perform an analytical check on the balance of Investment in A Co as at 31 December 20x5.

P6.5 Comprehensive problem set

On 1 January 20x1, P Co acquired 70% of S Co by issuing 1,000,000 new shares to the owners of S Co. The fair value of consideration paid by P Co to acquire S Co was $2,100,000. The fair value of non-controlling interests at acquisition date was $900,000. On 1 January 20x2, P Co acquired a 40% ownership interest in A Co by making a cash payout of $200,000 to the owners of A Co.

The following information relates to statements of financial position at date of acquisition:

	S Co Book value	S Co Fair value	A Co Book value	A Co Fair value
In-process R&D	$ 0	$1,000,000		
Fixed assets	50,000	50,000	$100,000	$140,000
Inventory	500,000	550,000	120,000	120,000
Accounts receivable	100,000	100,000	140,000	140,000
Cash	20,000	20,000	10,000	10,000
Total assets	$670,000	$1,720,000	$370,000	$410,000
Contingent liability	$ 0	$ 50,000		
Accounts payable	250,000	250,000	$ 50,000	$ 50,000
Share capital	300,000		200,000	
Retained earnings	120,000		120,000	
Equity and Liabilities	$670,000	$1,720,000	$370,000	$410,000

The following financial statements relate to the financial year ended 31 December 20x3.

Income statement
For Year Ended 31 December 20x3

	P Co	S Co	A Co
Sales	$5,000,000	$3,500,000	$2,000,000
Cost of sales	(4,000,000)	(3,000,000)	(1,300,000)
Gross profit	$1,000,000	$ 500,000	$ 700,000
Other income	140,000	30,000	20,000
Operating expenses	(150,000)	(70,000)	(100,000)
Net profit before tax	$ 990,000	$ 460,000	$ 620,000
Tax	(198,000)	(92,000)	(136,400)
Net profit after tax	$ 792,000	$ 368,000	$ 483,600
Dividends declared	(50,000)	(100,000)	(60,000)
Net profit attributable to shareholders	$ 742,000	$ 268,000	$ 423,600
Retained earnings, 1 January 20x3	2,500,000	250,000	160,000
Retained earnings, 31 December 20x3	$ 3,242,000	$ 518,000	$ 583,600

Statement of Financial Position
As at 31 December 20x3

	P Co	S Co
Investment in S Co	$2,100,000	
Investment in A Co	200,000	
Fixed assets	4,000,000	$ 40,000
Inventory	2,000,000	450,000
Accounts receivable	1,000,000	350,000

Cash	120,000	40,000
	$9,420,000	$880,000
Accounts payable	$3,178,000	$ 62,000
Share capital	3,000,000	300,000
Retained earnings	3,242,000	518,000
	$9,420,000	$880,000

Additional information:

(a) Impairment of in-process research and development of $100,000 was expensed off in the consolidated financial statements of P Co in 20x2.

(b) Undervalued inventory as at 1 January 20x1 was sold in 20x1.

(c) The contingent liability of $50,000 in respect of legal claims was paid off by S in 20x3, and recognized as an expense by S Co in 20x3.

(d) The following sales of inventory were made during 20x2 and 20x3.

	20x2	20x3
Sales from S to P	$100,000	
Original cost	$ 80,000	
Percentage unsold to third parties at year-end	20%	0%
Sales from S to P		$200,000
Original cost		$160,000
Percentage unsold to third parties at year-end		40%
Sales from P to A	$ 70,000	
Original cost	$ 50,000	
Percentage unsold to third parties at year-end	30%	0%

(e) Undervalued fixed assets of A Co had a useful life of five years from date of acquisition.

(f) There is no change in the share capital of S Co and A Co from acquisition date.

(g) Assume a tax rate of 20%. Recognize tax on fair value adjustments.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x3.
2. Prepare the consolidation worksheet for the year ended 31 December 20x3 to show the consolidated financial statements prepared in accordance with IAS 27 and IAS 28.
3. Perform an analytical check on the balance of non-controlling interests and investment of associate as at 31 December 20x3.

P6.6 Comprehensive problem set

P Co acquired an interest in X Co and Z Co. Details of the acquisitions are as follows:

	X Co	Z Co
Date of acquisition	1 Jan 20x3	1 Jan 20x4
Percentage acquired by P Co	90%	
Percentage acquired by P Co		30%
Shareholders' equity at date of acquisition:		
Share capital	$ 500,000	$ 300,000
Retained earnings	1,000,000	800,000
	$1,500,000	$1,100,000

The fair value and book value of assets at acquisition date are shown below:

	X Co Book value	X Co Fair value	Z Co Book value	Z Co Fair value
Inventory	$ 100,000	$ 150,000		
Intangibles				$ 200,000
Other identifiable net assets	1,400,000	1,400,000	$1,100,000	1,100,000
Total identifiable net assets	$1,500,000	$1,550,000	$1,100,000	$1,300,000
Fair value of non-controlling interests		$ 200,000		

The financial statements for the year ended 31 December 20x5 are shown below:

Income Statement
For Year Ended 31 December 20x5

	P Co	X Co	Z Co
Profit before tax	$8,000,000	$5,000,000	$1,200,000
Tax	(1,600,000)	(1,000,000)	(200,000)
Profit after tax	$6,400,000	$4,000,000	$1,000,000
Dividends declared	(600,000)	(240,000)	(100,000)
Profit retained	$5,800,000	$3,760,000	$ 900,000
Retained earnings, 1 January 20x5	1,800,000	1,600,000	1,000,000
Retained earnings, 31 December 20x5	$7,600,000	$5,360,000	$1,900,000

Statement of Financial Position
As at 31 December 20x5

	P Co	X Co	Z Co
Fixed assets, net book value	$5,000,000	$4,850,000	$2,000,000
Investment in X, at cost	1,800,000		
Investment in Z, at cost	500,000		
Inventory	750,000	600,000	200,000
Accounts receivable	700,000	600,000	300,000

Cash	200,000	150,000	50,000
	$8,950,000	$6,200,000	$2,550,000
Accounts payable	$ 350,000	$ 340,000	$ 350,000
Share capital	1,000,000	500,000	300,000
Retained earnings	7,600,000	5,360,000	1,900,000
	$8,950,000	$6,200,000	$2,550,000

Additional information:

(a) Undervalued inventory was sold in 20x4.

(b) Unrecognized intangible asset of Z Co was impaired in 20x5 to the extent of 20% of its original fair value. This was unrecognized in the separate financial statements.

(c) X Co transferred its fixed asset to P Co on 1 January 20x4. Details are as follows:

Transfer price invoiced by X Co to P Co		$120,000
Original cost of the fixed asset	$100,000	
Accumulated depreciation	60,000	
Net book value at 1 January 20x4		40,000
Profit on sale recorded by X Co in 20x4		$ 80,000
Useful life in years from date of purchase		5

Assume no change in estimates of useful life, i.e. remaining life at 1 January 20x4 is two years. Also assume nil residual value.

(d) X Co purchased inventory from P Co on 15 December 20x5. Details are as follows:

Transfer price	$30,000
Original cost	10,000
Gain on sale recorded by P Co	$20,000

The inventory was sold only in 20x6

(e) Sales between P Co and Z Co are as follows:

	Sales price	Original cost	Unsold at end of transfer year
P Co sold to Z Co in 20x4	$100,000	$80,000	10%
Z Co sold to P Co in 20x5	60,000	45,000	20%

The inventory sold by P Co to Z Co was fully resold to third parties in 20x5.

(f) Assume a tax rate of 20%. Recognize tax on fair value adjustments.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x5.
2. Perform an analytical check on the non-controlling interests' balance as at 31 December 20x5.
3. Perform an analytical check on the investment in associate balance as at 31 December 20x5.

P6.7 Comprehensive problem set

On 1 January 20x3, P Co acquired a 90% interest in Y Co. On that date, the fair value of non-controlling interests in Y Co was $180,000. A year later, on 1 January 20x4, P Co acquired a 30% interest in Z Co. Book values of equity and fair values of identifiable net assets of the acquired companies are shown below:

	Y Co	Z Co
Date of acquisition	1 January 20x3	1 January 20x4
Shareholders' equity at date of acquisition:		
Share capital	$ 500,000	$ 300,000
Retained earnings	1,000,000	700,000
	$1,500,000	$1,000,000

The fair and book values of identifiable net assets of each company at date of acquisition are shown below:

	Y Co		Z Co	
	Book value	Fair value	Book value	Fair value
Intangibles	$ 0	$ 200,000	$ 0	$ 300,000
Other identifiable net assets	1,500,000	1,500,000	1,000,000	1,000,000
Total identifiable net assets	$1,500,000	$1,700,000	$1,000,000	$1,300,000

The financial statements for the year ended 31 December 20x5 are shown below:

Income Statement
For Year Ended 31 December 20x5

	P Co	Y Co	Z Co
Profit before tax	$5,000,000	$1,300,000	$1,400,000
Tax	(1,000,000)	(260,000)	(300,000)
Profit after tax	$4,000,000	$1,040,000	$1,100,000
Dividends declared	(600,000)	(200,000)	(100,000)
Profit retained	$3,400,000	$ 840,000	$1,000,000
Retained earnings, 1 January 20x5	4,000,000	1,500,000	900,000
Retained earnings, 31 December 20x5	$7,400,000	$2,340,000	$1,900,000

Statement of Financial Position
As at 31 December 20x5

	P Co	Y Co	Z Co
Fixed assets, net book value	$5,000,000	$2,300,000	$1,900,000
Investment in Y Co, at cost	1,800,000		
Investment in Z Co, at cost	500,000		

Inventory	750,000	500,000	200,000
Accounts receivable	1,500,000	150,000	300,000
Cash	50,000	100,000	50,000
	$9,600,000	$3,050,000	$2,450,000
Accounts payable	$1,200,000	$ 210,000	$ 250,000
Share capital	1,000,000	500,000	300,000
Retained earnings	7,400,000	2,340,000	1,900,000
	$9,600,000	$3,050,000	$2,450,000

Additional information:

(a) Unrecognized intangible asset of Z Co was impaired in 20x5 to the extent of 30% of its original fair value. Unrecognized intangible asset of Y Co was unimpaired.

(b) On 1 January 20x5, Y Co sold equipment to P Co at an invoiced price of $150,000. At the date of the sale, the net book value of the equipment was $48,000. Its original cost was $120,000. The original useful life of the equipment was five years; it had no estimated residual value. On 1 January 20x5, the remaining useful life was estimated at three years; estimated residual value remains at nil value.

(c) P Co sold inventory to Y Co in December 20x4 at market price of $60,000. The original cost of the inventory was $70,000. The inventory was resold to third parties in 20x5.

(d) Assume a tax rate of 20%. Recognize tax on fair value adjustments.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x5 (with narratives and workings).
2. Perform analytical checks on the following balances as at 31 December 20x5:
   (a) Non-controlling interests; and
   (b) Investment in associate.

P6.8 Comprehensive problem set

P Co acquired a 90% ownership interest in Y Co on 1 January 20x3. At the date of acquisition, the share capital of Y Co was $1,000,000, and the retained earnings balance was $500,000. The book values of assets of Y Co were close to their fair values, with except for inventory that was undervalued by $100,000. Y Co sold the undervalued inventory in 20x3. The fair value of non-controlling interests was $200,000 as at the date of acquisition.

On 1 January 20x4, P Co acquired a 30% ownership interest in Z Co. At that date, the share capital of Z Co was $200,000 while its retained earnings balance was $400,000. Z Co had an unrecognized intangible asset with a reliable fair value of $240,000. The intangible asset had a useful life of five years from the date of acquisition.

In 20x4, Y Co sold inventory to P Co at a transfer price of $360,000. The original cost of the inventory was $200,000. Ninety percent of the inventory remained unsold at the end of 20x4; 10% of the original inventory remained unsold as at the end of 20x5.

On 1 January 20x5, Z Co transferred machinery to P Co at an invoiced price of $296,000. The original cost of the machinery was $360,000; the profit on sale recorded by Z Co from the transfer was $8,000. The machinery had an original useful life of five years with no residual value. As at 1 January 20x5, the remaining useful life of the machinery was four years with no change to its estimated residual value.

Assume a tax rate of 20%. Recognize tax effects of fair value adjustments. The financial statements for P Co, Y Co and Z Co for the financial year ended 31 December 20x5 are shown below.

Income Statement
For Year Ended 31 December 20x5

	P Co	Y Co	Z Co
Profit before tax	$3,000,000	$1,200,000	$ 600,000
Tax	(600,000)	(240,000)	(100,000)
Profit after tax	$2,400,000	$ 960,000	$ 500,000
Dividends declared	(300,000)	(200,000)	(60,000)
Profit retained	$2,100,000	$ 760,000	$ 440,000
Retained earnings, 1 January 20x5	1,000,000	900,000	560,000
Retained earnings, 31 December 20x5	$3,100,000	$1,660,000	$1,000,000

Statement of Financial Position
As at 31 December 20x5

	P Co	Y Co	Z Co
Fixed assets, net book value	$3,200,000	$1,500,000	$ 800,000
Investment in Y Co, at cost	1,900,000		
Investment in Z Co, at cost	600,000		
Inventory	800,000	600,000	300,000
Intercompany receivable		200,000	
Accounts receivable	530,000	300,000	250,000
Cash	20,000	80,000	30,000
	$7,050,000	$2,680,000	$1,380,000
Accounts payable	$2,750,000	$ 20,000	$ 180,000
Intercompany payable	200,000		
Share capital	1,000,000	1,000,000	200,000
Retained earnings	3,100,000	1,660,000	1,000,000
	$7,050,000	$2,680,000	$1,380,000

Required:

1. Prepare the consolidation and equity accounting entries for 20x5 (with narratives and workings).
2. Prepare a consolidation worksheet for the year ended 31 December 20x5 for the above companies.
3. Perform an analytical check on the year-end balances of non-controlling interests and investment in associate.

P6.9 Comprehensive problem set

P Co acquired an interest in Y Co and Z Co. Details of the acquisitions are as follows:

	Y Co	Z Co
Date of acquisition	1 January 20x4	1 January 20x5
Percentage acquired by P Co	90%	30%
Shareholders' equity at date of acquisition:		
Share capital	$ 500,000	$200,000
Retained earnings	700,000	400,000
	$1,200,000	$600,000

The differences between fair value and book value at acquisition date were for the following assets:

	Y Co		Z Co	
	Book value	Fair value	Book value	Fair value
Inventory	$220,000	$320,000	–	
Intangibles				$300,000

Inventory of Y Co at acquisition date was sold to third parties within six months of acquisition. Intangible assets of Z Co had a remaining useful life of five years from the date of acquisition. The fair value of non-controlling interests of Y Co at acquisition date was $140,000.

The financial statements of P Co, Y Co, and Z Co for the year ended 31 December 20x6 are shown below.

Income Statement
For Year Ended 31 December 20x6

	P Co	Y Co	Z Co
Profit before tax	$2,800,000	$1,200,000	$ 500,000
Tax	(560,000)	(240,000)	(80,000)
Profit after tax	$2,240,000	$ 960,000	$ 420,000
Dividends declared	(200,000)	(120,000)	(100,000)
Profit retained	$2,040,000	$ 840,000	$ 320,000
Retained earnings, 1 January 20x6	2,800,000	800,000	700,000
Retained earnings, 31 December 20x6	$4,840,000	$1,640,000	$1,020,000

Statement of Financial Position
As at 31 December 20x6

	P Co	Y Co	Z Co
Fixed assets, net book value	$2,340,000	$1,000,000	$ 700,000
Investment in Y Co, at cost	1,400,000		
Investment in Z Co, at cost	500,000		
Inventory	560,000	550,000	230,000
Intercompany receivable		40,000	
Amount owing by P Co			50,000

Accounts receivable	1,200,000	800,000	300,000
Cash	30,000	100,000	50,000
	$6,030,000	$2,490,000	$1,330,000
Accounts payable	$ 100,000	$ 350,000	$ 110,000
Intercompany payable	40,000		
Amount owing to Z Co	50,000		
Share capital	1,000,000	500,000	200,000
Retained earnings	4,840,000	1,640,000	1,020,000
	$6,030,000	$2,490,000	$1,330,000

Additional information:

(a) On 1 November 20x5, Y Co sold inventory to P Co at a transfer price of $200,000, and recorded a gross profit of $60,000 on the sale. The subsequent resale of this batch of inventory is as follows:

Resold to third parties during 20x5	20%
Resold to third parties during 20x6	60%
In inventory as at 31 December 20x6	20%

(b) In 20x6, P Co sold excess inventory to Y Co as follows:

page 405

Transfer price of inventory	$100,000
Original cost of inventory	$120,000
Percentage resold to third parties during 20x6	80%
Percentage in inventory as at 31 December 20x6	20%

The inventory was not impaired as at the date of transfer or subsequently.

(c) On 1 January 20x6, Z Co transferred an item of equipment to P Co at a transfer price of $172,000. The original cost of the equipment was $180,000 and the accumulated depreciation at the date of transfer was $36,000. The original useful life of the equipment was five years and the remaining useful life at the date of transfer was four years. Assume zero residual value.

(d) P Co recognized interest expense charged by Y Co and Z Co during 20x6 as follows:

Interest expense charged by Y Co	$1,500
Interest expense charged by Z Co	$1,000

The same amounts were recorded as interest income by Y Co and Z Co, respectively.

(e) Assume a tax rate of 20%. Recognize tax effects on fair value adjustments.

Required:

1. Prepare consolidation and equity accounting entries for the year ended 31 December 20x6, with narratives and workings.
2. Perform an analytical check on the balance in non-controlling interests and investment in associate as at 31 December 20x6, showing workings clearly.
3. Prepare the consolidation worksheets for the year ended 31 December 20x6.

P6.10 Comprehensive problem set

The financial statements of P Co, Y Co, and Z Co are shown below.

Income Statement
For Year Ended 31 December 20x6

	P Co	Y Co	Z Co
Profit before tax	$4,200,000	$1,800,000	$ 600,000
Tax	(840,000)	(360,000)	(132,000)
Profit after tax	$3,360,000	$1,440,000	$ 468,000
Dividends declared	(400,000)	(300,000)	(100,000)
Profit retained	$2,960,000	$1,140,000	$ 368,000
Retained earnings, 1 January 20x6	1,200,000	1,200,000	700,000
Retained earnings, 31 December 20x6	$4,160,000	$2,340,000	$1,068,000

Statement of Financial Position
As at 31 December 20x6

	P Co	Y Co	Z Co
Fixed assets, net book value	$2,800,000	$2,200,000	$ 700,000
Investment in Y Co, at cost	2,200,000		
Investment in Z Co, at cost	800,000		
Inventory	760,000	500,000	230,000
Intercompany receivable		100,000	
Amount due from Z Co	60,000		
Accounts receivable	600,000	700,000	400,000
Cash	45,000	100,000	50,000
	$7,265,000	$3,600,000	$1,380,000
Accounts payable	$1,805,000	$ 460,000	$ 52,000
Amount due to P Co			60,000
Intercompany payable	100,000		
Share capital	1,200,000	800,000	200,000
Retained earnings	4,160,000	2,340,000	1,068,000
	$7,265,000	$3,600,000	$1,380,000

P acquired an interest in Y Co and Z Co as follows:

	Y Co	Z Co
Date of acquisition	1 January 20x4	1 January 20x5
Percentage acquired by P Co	90%	30%
Shareholders' equity at date of acquisition:		

Share capital	$ 800,000	$200,000
Retained earnings	900,000	400,000
	$1,700,000	$600,000

The differences between fair values and book values at the date of acquisition were as follows:

	Y Co
Book value of inventory	$220,000
Fair value of inventory	$320,000
The inventory was sold to third parties in 20x4	
The fair value of non-controlling interests as at the date of acquisition was $190,000	

	Z Co
Unrecorded contingent liability that was reliably measured	$(100,000)
The contingent liability materialized in 20x6; Z Co recorded an expense to the income statement of $100,000 for the year ended 31 December 20x6	

Additional information:

(a) On 1 January 20x5, Y Co transferred machinery to P Co at an invoiced price of $162,000. The original cost of the machinery was $180,000. The accumulated depreciation as at 1 January 20x5 was $36,000. The equipment was purchased on 1 January 20x4 when the estimated useful life was five years. Estimated useful life at the date of transfer was four-and-a-half years. Assume a zero residual value.

(b) In 20x6, P Co sold excess inventory to Y Co as follows:

Transfer price of inventory	$50,000
Original cost of inventory	$60,000
Percentage in inventory as at 31 December 20x6	10%

The loss incurred by P Co was indicative of an impairment loss of the inventory.

(c) In 20x5, P Co sold inventory to Z Co as follows:

Transfer price of inventory	$100,000
Original cost of the inventory	$70,000
Percentage resold to third parties dur	
20x5	20%
20x6	60%
20x7	20%

(d) Assume a tax rate of 20%. Recognize tax effects on fair value adjustments.

Required:

1. Prepare consolidation and equity accounting entries for the year ended 31 December 20x6, with narratives and workings.
2. Perform an analytical check on the balance in non-controlling interests and investment in associate as at 31 December 20x6, showing the workings clearly.
3. Prepare consolidation worksheets for the year ended 31 December 20x6.

P6.11 Comprehensive problem set

P Co acquired Y Co and Z Co as follows:

	Y Co	Z Co
Date of acquisition	1 January 20x4	1 January 20x5
Percentage acquired by P Co	90%	30%
Shareholders' equity at date of acquisition:		
Share capital	$ 500,000	$300,000
Retained earnings	600,000	400,000
	$1,100,000	$700,000

The differences between fair value and book value of assets relate to the following:

	Y Co		Z Co	
	Book value	Fair value	Book value	Fair value
Accounts receivable	$150,000	$100,000		
Inventory			$200,000	$250,000

The difference between the fair value and book value of accounts receivable of Y Co was due to the additional provision for impairment losses required as at the date of acquisition. Y Co recognized the impairment losses in its separate financial statements only in 20x4.

The fair value of non-controlling interests in Y Co at the date of acquisition was $120,000. The undervalued inventory of Z Co was sold to third parties in 20x5. The financial statements of P Co, Y Co and Z Co are shown below.

Income Statement
For Year Ended 31 December 20x6

	P Co	Y Co	Z Co
Profit before tax	$2,500,000	$ 900,000	$ 700,000
Tax	(500,000)	(180,000)	(100,000)
Profit after tax	$2,000,000	$ 720,000	$ 600,000
Dividends declared	(300,000)	(140,000)	(80,000)
Profit retained	$1,700,000	$ 580,000	$ 520,000

Retained earnings, 1 January 20x6	900,000	800,000	500,000
Retained earnings, 31 December 20x6	$2,600,000	$1,380,000	$1,020,000

Statement of Financial Position
As at 31 December 20x6

	P Co	Y Co	Z Co
Fixed assets, net book value	$2,500,000	$1,250,000	$1,000,000
Investment in Y Co, at cost	1,200,000		
Investment in Z Co, at cost	300,000		
Intercompany receivable		40,000	
Amount due from Z Co	30,000		
Inventory	750,000	500,000	200,000
Accounts receivable	420,000	150,000	300,000
Cash	50,000	100,000	50,000
	$5,250,000	$2,040,000	$1,550,000
Accounts payable	$1,610,000	$ 160,000	$ 200,000
Intercompany payable	40,000		
Amount due to P Co			30,000
Share capital	1,000,000	500,000	300,000
Retained earnings	2,600,000	1,380,000	1,020,000
	$5,250,000	$2,040,000	$1,550,000

Additional information:

(a) P Co transferred excess inventory to Y Co as follows:

Transfer price	$120,000
Original cost of inventory	$150,000
Date of transfer	1 July 20x6
Percentage resold to third parties in 20x6	70%
The loss on the transfer is not indicative of an impairment loss	

(b) On 1 January 20x6, Y Co transferred its fixed asset to P Co at a transfer price of $120,000. The original cost of the fixed asset was $100,000; its accumulated depreciation at the date of transfer was $60,000. The original useful life of the fixed asset was five years, and its remaining useful life as at 1 January 20x6 was two years. The fixed asset had zero residual value.

(c) Sale of inventory from P Co to Z Co is as follows:

Transfer price	$100,000
Original cost of inventory	$80,000

Date of sale	1 November 20x5
Percentage resold to third parties in 20x5	20%
Percentage resold to third parties in 20x6	80%

(d) Assume a tax rate of 20%. Recognize tax effects on fair value adjustments.

Required:

1. Prepare consolidation and equity accounting entries for the year ended 31 December 20x6, with narratives and workings.
2. Perform an analytical check on the balance in non-controlling interests and investment in associate as at 31 December 20x6, showing the workings clearly.
3. Perform an analytical check on consolidated retained earnings as at 31 December 20x6, showing workings clearly.
4. Prepare consolidation worksheets for the year ended 31 December 20x6.

P6.12 Comprehensive problem set

Prism Co has "control" over Silver Co and "significant influence" over Amber Co. The financial statements for 20x6 are shown below. All figures are in dollars, except otherwise indicated.

Income Statement and Partial Statement of Changes in Equity

	Prism Co	Silver Co	Amber Co
Profit before tax	$1,890,000	$1,300,000	$1,800,000
Tax	(378,000)	(260,000)	(378,000)
Profit after tax	$1,512,000	$1,040,000	$1,422,000
Dividends declared	(50,000)	(100,000)	(120,000)
Retained profit	$1,462,000	$ 940,000	$1,302,000
Retained earnings, 1 Jan 20x6	890,000	600,000	900,000
Retained earnings, 31 Dec 20x6	$2,352,000	$1,540,000	$2,202,000

Statement of Financial Position (Abridged)
As at 31 December 20x6

	Prism Co	Silver Co	Amber Co
Investment in Silver Co	$1,760,000		
Investment in Amber Co	900,000		
Amount due to Silver Co	(120,000)		
Amount due to Prism Co			$ (20,000)
Amount due from Prism Co		$ 120,000	
Amount due from Amber Co	20,000		
Other net assets	1,692,000	1,820,000	3,222,000
	$4,252,000	$1,940,000	$3,202,000

Share capital	$1,900,000	$ 400,000	$ 900,000
Retained earnings	2,352,000	1,540,000	2,202,000
Revaluation reserves			100,000
	$4,252,000	$1,940,000	$3,202,000

	Silver Co	Amber Co
Date of acquisition	1/1/20x3	1/1/20x4
Ownership interests of Prism Co	90%	30%
Shareholders' equity at acquisition date		
Share capital	$ 400,000	$ 900,000
Retained earnings	520,000	820,000
Revaluation reserves		70,000
	$ 920,000	$1,790,000
Revaluation reserves of Amber as at 1 Jan 20x6		$120,000
Fair value of non-controlling interests as at date of acquisition	$180,000	

Fair and book values of identifiable net assets of each company as at date of acquisition:

	Silver Co		Amber Co	
	Book value	Fair value	Book value	Fair value
Intangible assets	$120,000	$ 400,000		
Provision for environmental damages				$ (220,000)
Other net assets	800,000	800,000	$1,790,000	1,790,000
Total net assets	$920,000	$1,200,000	$1,790,000	$1,570,000

Additional information:

(a) As at acquisition date, Silver Co had intangible assets that had remaining useful life of 20 years. On 31 December 20x5, new information arose:

Value in use	$160,000
Fair value less cost to sell	100,000

There was no change in the estimated remaining useful life

(b) On 31 December 20x4, Silver Co, as a contractor, transferred a completed refrigerated storeroom to Prism Co. The construction began on 1 March 20x4 and Silver Co had recognized revenue of $240,000 and profit of $40,000 during 20x4. The economic useful life of the storeroom was ten years from 1 January 20x5. Residual value was negligible. The construction work-in-progress and the progress billings accounts were closed on 31 December 20x4.

(c) During December 20x6, Prism Co sold excess inventory to Silver Co as follows:

Transfer price	$50,000
Original cost and carrying amount	$75,000
Fair value	$60,000
Percentage unsold as at 31 December 20x6	90%

(d) Environmental damages as of acquisition date were settled and expensed by Amber Co as follows:

During 20x5	$180,000
During 20x6	50,000

(e) During 20x5, Amber Co sold inventory to Prism Co as follows:

Transfer price	$120,000
Original cost and carrying amount	$ 80,000
Percentage resold to third parties during 20x5	30%
Percentage resold to third parties during 20x6	60%
Percentage unsold as at 31 December 20x6	10%
Net realizable value of remaining inventory	$ 9,000

(f) Prism Co recognizes non-controlling interests at full fair value at acquisition date. Apply a tax rate of 20% on all appropriate adjustments, including fair value adjustments. The legal entities recognize impairment losses, if any, at the end of each reporting period.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IAS 28.
3. Perform an analytical check on the balance in non-controlling interests as at 31 December 20x6.
4. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x6.
5. Perform an analytical check on consolidated retained earnings as at 31 December 20x6.

P6.13 Comprehensive problem set

Prism Co has "control" over Silver Co and "significant influence" over Amber Co. The financial statements for 20x6 are shown below. All figures are in dollars, except otherwise indicated.

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x6

	Prism Co	Silver Co	Amber Co
Profit before tax	$1,600,000	$1,260,000	$1,700,000
Tax	(320,000)	(264,600)	(357,000)

Profit after tax	$1,280,000	$ 995,400	$1,343,000
Dividends declared	(50,000)	(100,000)	(140,000)
Retained profit	$1,230,000	$ 895,400	$1,203,000
Retained earnings, 1 Jan 20x6	20,000	720,000	850,000
Retained earnings, 31 Dec 20x6	$2,050,000	$1,615,400	$2,053,000

Statement of Financial Position (Abridged)
As at 31 December 20x6

	Prism Co	Silver Co	Amber Co
Investment in Silver Co	$1,820,000		
Investment in Amber Co	860,000		
Amount due to Silver Co	(150,000)		
Amount due to Prism Co			$ (35,000)
Amount due from Prism Co		$ 150,000	
Amount due from Amber Co	35,000		
Other net assets	1,254,000	2,085,400	3,148,000
	$3,819,000	$2,235,400	$3,113,000
Share capital	$1,769,000	$ 620,000	$ 950,000
Retained earnings	2,050,000	1,615,400	2,053,000
Revaluation reserves			110,000
	$3,819,000	$2,235,400	$3,113,000

	Silver Co	Amber Co
Date of acquisition	1/1/20x3	1/1/20x4
Ownership interests of Prism Co	90%	30%
Shareholders' equity at acquisition date:		
Share capital	$ 620,000	$ 950,000
Retained earnings	520,000	670,000
Revaluation reserves		70,000
	$1,140,000	$1,690,000
Revaluation reserves as at 1 Jan 20x6		$ 120,000
Fair value of non-controlling interests as at date of acquisition	$ 180,000	

Fair and book values of identifiable net assets of each company as at date of acquisition:

	Silver Co		Amber Co	
	Book value	Fair value	Book value	Fair value
Fixed assets	$ 100,000	$ 350,000		
Provision for litigation loss				$ (250,000)
Other net assets	1,040,000	1,040,000	$1,690,000	1,690,000
Total net assets	$1,140,000	$1,390,000	$1,690,000	$1,440,000

Additional information:

(a) As at acquisition date, Silver Co had property and equipment that had remaining useful life of 20 years.

(b) During 20x4, Prism Co outsourced the development of specialized software to Silver Co. The project began on 1 March 20x4 and Silver Co had recognized revenue of $350,000 and profit of $70,000 during 20x4. The project was completed on 31 December 20x4. The expected useful life of the software was ten years from 1 January 20x5. Residual value was negligible. The project and progress billings accounts were closed on 31 December 20x4. On 31 December 20x5, new information arose with respect to the software:

Value in use	$300,000
Fair value less cost to sell	240,000

There was no change in the estimated remaining useful life

(c) During December 20x5, Prism Co sold excess inventory to Silver Co as follows:

Transfer price	$80,000
Original cost and carrying amount	$95,000
Percentage unsold as at 31 December 20x5	90%
Net realizable value of remaining inventory as at 31 December 20x5	$78,000
Percentage unsold as at 31 December 20x6	10%

(d) Expected litigation loss as of acquisition date was settled and expensed by Amber Co as follows:

During 20x5	$180,000
During 20x6	20,000

No further losses were expected after 20x6

(e) During 20x5, Amber Co sold inventory to Prism Co as follows:

page 414

Transfer price	$100,000
Original cost and carrying amount	$ 75,000
Percentage resold to third parties during 20x5	40%
Percentage resold to third parties during 20x6	50%
Percentage unsold as at 31 December 20x6	10%
Net realizable value of remaining inventory	$ 8,800

(f) Prism Co recognizes non-controlling interests at full fair value at acquisition date. Apply a tax rate of 20% on all appropriate adjustments, including fair value adjustments. The legal entities recognize impairment losses, if

any, at the end of each reporting period.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IAS 28.
3. Perform an analytical check on the balance in non-controlling interests as at 31 December 20x6.
4. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x6.
5. Perform an analytical check on consolidated retained earnings as at 31 December 20x6.

P6.14 Comprehensive problem set

P Co acquired interests in X Co and Z Co. Their current financial statements are shown below. All figures are in dollars, unless otherwise indicated.

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x2

	P Co	X Co	Z Co
Profit before tax	$2,800,000	$ 800,000	$ 900,000
Tax	(560,000)	(160,000)	(189,000)
Profit after tax	$2,240,000	$ 640,000	$ 711,000
Dividends declared	(120,000)	(40,000)	(100,000)
Retained profit	$2,120,000	$ 600,000	$ 611,000
Retained earnings, 1 Jan 20x2	1,000,000	520,000	300,000
Retained earnings, 31 Dec 20x2	$ 3,120,000	$1,120,000	$ 911,000

Statement of Financial Position (Abridged)
As at 31 December 20x2

	P Co	X Co	Z Co
Investment in X Co, at cost	$1,000,000		
Investment in Z Co, at cost	600,000		
Amount due to X Co	(100,000)		
Amount due to P Co			$ (320,000)
Amount due from P Co		$ 100,000	
Amount due from Z Co	320,000		
Other net assets	2,900,000	1,520,000	2,031,000
	$4,720,000	$1,620,000	$1,711,000
Share capital	$1,600,000	$ 500,000	$ 700,000
Retained earnings	3,120,000	1,120,000	911,000

Revaluation reserves			100,000
	$4,720,000	$1,620,000	$1,711,000

	X Co	Z Co
Date of acquisition	01/01/19X9	01/01/20X0
Percentage of voting rights acquired by P Co	90%	30%
Shareholders' equity at date of acquisition of voting rights:		
Share capital	$500,000	$ 700,000
Retained earnings	300,000	240,000
Other comprehensive income		80,000
	$800,000	$1,020,000
Other comprehensive income of Z Co as at 1 Jan 20x2		$ 150,000
Fair value of non-controlling interests as at date of acquisition	$100,000	

Fair and book values of identifiable net assets of each company as at date of acquisition:

	X Co		Z Co	
	Book value	Fair value	Book value	Fair value
Inventory	$100,000	$160,000		
Fixed assets			$ 100,000	$ 300,000
Other net assets	700,000	700,000	920,000	920,000
Total net assets	$800,000	$860,000	$1,020,000	$1,220,000

Additional information:

(a) The undervalued inventory of X Co was disposed off as follows:

Sold prior to 20x2	70%
Sold during 20x2	10%
Written off as lost during 20x2	10%
Unsold as at 31 December 20x2	10%
Net realizable value as at 31 December 20x2	$12,000

(b) The remaining useful life of the undervalued fixed assets of Z Co as at the date of acquisition was ten years, with negligible residual value.

(c) During 20x1, X Co sold inventory to P Co at an invoiced price of $200,000. The carrying amount and original cost of the inventory was $150,000. Subsequently:

Resold to third parties during 20x1	40%
Resold to third parties during 20x2	50%
Unsold as at 31 December 20x2	10%

(d) On 1 July 20x2, P Co sold equipment to X Co. The following information relates to the equipment at the date of transfer:

Transfer price	$ 70,000
Original cost	$120,000
Carrying amount (Net book value)	$ 90,000
Estimated remaining useful life	10 years
Fair value equipment	$ 80,000

(e) P Co, as landlord, rented an office building to X Co on a short-term basis. Rental income and rental expense were recognized by P Co and X Co as follows:

Rental for 20x2	$45,000

(f) P Co transferred equipment to Z Co at transfer price of $150,000. The net book value of the equipment was $120,000 on 1 July 20x1, the date of transfer. The remaining useful life of the equipment was five years from 1 July 20x1.

(g) Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. The legal entities recognize impairment losses as and when these arise.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x2, with narratives (brief headers) in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for the year ended 31 December 20x2, with narratives (brief headers) in accordance with IAS 28.
3. Perform an analytical check on the balance in non-controlling interests as at 31 December 20x2.
4. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x2.
5. Perform an analytical check on consolidated retained earnings as at 31 December 20x2.

P6.15 Comprehensive problem set

The financial statements of P Co, its subsidiary Silver Co, and its associate Ruby Co for the current year ended 31 December 20x6 are shown below.

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x6

	P Co	Silver Co	Ruby Co
Profit before tax	$2,500,000	$750,000	$1,200,000
Tax	(500,000)	(150,000)	(200,000)
Profit after tax	$2,000,000	$600,000	$1,000,000
Dividends declared	(120,000)	(40,000)	(83,000)
Profit retained	$1,880,000	$560,000	$ 917,000
Retained earnings, 1 Jan 20x6	300,000	300,000	420,000

Retained earnings, 31 Dec 20x6	$2,180,000	$860,000	$1,337,000

Statement of Financial Position (Abridged)
As at 31 December 20x6

	P Co	Silver Co	Ruby Co
Investment in Silver Co	$1,200,000		
Investment in Ruby Co	600,000		
Other net assets	1,580,000	$1,360,000	$2,037,000
Net assets	$3,380,000	$1,360,000	$2,037,000
Share capital	$1,200,000	$ 500,000	$ 700,000
Retained earnings	2,180,000	860,000	1,337,000
Shareholders' equity	$3,380,000	$1,360,000	$2,037,000

	Silver Co	Ruby Co
Date of acquisition	1 Jan 20x4	1 Jan 20x3
Percentage acquired by P Co	90%	30%
Shareholders' equity at date of acquisition:		
Share capital	$500,000	$700,000
Retained earnings	120,000	220,000
	$620,000	$920,000

Fair and book values of identifiable net assets of each company at date of acquisition:

	Silver Co		Ruby Co	
	Book value	Fair value	Book value	Fair value
Equity investments	$250,000	$280,000		
Intangible asset			$120,000	$ 200,000
Other net assets	370,000	370,000	800,000	800,000
Total net assets	$620,000	$650,000	$920,000	$1,000,000

Fair value of non-controlling interests as at acquisition date was $120,000.

Additional information relating to Silver:

(a) Sixty percent of the undervalued equity investments were sold on 1 July 20x6 for $160,000. The remaining 40% had a fair value of $105,000 as at 31 December 20x6. The investments are carried at fair value through profit or loss at the group level. However, the unquoted equity investments were carried at cost in Silver's books. It was only in 20x6 that Silver changed its accounting policy to carry the instruments at fair value through profit or loss.

(b) On 1 January 20x5, Silver Co transferred excess equipment to P Co at the invoiced price of $120,000 when the net book value of the equipment was $148,000. The fair value of the equipment at the date of transfer was $130,000. Original cost was $370,000. The original useful life was five years and the remaining useful life as at 1 January 20x5 was two years. Residual value was negligible.

(c) During July 20x6, P Co sold inventory to Silver Co at the transfer price of $320,000 at a profit of $20,000. Subsequently:

Percentage resold to third parties during 20x6	90%
Net realizable value of remaining inventory as at 31 Dec 20x6	$26,000

(d) As at 31 December 20x6, Silver Co owed P Co $200,000.

Additional information relating to Ruby:

(e) Intangible asset of Ruby Co had an infinite useful life. The cost model is used by Ruby Co and P Co. Subsequently, impairment reviews revealed the following:

Recoverable amount on 31 Dec 20x5	$160,000
Recoverable amount on 31 Dec 20x6	$140,000

(f) During November 20x5, P Co sold inventory to Ruby as follows:

Transfer price	$120,000
Original cost of inventory	$ 75,000
Percentage of transferred inventory resold to third parties:	
During 20x5	10%
During 20x6	70%

(g) On 1 January 20x5, P Co sold privately traded bonds to Ruby Co. P Co and the group classify these instruments as "loans and receivables" and use the amortized cost basis to measure the bonds.

Original date of purchase by P Co	1 Jan 20x4
Original purchase price paid by P Co	$ 950,000
Period to maturity from 1 January 20x4	5 years
Principal amount	$1,000,000
Coupon interest	2% p.a.
Original effective interest rate to P Co	3.09% p.a.
Transferred to Ruby Co at fair value on 1 Jan 20x5	$972,000
Effective interest rate to Ruby	2.75% p.a.

(h) On 9 October 20x6, Ruby Co sold inventory to P Co as follows:

Transfer price	$200,000
Original cost (book value)	$160,000
Fair value	$185,000
Percentage resold to third parties during 20x6	40%

Percentage unsold as at the end of the year	60%

(i) As at 31 December 20x6, Ruby Co owed P Co an amount of $600,000.

(j) Tax rate for both companies is 20% throughout. Recognize tax on fair value over book value differen-tials.

Required:

1. Prepare consolidation entries for P Co and the group for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IAS 27.
2. Perform an analytical check on the balance in non-controlling interests in Silver Co as at 31 December 20x6, showing the workings clearly.
3. Prepare equity accounting entries to show P Co's interest in Ruby Co for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IAS 28.
4. Perform an analytical check on the balance in investment in Ruby Co as at 31 December 20x6, showing the workings clearly.
5. Reconcile the net assets of P Co's group as at 31 December 20x6 as follows:
   (a) Method 1: Worksheet or Listing approach — list your CJE and EAJ that have an impact on net assets, and add them to the legal entity net assets of P Co and Silver Co.
   (b) Method 2: Analytical approach — remove or add only the year-end adjustments to the legal entity net assets of P Co and Silver Co to arrive at the economic entity net assets, as derived in Method 1.
6. Perform an analytical check on consolidated retained earnings as at 31 December 20x6, showing workings clearly.

P6.16 Comprehensive problem set

P Co acquired an interest in Sapphire Co and Amber Co. The financial statements for the current year ended 31 December 20x6 and other relevant details are shown below:

Income Statement and Partial Statement of Changes in Equity
For Year Ended 31 December 20x6

	P Co	Sapphire Co	Amber Co
Profit before tax	$3,200,000	$1,000,000	$820,000
Tax	(640,000)	(200,000)	(172,200)
Profit after tax	$2,560,000	$ 800,000	$647,800
Dividends declared	(140,000)	(86,000)	(78,000)
Profit retained	$2,420,000	$ 714,000	$569,800
Retained earnings, 1 Jan 20x6	630,000	670,000	400,000
Retained earnings, 31 Dec 20x6	$3,050,000	$1,384,000	$969,800

Statement of Financial Position (Abridged)
As at 31 December 20x6

	P Co	Sapphire Co	Amber Co
Investment in Sapphire Co	$2,000,000		

Investment in Amber Co	1,200,000		
Other net assets	1,050,000	$2,104,000	$1,619,800
Net assets	$4,250,000	$2,104,000	$1,619,800
Share capital	$1,200,000	$ 720,000	$ 450,000
Retained earnings	3,050,000	1,384,000	969,800
Revaluation reserves			200,000
Shareholders' equity	$4,250,000	$2,104,000	$1,619,800

	Sapphire Co	Amber Co
Date of acquisition	1/1/20x3	1/1/20x5
Percentage acquired by P Co	90%	30%
Shareholders' equity at date of acquisition:		
Share capital	$ 720,000	$450,000
Retained earnings	400,000	180,000
Revaluation reserves		50,000
	$1,120,000	$680,000

Revaluation reserves at 1 Jan 20x6 of Amber Co were $150,000

Fair and book values of identifiable net assets of each company at date of acquisition:

	Sapphire Co		Amber Co	
	Book value	Fair value	Book value	Fair value
Provision for litigation loss	($ 150,000)	($ 100,000)		
Inventory			$280,000	$320,000
Other net assets	1,270,000	1,270,000	400,000	400,000
Total net assets	$1,120,000	$1,170,000	$680,000	$720,000

Fair value of non-controlling interests as at acquisition date was $200,000.

Additional information relating to Sapphire:

(a) The probable maximum litigation loss recognized in the separate financial statements was higher than the expected value of the loss recognized in the consolidated financial statements. Final settlement during 20x5 was $120,000.

(b) On 1 July 20x6, Sapphire sold excess inventory to P Co as follows:

Fair value of inventory at transfer date	$240,000
Transfer price	$250,000
Original cost (Carrying amount)	$300,000

Percentage unsold as at 31 December 20x6	30%
Fair value (Net realizable value) as at 31 December 20x6	$ 81,000

(c) Sapphire was engaged as contractor by P Co for construction of its warehouse. The construction of the warehouse was completed on 1 July 20x6. The useful life of the warehouse was 14 years with minimal residual value. The final progress billing of $280,000 was issued in June 20x7 after the end of the defects rectification period. P Co did not recognize final progress billing until June 20x7. Details are as follows:

	31 Dec 20x5 Current	31 Dec 20x6 Current	31 Dec 20x6 Cumulative
Construction costs	$560,000	$600,000	$1,160,000
Construction profit	100,000	120,000	220,000
	$660,000	$720,000	$1,380,000
Progress billings	(500,000)	(600,000)	(1,100,000)
Contract asset	$160,000	$120,000	$ 280,000
Construction revenue	$660,000	$720,000	
Construction costs	(560,000)	(600,000)	
Construction profit	$100,000	$120,000	

(d) Amount due from P Co to Sapphire Co as at 31 December 20x6 was $480,000.

Additional information relating to Amber Co:

(e) The undervalued inventory of Amber Co was disposed off as follows:

Sold to third parties during 20x5	35%
Sold to third parties during 20x6	50%
Remaining in inventory	15%

(f) On 1 July 20x5, P Co transferred equipment to Amber Co at a transfer price of $380,000. The original cost of the equipment was $420,000 and the net book value was $350,000. The original useful life of the equipment was six years while its remaining useful life as at 1 July 20x5 was five years.

(g) During the year ended 31 December 20x5, Amber Co provided architectural services to P Co with respect to the construction of the warehouse. Amber earned the following income:

Architect's fees	$860,000
Project costs	(720,000)
Net income from service provided	$140,000

The building was completed on 1 July 20x6. P Co depreciated the building over the estimated useful life of 14 years. Residual value was negligible.

(h) During 20x5, Amber sold excess inventory to P Co as follows:

Transfer price	$150,000
Fair value	$110,000
Original cost (Carrying amount)	$130,000
Percentage resold to third parties:	
During 20x5	50%
During 20x6	30%
Fair value of remaining inventory as at 31 Dec 20x5	$ 60,000

Market prices remain stable thereafter

(i) As at 31 December 20x5, amount owing from P Co to Amber Co was $50,000.

(j) Tax rate for both companies is 20% throughout. Recognize tax on fair value over book value differentials.

Required:

1. Prepare consolidation entries for P Co and the group for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.
2. Perform an analytical check on the balance in non-controlling interests in Sapphire Co as at 31 December 20x6, showing the workings clearly.
3. Prepare equity accounting entries to show P Co's interest in Amber Co for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IAS 28.
4. Perform an analytical check on the balance in investment in Amber Co as at 31 December 20x6, showing the workings clearly.
5. Perform an analytical check on consolidated retained earnings as at 31 December 20x6, showing workings clearly.

P6.17 Equity Method in Investor's Financial Statements

P Co acquired interests in Z Co. The current financial statements are shown below. All figures are in $ unless as otherwise indicated.

Income Statement and Partial Statement of Changes in Equity for the Year Ended 31 December 20x4

	P Co	Z Co
Profit before tax	2,800,000	900,000
Tax	(560,000)	(189,000)
Profit after tax	2,240,000	711,000
Dividends declared	(120,000)	(100,000)
Profit retained	2,120,000	611,000
Retained earnings, 1 Jan 20x4	1,000,000	300,000
Retained earnings, 31 Dec 20x4	3,120,000	911,000

Abridged Statement of Financial Position as at 31 December 20x4

	P Co	Z Co
Investment in Z Co, at cost	600,000	
Amount due to P Co		(320,000)
Amount due from Z Co	320,000	
Other net assets	3,800,000	2,031,000
	4,720,000	1,711,000
Share capital	1,600,000	700,000
Retained earnings	3,120,000	911,000
Revaluation reserves		100,000
	4,720,000	1,711,000

	Z Co
Date of investment	01/01/20x2
Percentage of voting rights acquired by P Co	30%
Shareholders' equity at date of investment	
Share capital	700,000
Retained earnings	200,000
Revaluation reserves	110,000
	1,010,000
Revaluation reserves of Z Co as at 1 Jan	140,000

Fair and book values of identifiable net assets of Z Co as at date of acquisition

	Book value	Fair value
Inventory	180,000	200,000
Other net assets	830,000	830,000
Total net asset	1,010,000	1,030,000

Additional information:

1. The undervalued inventory of Z Co was disposed as follows:

Sold during 20x2	40%
Sold during 20x3	20%
Sold during 20x4	25%
Damaged in flood during 20x4	5%
Net realizable value at 31 December 20x4	$6,000

2. P Co provided loans to Z Co during the first half of 20x3 for construction of equipment.

Interest income from Z Co

For the first half of 20x3	$60,000
For the second half of 20x3	$30,000
Interest expense incurred by P Co to finance the loan to Z Co	
For the first half of 20x3	$40,000
For the second half of 20x3	$20,000

Z Co applied correctly the requirements of IAS 23 *Borrowing Costs*. Z Co commenced the depreciation of the equipment over a useful life of five years from 1 July 20x3.

3. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. P Co and Z Co recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare equity accounting entries for the year ended 31 December 20x4.
2. Perform an analytical check of the balance of the investment in associate account as at 31 December 20x4.
3. Ignore (1) and (2). P Co applies the equity method to determine the investment in associate in its separate financial statements from date of initial investment.
   a. Determine the investment in associate balance as at 31 December 20x3.
   b. Prepare the journal entries to apply the equity method in the current year ended 31 December 20x4.
   c. Compare the investment balance as at 31 December 20x4 derived from Q3(a) and Q3(b) with Q2.

P6.18 Equity Method in Investor's Financial Statements

P Co acquired interests in Amber Co. The current financial statements are shown below. All figures are in dollars, unless as otherwise indicated.

Income Statement for Year Ended 31 December 20x6

	P Co	Amber Co
Profit before tax	3,000,000	900,000
Tax	(600,000)	(200,000)
Profit after tax	2,400,000	700,000
Dividends declared	(220,000)	(90,000)
Profit retained	2,180,000	610,000
Retained earnings, 1 Jan 20x6	5,500,000	720,000
Retained earnings, 31 Dec 20x6	7,680,000	1,330,000

Abridged Statement of Financial Position as at 31 December 20x6

	P Co	Amber Co
Investment in Amber Co	1,100,000	
Other net assets	9,080,000	2,050,000
	10,180,000	2,050,000

Share capital	2,500,000	500,000
Retained earnings	7,680,000	1,330,000
Revaluation reserves		220,000
	10,180,000	2,050,000

	Amber Co
Date of investment	1 Jan 20x5
Percentage acquired by P Co	30%
Shareholders' equity at date of acquisition	
Share capital	500,000
Retained earnings	700,000
Revaluation reserves	80,000
	1,280,000
Revaluation reserves at 1 Jan 20x6	100,000

Fair and book values of identifiable net assets of Amber Co at investment date

	Amber Co →	
	Book value	Fair value
Intangible asset		800,000
Other net assets	1,280,000	1,280,000
Total net assets	1,280,000	2,080,000

Additional information:

1. The intangible asset of Amber Co had remaining useful life of ten years at acquisition date. At the year-end impairment review, the recoverable amount of the intangible asset showed the following recoverable amounts:

As at 31 December 20x5	$600,000
As at 31 December 20x6	$630,000

2. On 1 July 20x5, P Co transferred fixed assets to Amber Co at a transfer price of $500,000. The original cost of the fixed asset was $520,000 while the net book value was $420,000. The original useful life was five years. The remaining useful life as at 1 July 20x5 was four years.
3. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Amber Co recognizes impairment losses, if any, at the financial year-end.

Required:

1. Prepare equity accounting entries for the year ended 31 December 20x6.
2. Perform an analytical check of the balance of the investment in associate account as at 31 December 20x6.
3. Ignore (1) and (2). P Co applies the equity method to determine the investment in associate in its separate financial statements from date of initial investment.

a. Determine the investment in associate balance as at 31 December 20x5.
b. Prepare the journal entries to apply the equity method in the current year ended 31 December 20x6.
c. Compare the investment balance as at 31 December 20x6 derived from Q3(a) and Q3(b) with Q2.

P6.19 Joint Operations

P Co and T Co formed a special purpose entity Z with the sole purpose of acquiring its output of extracted minerals. P Co and T Co agreed on the contractual sharing of power that required unanimous consent on all strategic activities of Z. P Co and T Co provided financial guarantees to lenders of Z. By virtue of its rights to the assets of Z and its obligations for the liabilities of Z, P Co is a joint operator of Z and recognizes its share of the assets and liabilities of Z on its statement of financial position. 20x5 is the first year of operations for Z.

Under the agreement, the sharing ratios are as follows:

	P Co	T Co
Revenues	50%	50%
Expenses including taxes	50%	50%
Fixed assets	80%	20%
Inventory	0%	100%
Account receivables	50%	50%
Cash	50%	50%
Current liabilities	80%	20%
Long term liabilities	50%	50%

Management fee is paid to P Co for being the manager on the project. Management fee is the difference between the share of equity and the share of net assets attributable to P Co. Ignore tax effects on management fees.

Prior to the finalization of accounts, the draft financial statements of P Co and Z for 20x5 are shown below:

Income Statement and Statement of Changes in Equity (extract)
for the year ending 31 December 20x5

	P Co (without Z)	Z
Revenues	6,000,000	3,000,000
Expenses	(4,000,000)	(2,000,000)
Profit before tax	2,000,000	1,000,000
Tax	(400,000)	(200,000)
Profit after tax	1,600,000	800,000
Dividends	(300,000)	
Profit retained	1,300,000	800,000

Retained earnings, 1 Jan 20x5	1,200,000	0
Retained earnings, 31 Dec 20x5	2,500,000	800,000

Statement of Financial Position as at 31 December 20x5

	P Co (without Z)	Z
Fixed assets, net book value	3,500,000	1,900,000
Other long-term assets	500,000	
Inventory	800,000	300,000
Accounts receivable	520,000	400,000
Cash	100,000	20,000
	5,420,000	2,620,000
Current liabilities	420,000	1,360,000
Long-term liabilities	500,000	460,000
Share capital	2,000,000	0
Retained earnings	2,500,000	800,000
	5,420,000	2,620,000

Required:

1. Prepare the journal entry to record the effects of the joint operations on P Co's financial statements during 20x5.
2. Show the financial statements of P Co for the year ended 31 December 20x5 after incorporating the effects of the joint operations.

P6.20 Joint Venture

Refer to P6.19. If the joint arrangement is a joint venture with ownership interests of 50% each in Z, show the equity accounting entries and the final balance in the Investment in Z for the year ended 31 December 20x5.

P6.21 Comprehensive problem set

P Co acquired interests in Silver Co and Amber Co. Their current financial statements are shown below. All figures are in $ unless as otherwise indicated.

Income Statement and Partial Statement of Changes in Equity

	Prism Co	Silver Co	Amber Co
Profit before tax	1,346,000	1,250,000	1,650,000
Tax	(269,200)	(262,500)	(330,000)
Profit after tax	1,076,800	987,500	1,320,000
Dividends declared	(50,000)	(100,000)	(130,000)
Retained profit	1,026,800	887,500	1,190,000
Retained earnings, 1 Jan 20x6	620,000	700,000	543,000
Retained earnings, 31 Dec 20x6	1,646,800	1,587,500	1,733,000

Abridged Statement of Financial Position as at 31 December 20x6

	Prism Co	Silver Co	Amber Co
Investment in Silver Co	1,800,000		
Investment in Amber Co	800,000		
Amount due from Silver Co	1,500,000		
Amount due to Prism Co		(1,500,000)	(35,000)
Amount due from Amber Co	35,000		
Other net assets (liabilities)	(719,200)	3,827,500	2,718,000
	3,415,800	2,327,500	2,683,000
Share capital	1,769,000	620,000	950,000
Retained earnings	1,646,800	1,587,500	1,733,000
Revaluation reserves		120,000	
	3,415,800	2,327,500	2,683,000

	Silver Co	Amber Co
Date of initial investment	1 Jan 20x3	1 Jan 20x4
Ownership interests of Prism Co	90%	30%
Shareholders' equity at acquisition date		
Share capital	620,000	950,000
Retained earnings	420,000	450,000
Revaluation reserves	70,000	
	1,110,000	1,400,000
Revaluation reserves of Silver as at 1 Jan 20x6	150,000	
Fair value of non-controlling interests as at date of acquisition	180,000	

Fair and book values of identifiable net assets of each company as at date of acquisition

	Silver Co →		Amber Co →	
	Book value	Fair value	Book value	Fair value
Fixed assets	120,000	200,000		
Provision for litigation loss				(250,000)
Other net assets	990,000	990,000	1,400,000	1,400,000
Total net assets	1,110,000	1,190,000	1,400,000	1,150,000

Additional information:

(a) Remaining useful life of undervalued fixed assets of Silver Co as at 1 January 20x3 was 20 years. Residual value was negligible.

(b) On 31 December 20x4, Silver Co completed a development project for Prism Co to develop a new vaccine. The two-year development project was successful and the useful life of the vaccine as at 1 January 20x5 was

10 years. Silver Co recognized profit on the project as follows:

Transfer price charged to Prism Co		$1,000,000
Costs incurred by Silver Co:		
Scientific manpower costs	$500,000	
Laboratory costs	$120,000	
Capitalized interest on loans from Prism	$ 20,000	
		$ 640,000
Profit on the project		$ 360,000

(c) Prism Co finances the development and operations of Silver Co by borrowing from external banks and lending to Silver Co. Interest on external loans to finance the loan from Prism to Silver Co for the development project in (2) above was $30,000 in 20x4 (see table below). After the completion of the development project, Prism Co continues to lend to Silver Co to finance its operations in 20x5 and 20x6.

	20x4	20x5	20x6
Interest expense on external loans incurred by Prism to finance loan to Silver	$30,000	$40,000	$32,000
Interest on internal loans charged to Silver by P Co	$20,000	$38,000	$30,000

(d) Amber Co expensed the following amounts relating to the litigation loss:

20x5	$180,000
20x6	$20,000

No further losses were expected after 20x6.

(e) Amber Co sold excess inventory to Prism Co during 20x5 at transfer price of $120,000 when the carrying amount was $80,000. Subsequently:

Percentage resold to third parties during 20x5	40%
Percentage resold to third parties during 20x6	50%
Percentage unsold as at 31 Dec 20x6	10%
Net realizable value of remaining inventory	$10,000

(f) Assume a tax rate of 20%.

(g) Non-controlling interests are measured at full fair value at acquisition date.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IAS 28.
3. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6.
4. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x6.
5. Perform an analytical check on the consolidated retained earnings as at 31 December 20x6.

P6.22 Comprehensive problem set

Income Statement and Partial Statement of Changes in Equity for the Year Ended 31 December 20x6

	P Co	Silver Co	Amber Co
Profit before tax	3,000,000	2,000,000	900,000
Tax	(600,000)	(400,000)	(200,000)
Profit after tax	2,400,000	1,600,000	700,000
Dividends declared	(220,000)	(100,000)	(90,000)
Profit retained	2,180,000	1,500,000	610,000
Retained earnings, 1 Jan 20x6	5,500,000	1,600,000	720,000
Retained earnings, 31 Dec 20x6	7,680,000	3,100,000	1,330,000

Abridged Statement of Financial Position as at 31 December 20x6

	P Co	Silver Co	Amber Co
Investment in Silver Co	3,200,000		
Investment in Amber Co	1,100,000		
Other net assets	5,880,000	4,100,000	2,050,000
	10,180,000	4,100,000	2,050,000
Share capital	2,500,000	1,000,000	500,000
Retained earnings	7,680,000	3,100,000	1,330,000
Revaluation reserves			220,000
	10,180,000	4,100,000	2,050,000

	Silver Co	Amber Co
Date of acquisition	1 Jan 20x3	1 Jan 20x5
Percentage acquired by P Co	90%	30%
Shareholders' equity at date of acquisition		
Share capital	1,000,000	500,000
Retained earnings	800,000	700,000
Revaluation reserves		80,000
	1,800,000	1,280,000
Revaluation reserves as at 1 Jan 20x6		100,000

Fair and book values of identifiable net assets of each company at date of acquisition

	Silver Co →		Amber Co →	
	Book value	Fair value	Book value	Fair value
Inventory	220,000	250,000		
Intangible asset				800,000
Other net assets	1,580,000	1,580,000	1,280,000	1,280,000
Total net assets	1,800,000	1,830,000	1,280,000	2,080,000

Fair value of non-controlling interests of Silver Co at acquisition date was $320,000.

Additional information:

(a) The undervalued inventory was disposed as follows:

70% was sold to third party customers by 31 December 20x5

30% remained unsold at 31 December 20x6

The fair value of inventory as at 31 December 20x6 was $66,000

(b) The intangible asset of Amber Co had remaining useful life of ten years as at acquisition date. At the year-end impairment review, the recoverable amount of the intangible asset showed the following recoverable amounts:

page 432

As at 31 December 20x5	$600,000
As at 31 December 20x6	$630,000

(c) Silver Co provided construction services to P Co in relation to the construction of an office building of P Co. Applying the requirements of IFRS 15 *Revenue from Contracts with Customers*, Silver Co used the percentage of completion method to recognize income. The construction of the building was completed on 1 October 20x6 and was depreciated over a 20 year period from 1 October 20x6. The contract asset is closed on 1 October 20x6. The relevant information was as follows:

	31 Dec 20x5	31 Dec 20x6
Construction revenue for year	600,000	800,000
Construction costs for year	(400,000)	(700,000)
Construction profit for year	200,000	100,000
Cumulative progress billings	500,000	1,400,000

(d) In conjunction with the same building project in (c) above, P Co engaged Amber Co to act as a sub-contractor on the piling works. Amber Co completed the project on 30 June 20x5. Details are as follows:

Sub-contractors' annual construction revenue of Amber Co earned from P Co

	31 December 20x5
Construction revenue	$500,000
Construction costs	($400,000)
Construction profit	$100,000

(e) All intercompany balances were settled before the year-end. Assume that all companies reviewed assets for impairment losses at the financial year-end.

(f) Tax rate is 20%. Assume that fair value over book value differentials will lead to future taxable income.

Required:

1. Prepare consolidation entries relevant to Silver Co for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for Amber Co for the year ended 31 December 20x6, with narratives (brief headers) and workings in accordance with IAS 28.
3. Perform an analytical check on the balance of non-controlling interests in Silver Co as at 31 December 20x6, showing the workings clearly.
4. Perform an analytical check of the balance in investment in Amber Co as at 31 December 20x6, showing the workings clearly.
5. Perform an analytical check on the balance of consolidated retained earnings as at 31 December 20x6, showing the workings clearly. page 433
6. With respect to the construction work conducted by Silver for Prism (refer additional information c), prepare the consolidation adjusting entries to adjust or eliminate items relating to this project for the year ended 31 December 20x5.

P6.23 Comprehensive problem set

P Co acquired interests in Silver Co and Amber Co. Their current financial statements are shown below. All figures are in $ unless as otherwise indicated.

Income Statement and Partial Statement of Changes in Equity for the Year Ended 31 December 20x6

	Prism Co	Silver Co	Amber Co
Profit before tax	1,320,000	1,150,000	1,360,000
Tax	(264,000)	(230,000)	(272,000)
Profit after tax	1,056,000	920,000	1,088,000
Dividends declared	(50,000)	(75,000)	(100,000)
Retained profit	1,006,000	845,000	988,000
Retained earnings, 1 Jan 20x6	500,000	480,000	510,000
Retained earnings, 31 Dec 20x6	1,506,000	1,325,000	1,498,000

Abridged Statement of Financial Position as at 31 December 20x6

	Prism Co	Silver Co	Amber Co
Investment in Silver Co	1,650,000		
Investment in Amber Co	800,000		
Amount due to Prism Co		(150,000)	(35,000)
Amount due from Silver Co	150,000		
Amount due from Amber Co	35,000		
Other net assets	640,000	2,195,000	2,433,000
	3,275,000	2,045,000	2,398,000
Share capital	1,769,000	600,000	900,000
Retained earnings	1,506,000	1,325,000	1,498,000

Revaluation reserves		120,000	
	3,275,000	2,045,000	2,398,000

	Silver Co	Amber Co
Date of acquisition	1 Jan 20x3	1 Jan 20x4
Ownership interests of Prism Co	90%	30%
Shareholders' equity at acquisition date		
Share capital	600,000	900,000
Retained earnings	320,000	400,000
Revaluation reserves	65,000	
	985,000	1,300,000
Revaluation reserves of Silver as at 1 Jan 20x6	145,000	
Fair value of non-controlling interests of Silver as at date of acquisition	165,000	

Fair and book values of identifiable net assets of each company as at date of acquisition were as follows:

	Silver Co →		Amber Co →	
	Book value	Fair value	Book value	Fair value
Fixed assets	150,000	220,000		
Intangible asset				150,000
Other net assets	835,000	835,000	1,300,000	1,300,000
Total net assets	985,000	1,055,000	1,300,000	1,450,000

Additional information:

(a) Remaining useful life of undervalued fixed assets of Silver Co as at 1 January 20x3 was 20 years. Residual value was negligible. Recoverable amount of the fixed assets as at 31 December 20x6 was $135,000.

(b) On 1 July 20x5, Silver Co transferred inventory to Prism Co as follows:

Transfer price	$160,000
Original cost (book value)	$135,000

Sixty percent of the inventory was unsold as at 31 December 20x5 and 15% of the original batch was unsold as at 31 December 20x6.

(c) From 1 July 20x5 to 30 June 20x6, Prism Co constructed an extension of a building for Silver Co at total contract price of $600,000. Prism Co recognized the following revenue and expense from the contract with Silver Co as follows:

	1 July 20x5 to 31 Dec 20x5	1 Jan 20x6 to 30 June 20x6
Contract revenue	250,000	350,000
Contract costs	220,000	270,000

Contract profit	30,000	80,000
Current progress billings	240,000	360,000

The contract was completed on 30 June 20x6 and Silver had recognized the progress billings.

The extension of the building had a useful life of 20 years from 1 July 20x6.

(d) The intangible asset of Amber Co had an estimated useful life of 30 years as at date of investment by Prism Co.

page 435

(e) Amber Co sold excess inventory to Prism Co during 20x6 at transfer price of $100,000 when the carrying amount (original cost) was $120,000 and the fair value was $110,000.

Subsequently:

Percentage re-sold to third parties during 20x6	60%
Percentage unsold as at 31 December 20x6	40%

(f) Assume a tax rate of 20%.

(g) Non-controlling interests are measured at full fair value at acquisition date.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IAS 28.
3. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6.
4. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x6.
5. Perform an analytical check on the consolidated retained earnings as at 31 December 20x6.

P6.24 Comprehensive problem set

P Co acquired interests in Silver Co and Amber Co. Their current financial statements are shown below. All figures are in $ unless as otherwise indicated.

Income Statement and Partial Statement of Changes in Equity for the Year Ended 31 December 20x6

	Prism Co	Silver Co	Amber Co
Profit before tax	1,250,000	1,200,000	1,450,000
Tax	(250,000)	(240,000)	(290,000)
Profit after tax	1,000,000	960,000	1,160,000
Dividends declared	(50,000)	(68,000)	(130,000)
Retained profit	950,000	892,000	1,030,000
Retained earnings, 1 Jan 20x6	540,000	520,000	490,000
Retained earnings, 31 Dec 20x6	1,490,000	1,412,000	1,520,000

Abridged Statement of Financial Position as at 31 December 20x6

	Prism Co	Silver Co	Amber Co
Investment in Silver Co	1,800,000		
Investment in Amber Co	800,000		
Amount due to Prism Co		(150,000)	(35,000)
Amount due from Silver Co	150,000		
Amount due from Amber Co	35,000		
Other net assets	474,000	2,302,000	2,505,000
	3,259,000	2,152,000	2,470,000
Share capital	1,769,000	620,000	950,000
Retained earnings	1,490,000	1,412,000	1,520,000
Revaluation reserves		120,000	
	3,259,000	2,152,000	2,470,000

	Silver Co	Amber Co
Date of acquisition	1 Jan 20x3	1 Jan 20x4
Ownership interests of Prism Co	90%	30%
Shareholders' equity at acquisition date		
Share capital	620,000	950,000
Retained earnings	348,000	410,000
Revaluation reserves	70,000	
	1,038,000	1,360,000
Revaluation reserves of Silver as at 1 Jan 20x6	150,000	
Fair value of non-controlling interests of Silver as at date of acquisition	180,000	

Fair and book values of identifiable net assets of each company as at date of acquisition were as follows:

	Silver Co →		Amber Co →	
	Book value	Fair value	Book value	Fair value
Fixed assets	160,000	200,000		
Intangible assets				250,000
Other net assets	878,000	878,000	1,360,000	1,360,000
Total net assets	1,038,000	1,078,000	1,360,000	1,610,000

Additional information:

(a) Remaining useful life of undervalued fixed assets of Silver Co as at 1 January 20x3 was 20 years. The useful life was changed to 10 years on 1 January 20x6. Residual value was negligible.

(b) On 1 July 20x5, Silver Co transferred inventory to Prism Co as follows:

Transfer price	$100,000

Original cost (book value)	$80,000

Seventy percent of the inventory was unsold as at 31 December 20x5 and 20% of the original batch was unsold as at 31 December 20x6.

(c) From 1 July 20x5 to 30 June 20x6, Prism Co made a loan to Silver Co to finance the construction of an extension of a building of Silver Co. The interest on the loan was properly capitalized by Silver Co in accordance with IAS 23 *Borrowing Costs*. Prism obtained funding for the loan from an unrelated bank. Prism Co recognized interest income and interest expense as follows:

	1 July 20x5 to 31 Dec 20x5	1 Jan 20x6 to 30 June 20x6
Interest income from Silver	$300,000	$200,000
Interest expense incurred on bank loan	205,000	140,000
Differential	$95,000	$60,000

The construction was completed on 30 June 20x6.

The extension of the building had a useful life of 20 years from 1 July 20x6. The loans were repaid by Silver in full on 30 June 20x6.

(d) The intangible asset of Amber Co had an infinite useful life. Impairment reviews on the following dates show the recoverable amount of the asset as follows

31 Dec 20x6	$200,000

(e) Amber Co sold inventory to Prism Co during 20x6 at transfer price of $145,000 when the carrying amount was $125,000. Subsequently:

Percentage resold to third parties during 20x6	40%
Percentage unsold as at 31 December 20x6	60%

(f) Assume a tax rate of 20%.

(g) Non-controlling interests are measured at full fair value at acquisition date.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IAS 28.
3. Perform an analytical check on the balance of non-controlling interests as at 31 December 20x6.
4. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x6.

page 438

5. Perform an analytical check on the consolidated retained earnings as at 31 December 20x6.

P6.25 Comprehensive problem set

P Co acquired interests in X Co and Z Co. Their current financial statements are shown below. All figures are in $ unless as otherwise indicated.

Income Statement and Partial Statement of Changes in Equity for the Year Ended 31 December

20x6

	P Co	X Co	Z Co
Profit before tax	2,800,000	800,000	900,000
Tax	(560,000)	(160,000)	(189,000)
Profit after tax	2,240,000	640,000	711,000
Dividends declared	(120,000)	(40,000)	(100,000)
Retained profit	2,120,000	600,000	611,000
Retained earnings, 1 Jan 20x6	1,000,000	520,000	300,000
Retained earnings, 31 Dec 20x6	3,120,000	1,120,000	911,000

Abridged Statement of Financial Position as at 31 December 20x6

	P Co	X Co	Z Co
Investment in X Co, at cost	1,000,000		
Investment in Z Co, at cost	600,000		
Amount due from X Co	1,000,000		
Amount due to P Co		(1,000,000)	(320,000)
Amount due from Z Co	320,000		
Other net assets	1,800,000	2,620,000	2,031,000
	4,720,000	1,620,000	1,711,000
Share capital	1,600,000	500,000	700,000
Retained earnings	3,120,000	1,120,000	911,000
Revaluation reserves			100,000
	4,720,000	1,620,000	1,711,000

	X Co	Z Co
Date of acquisition	1 Jan 20x3	1 Jan 20x4
Percentage of voting rights acquired by P Co	90%	30%
Shareholders' equity at date of acquisition of voting rights		
Share capital	500,000	700,000
Retained earnings	350,000	200,000
Revaluation reserves		110,000
	850,000	1,010,000
Revaluation reserves of Z Co as at 1 Jan 20x6		140,000
Fair value of non-controlling interests as at date of acquisition	100,000	

Fair and book values of identifiable net assets of each company as at date of acquisition

	X Co →		Z Co →	
	Book value	Fair value	Book value	Fair value
Intangible asset	250,000	300,000		
Inventory			180,000	200,000
Other net assets	600,000	600,000	830,000	830,000
Total net assets	850,000	900,000	1,010,000	1,030,000

Additional information:

(a) The remaining useful life of the intangible asset of X Co as at the date of acquisition was five years, with negligible residual value. The recoverable amount of the intangible asset at the following dates was as follows:

31 December 20x5	$112,000
31 December 20x6	$70,000

(b) The undervalued inventory of Z Co was disposed as follows:

Sold during 20x4 and 20x5	60%
Written off as lost during 20x5	10%
Sold during 20x6	20%
Remaining balance at 31 December 20x6	10%

(c) On 10 November 20x5, X Co sold inventory to P Co at an invoiced price of $90,000.

The carrying amount and original cost of the inventory was $65,000. Subsequently:

Resold to third parties during 20x5	60%
Resold to third parties during 20x6	30%
Unsold as at 31 December 20x6	10%

(d) P Co provided loans to X Co during the first half of 20x5 for construction of equipment and subsequently to finance its operations.

Interest income from X Co recognized by P Co was as follows:

For the first half of 20x5	$50,000
For the second half of 20x5	$45,000
For the whole year of 20x6	$90,000

Interest expense on an external loan incurred by P Co to finance the loan to X Co was as follows:

For the first half of 20x5	$35,000
For the second half of 20x5	$40,000
For the whole year of 20x6	$100,000

X Co applied correctly the requirements of IAS 23 *Borrowing Costs*. The equipment was available for use on 1 July 20x5. X Co commenced the depreciation of the equipment over a useful life of five years from 1 July 20x5. Residual value was negligible.

(e) On 1 July 20x6, P Co sold equipment to Z Co at a transfer price of $120,000.

At the date of the transfer, the following relates to the equipment:

Original cost	$110,000
Carrying amount (net book value)	$90,000
Remaining useful life on 1 July 20x6	10 years

(f) Apply a tax rate of 20% on all appropriate adjustments including fair value adjustments. Non-controlling interests are recognized at full fair value on acquisition date. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare consolidation adjusting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IFRS 3 and IFRS 10.
2. Prepare equity accounting entries for the year ended 31 December 20x6, with narratives (brief headers) in accordance with IAS 28.
3. Perform an analytical check on the balance in non-controlling interests as at 31 December 20x6.
4. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x6.
5. Perform an analytical check on the consolidated retained earnings as at 31 December 20x6.

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[1] Appendix A, IFRS 10.

[2] Paragraph 7, IFRS 11.

[3] Paragraph 6, IAS 28.

[4] Paragraph 5, IAS 28.

[5] The Board, 2003, *International Financial Reporting Standard 5: Non-current Assets Held for Sale and Discontinued Operations,* IFRS Foundation London, United Kingdom.

[6] However, there is a difference in treatment with respect to unrealized profit from a downstream sale. Under the equity method, IAS 28 paragraph 28 allows the investor to recognize the unrelated investor's interest in the unrealized profit from a downstream sale. However, under IFRS 10, no provision is made whether a parent can recognize an unrelated investor's interest in the unrealized profit. Hence, unrealized profit from a downstream sale is eliminated in full in consolidation rather than proportionately as in the equity method.

[7] Impairment tests under IAS 36 *Impairment of Assets* is performed for the investment balance as a whole rather than goodwill as a stand-alone asset. However, we assume that impairment loss, if any, is against goodwill first, in our calculations.

[8] An alternative approach is to proportionally reduce the investor's revenue and cost of sales by the investor's share of downstream sales.

[9] There is a difference in effect between consolidation and equity accounting with respect to the treatment of unrealized profit from downstream sales. In consolidation, unrealized profit from downstream sales is deemed to have no effect on non-controlling interests. Hence, unrealized profit from downstream sales is wholly unrecognized. In equity accounting, unrealized profit from downstream sales is recognized to the extent of the unrelated investors' interests in the associate in accordance with IAS 28 paragraph 28. In a downstream sale, it is as if the investor is making a sale to the other owners of the associate, and is therefore entitled to recognize the profit in proportion with the unrelated investors' interests in the associate.

[10] Goodwill impairment is pro-rated to majority and non-controlling interests in proportion to ownership interests in accordance with IAS 36 *Impairment of Assets*.

[11] IFRS 11 paragraph 15.

[12] IFRS 11 Appendix B, paragraph B16.

[13] IFRS 11 Appendix B, paragraph B19.

[14] The principles and application examples are explained in IFRS 11, Appendix B paragraphs B7−B11.

[15] IFRS 11 Appendix B, Application Example 2.

[16] IFRS 11 Appendix B, Application Example 3.

[17] IFRS 11, paragraph 20.

[18] Paragraph 25 of IAS 16 states that an exchange transaction has commercial substance if: (a) the configuration (risk, timing and amount) of the cash flows of the asset received differs from the configuration of the cash flows of the asset transferred; or (b) the entity-specific value of the portion of the entity's operations affected by the transaction changes as a result of the exchange; and (c) the difference in (a) or (b) is significant relative to the fair value of the assets exchanged. The result of these analyzes may be clear without an entity having to perform detailed calculations.

[19] The Amendments to IFRS 10 and IAS 28 is issued and are available for adoption by entities but the previous effective date of 1 January 2016 has been deferred by IASB. The transition provisions require prospective application of these amendments.

[20] Such transaction can either be a sale or contribution to the associate.

[21] B98 of IFRS 10 requires a parent who loses control of a subsidiary to (1) derecognize the assets (including any goodwill) and liabilities of the subsidiary at their carrying amounts at the date when control is lost; and the carrying amount of any non-controlling interests in the former subsidiary at the date when control is lost (including any components of other comprehensive income attributable to them), (2) recognize the fair value of the consideration received, if any, distribution of shares of the subsidiary to owners in their capacity as owners and any investment retained in the former subsidiary at its fair value at the date when control is lost, to (3) reclassify to profit or loss, or transfer directly to retained earnings if required by other IFRS Standards, the amounts recognized in other comprehensive income in relation to the subsidiary on the basis described in paragraph B99 and (d) recognize any resulting difference as a gain or loss in profit or loss attributable to the parent. B99 to IFRS 10 requires the parent to account for all amounts previously recognized in other comprehensive income in relation to that subsidiary on the same basis as would be required if the parent had directly disposed of the related assets or liabilities.

[22] The rationale is because in this case, the requirements of IAS 39/IFRS 9 apply for the partial gain or loss and not IAS 28.

[23] Carrying value of net assets of subsidiary at date when control is lost = Original cost of investment in subsidiary (in parent's books) + post-acquisition profits of subsidiary up to date where control is lost.

CHAPTER

7

Group Reporting VI

Complex Consolidation Issues

LEARNING OBJECTIVES

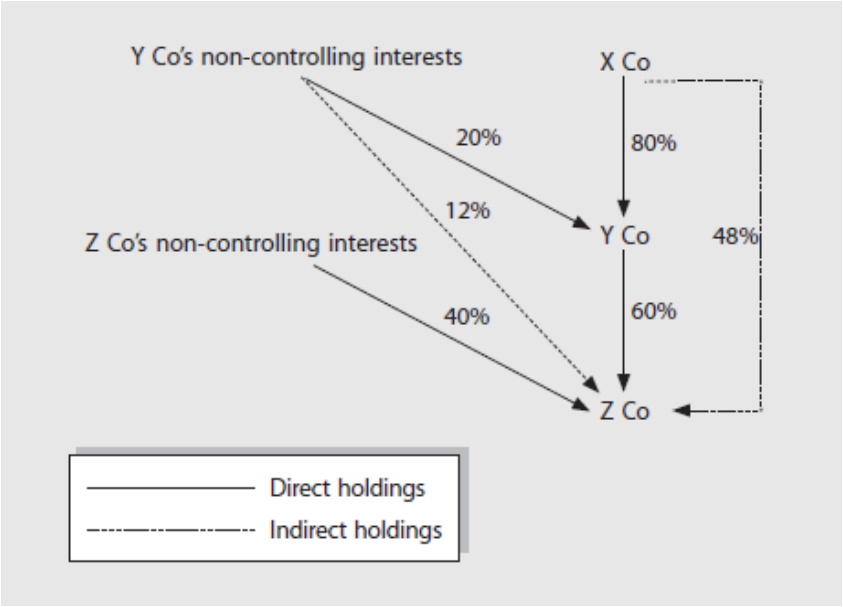
After reading this chapter, you should be able to:

- **LO1** Appreciate the implications of indirect ownership interests on consolidation and equity accounting;
- **LO2** Prepare consolidation adjustments and equity accounting entries for multi-tier group structures;
- **LO3** Appreciate the implications of business combinations achieved in stages and changes in ownership interests in a subsidiary;
- **LO4** Prepare consolidation adjustments for changes in ownership interests in a subsidiary, with and without change in control;
- **LO5** Analytically determine amounts in consolidated financial statements in more complex settings;
- **LO6** Prepare consolidation adjustments for asset transfers in more complex settings;
- **LO7** Understand the temporary differences in profit recognition arising from consolidation and the cost and equity methods; and
- **LO8** Appreciate the primary difference between a single entity's cash flow statement and consolidated cash flow statement.

INDIRECT OWNERSHIP INTERESTS

Chapter 2 discussed the concept of direct and indirect holdings. IFRS 10 *Consolidated Financial Statements* and IAS 28 *Investment in Associates and Joint Ventures* require an investor to consider indirect holdings to determine whether "control" or "significant influence" exists. A parent has an *indirect ownership interest* in a subsidiary when equity in that subsidiary is held through one or more of the parent's subsidiaries. In the same manner, non-controlling interests (NCI) or outside shareholders can also have an *indirect interest* in a subsidiary. Consider the ownership structure shown in Figure 7.1.

FIGURE 7.1 Group structure of X Co and subsidiaries



In the structure, X Co, which owns 80% of Y Co (which in turn owns 60% of Z Co), is known as the *ultimate parent company* while Y Co is the *intermediate parent company* of Z Co. Although X Co's indirect interest (or effective interest) is only 48% (less than 50%) of Z Co, X Co is the parent of Z Co because it is able to control Z Co through Y Co. Majority voting rights are present in all the linkages from X Co to Z Co. In the absence of evidence to the contrary, majority voting power (more than 50%) *in each linkage* is a basis for *de facto* control.

The affiliation structure includes non-controlling interests in Y Co and Z Co. Non-controlling interests may comprise several individual or corporate investors in Y Co and Z Co. Their unknown identity is not important as their interests are collectively represented in the income statement and statement of financial position as a single item. There are two types of non-controlling interests:

1. Direct non-controlling interests
2. Indirect non-controlling interests

In Figure 7.1, percentage ownership of *direct* non-controlling interests in Y Co is 20% while that in Z Co is 40%. Non-controlling shareholders of Y Co *indirectly* own 12% of the shares of Z Co through Y Co. Note that the sum of the majority shareholders' indirect interest in the lower-tiered subsidiary (i.e., 48% in Z Co) and the non-controlling

shareholders' indirect interest in the subsidiary (i.e., 12% in Z Co) is equal to the intermediate parent's share in the subsidiary (i.e., 60% that Y Co has in Z Co). For ease of reference, we describe the lower-tiered subsidiary that is controlled through an intermediate parent as an "indirect subsidiary."

Direct and Indirect Non-controlling Interests

Direct non-controlling interests will be subject to the usual consolidation procedures that Chapter 5 discusses. These procedures include allocating to direct non-controlling interests their share of the subsidiary's:

1. Fair value as at the date of acquisition;
2. Dividend payment;
3. Profit/(loss) after tax for the current period after adjustments for amortization of fair value adjustments and unrealized profit or loss from upstream sales; and
4. Change in post-acquisition retained earnings, other comprehensive income and other changes in equity.

However, *indirect non-controlling interests*, through their investment in the intermediate parent, will be entitled to their share of the indirect subsidiary's:

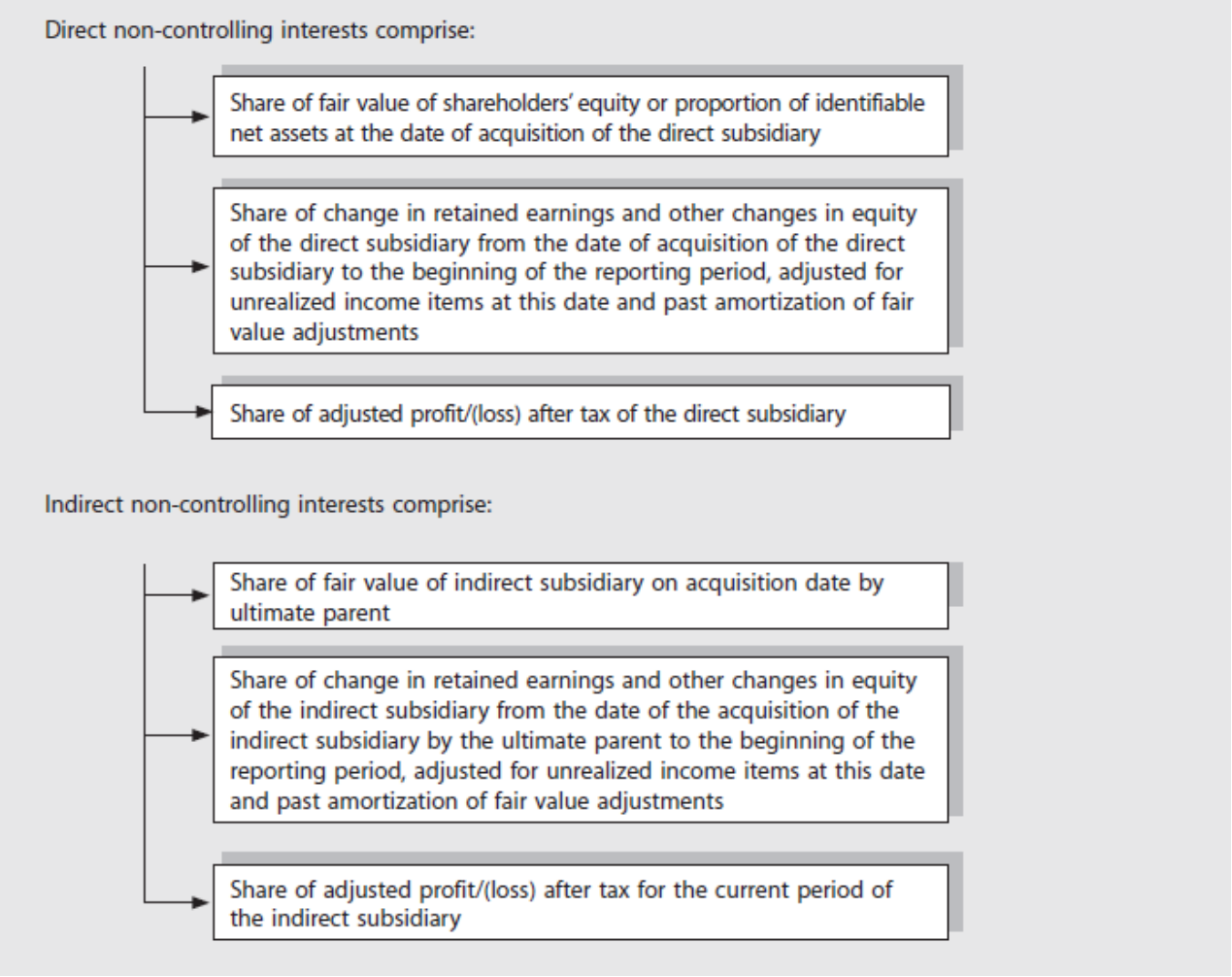
1. Fair value as at date of acquisition by the ultimate parent;
2. Profit/(loss) after tax for the current period after adjustments for amortization of fair value adjustments and unrealized profit or loss from upstream sales; and
3. Change in post-acquisition retained earnings, other comprehensive income and changes in equity only from the date when the ultimate parent acquires the indirect subsidiary.

Indirect non-controlling interests do *not* have a share of the indirect subsidiary's dividend payments as the payments are made to direct owners of the subsidiary only. Hence, the dividend elimination entry does not apply to indirect non-controlling interests.

Timing of Allocation of Share of Profit or Losses to Non-controlling Interests

Direct non-controlling interests have an interest in the subsidiary's profit or loss from the date when the subsidiary was incorporated. The changes in ownership between different non-controlling shareholders are not important as they are collectively seen as one body for purposes of consolidation. There is no distinction between pre-acquisition and post-acquisition retained earnings for direct non-controlling interests. Through consolidation procedures, non-controlling interests are built up chronologically, as shown in Figure 7.2.

FIGURE 7.2 Re-enactment of direct and indirect non-controlling interests



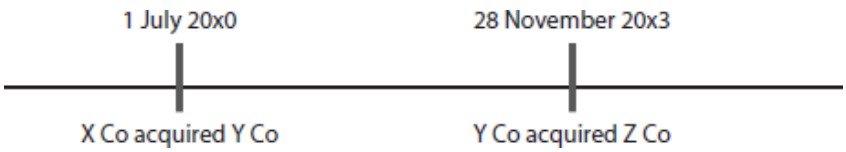
We can see from Figure 7.2 that the process of re-enactment of direct and indirect non-controlling interests involve recognizing share of equity of direct and indirect subsidiaries chronologically. Accounting for direct non-controlling interests should be familiar to us by now. Chapter 4 dealt with accounting for direct non-controlling interests at great length and in that chapter, we saw that non-controlling interests at the end of a reporting period comprises three components:

Non-controlling interests in a direct subsidiary = Share of book value of equity of the direct subsidiary at the end of a reporting period + Share of remaining excess of fair value (FV) over book value (BV) of identifiable net assets of the direct subsidiary + Goodwill (assuming Alternative 1 method of recognizing non-controlling interests) in the direct subsidiary.

Interestingly, the same relationship applies to indirect non-controlling interests as well. Indirect non-controlling interests also have a share in the three components of the indirect subsidiary. We consider two situations below and analyze how the three components can be worked out.

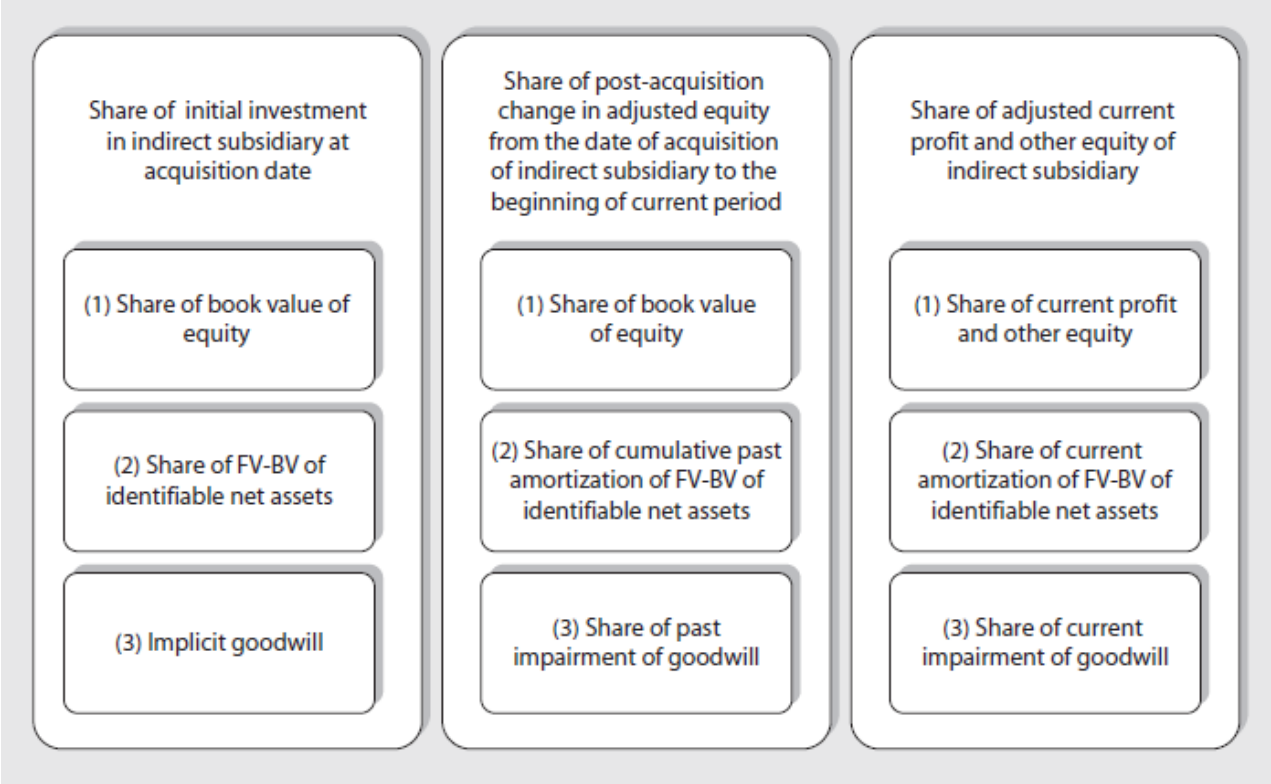
Acquisition of an Indirect Subsidiary After the Intermediate Parent is Acquired

Let us assume that X Co, the ultimate parent acquired Y Co first on 1 July 20x0. Subsequently, Y Co acquired Z Co as a stand-alone entity on 28 November 20x3. The non-controlling interests of Y Co would have a share of the initial investment that Y Co has in Z Co as at 28 November 20x3. In this sequence of events, the acquisition date of Z Co is 28 November 20x3. The timeline is shown below:



From Figure 7.3, we see that the indirect non-controlling interests in Z Co have a share of the initial investment in Z Co at acquisition date, 28 November 20x3. After 28 November 20x3, indirect interests will participate in the share of profits and changes in equity of Z Co.

FIGURE 7.3 Components of indirect non-controlling interests



Hence, at any point in time after acquisition of the indirect subsidiary, the following relationship holds.

Non-controlling interests in an indirect subsidiary = Share of book value of equity of the indirect subsidiary + Share of remaining excess of fair value (FV) over book value (BV) of identifiable net assets of the indirect subsidiary + Goodwill (assuming Alternative 1 method of recognizing non-controlling interests) in the indirect subsidiary.

However, in our analysis of non-controlling interests in an indirect subsidiary, we must be careful to avoid double counting of net assets. The investment in the indirect subsidiary that resides on the intermediate parent's statement of financial position must be removed in our analytical checks.

For example, in Figure 7.1, Y Co's non-controlling interests have stakes in both Y Co and Z Co.

Y Co's non-controlling interests have a share of 20% *direct interests* in the book value of Y Co and 20% *direct interests* of the remaining excess of value over book value of identifiable net assets of Y Co and goodwill in Y Co.

However, the book value of Y Co's net assets include investment in Z Co. To avoid double counting the interests in Z Co twice, we must remove the investment in Z Co from book value of Y Co.

Non-controlling interests in an intermediate parent (e.g., Y Co in Figure 7.1) = Share of book value of equity of the intermediate parent at the end of a reporting period ***less investment in the indirect subsidiary*** *+ Share of remaining excess*

of fair value (FV) over book value (BV) of identifiable net assets of the intermediate parent + Goodwill (assuming Alternative 1 method of recognizing non-controlling interests) in the intermediate parent.

Y Co's non-controlling interests also have a share of 12% *indirect interests* in the book value of Z Co and 12% *indirect interests* of the remaining excess of fair value over book of identifiable net assets of Z Co through Y Co.

However, Y Co's non-controlling interests will have a share of 20% of the goodwill that Y Co has in Z Co because goodwill in Z Co resides in Y Co's books, explained below in the arithmetic analysis.

Goodwill in Z Co attributable to Y Co = Investment in Z Co – 60% × Fair value of identifiable net assets of Z Co

Hence,

Investment in Z Co

= Goodwill in Z Co + 60% × Fair value of identifiable net assets of Z Co

Since, non-controlling interests in Y Co has a 20% interest in Y Co, it also has an interest of 20% in the investment in Z Co as shown below.

Indirect non-controlling interests in Z Co at acquisition date (28 November 20x3)

= 20% × Investment in Z Co

= 20% × ((Goodwill in Z Co attributable to Y Co) + (60% × Fair value of identifiable net assets of Z Co))

= 20% × Goodwill in Z Co + 12% × Fair value of identifiable net assets of Z Co

= 20% × Goodwill in Z Co + 12% × (Fair value – Book value) of identifiable net assets of Z Co + 12% × Book value of identifiable net assets of Z Co

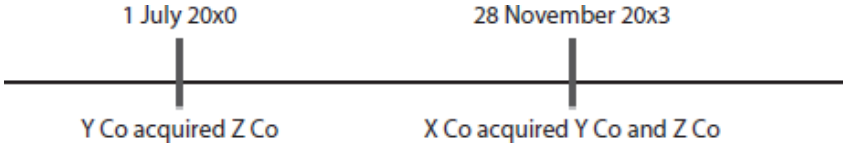
Hence,

Non-controlling interests in an indirect subsidiary = Indirect interests in the book value of equity of the indirect subsidiary + Indirect interests in the remaining excess of fair value (FV) over book value (BV) of identifiable net assets of the indirect subsidiary + Direct interests in the goodwill of the indirect subsidiary that is attributable to the intermediate parent

An analysis of the non-controlling interests in a situation where a subsidiary is acquired subsequent to the acquisition of an intermediate parent is shown in Illustration 7.1.

Acquisition of a Sub-group that Includes an Indirect Subsidiary

In many acquisitions, the acquirer obtains control of an intermediate parent that has subsidiaries of its own. In this instance, the indirect non-controlling interests would have had interests in the sub-group even before the acquirer obtains control of the intermediate parent and its subsidiaries. Consider the following timeline:



IFRS 3 *Business Combinations* requires the acquirer (X Co) to measure the non-controlling interests at either full fair value at acquisition date on 28 November 20x3 (including goodwill under Alternative 1) or as a proportion of the fair values of identifiable net assets (Alternative 2). In other words, it is a fresh start approach for non-controlling interests in the acquirer's consolidated financial statements.

Non-controlling interests in the direct and indirect subsidiary still comprise the three components (assuming that Alternative 1 is adopted). We will still need to deduct the investment balance in the indirect subsidiary from the net assets of the intermediate parent when analyzing the non-controlling interests' balance.

Non-controlling interests in an intermediate parent (e.g., Y Co in Figure 7.1) = Share of book value of equity of the intermediate parent at the end of a reporting period ***less investment in the indirect subsidiary*** *+ Share of remaining excess*

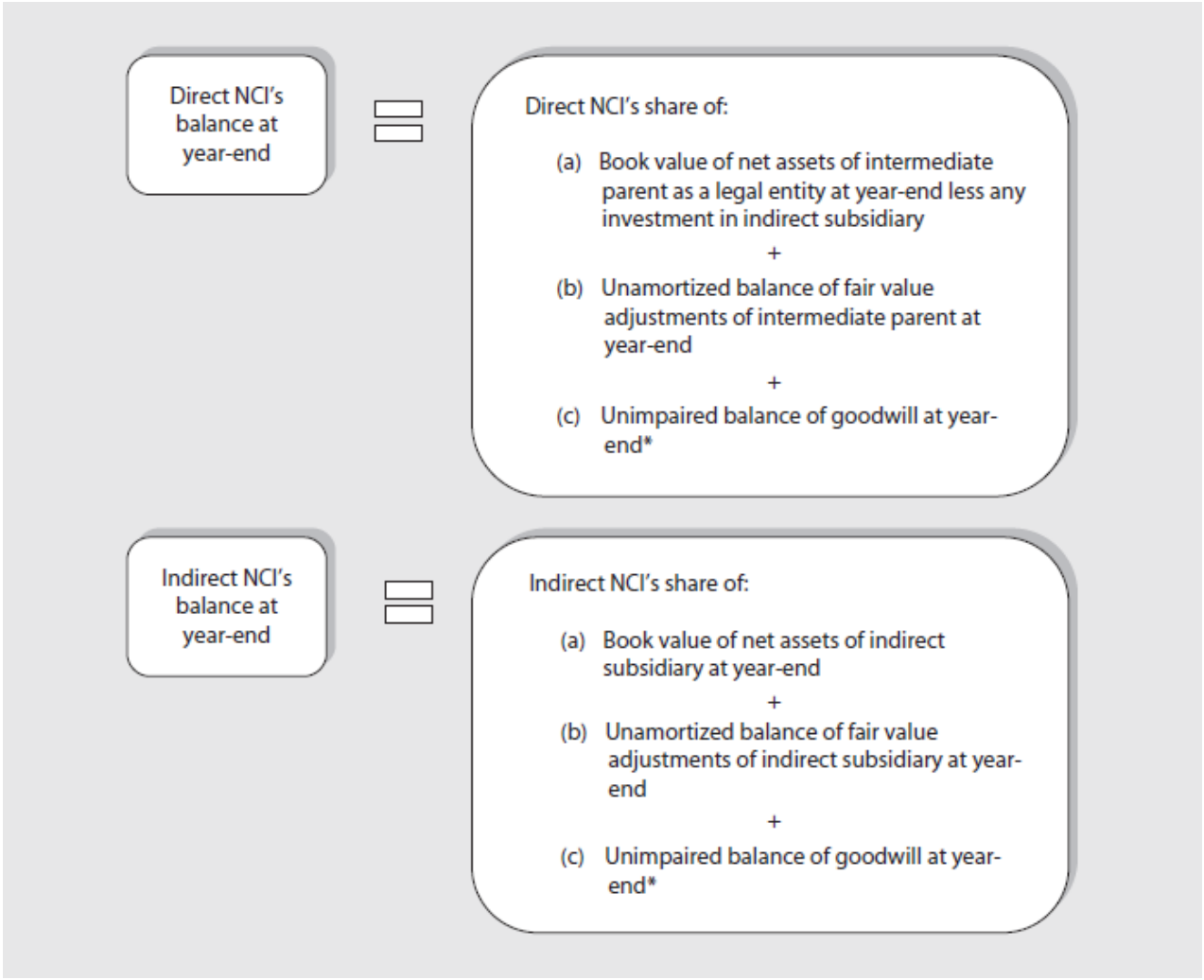
of fair value (FV) over book value (BV) of identifiable net assets of the intermediate parent + Goodwill (assuming Alternative 1 method of recognizing non-controlling interests) in the intermediate parent

However, using the fresh start approach, non-controlling interests in the acquired sub-group will be measured at fair value at acquisition date, 28 November 20x3. The old balances arising from 1 July 20x0 to 28 November 20x3 will be discarded and a new value imputed. Since non-controlling interests of the intermediate parent are also non-controlling interests of the indirect subsidiary, the fair value of non-controlling interests of the intermediate parent will include interests in the indirect subsidiary as well. Direct non-controlling interests will also be measured at its own fair value. Goodwill attributable to the non-controlling interests of the intermediate parent and subsidiaries will have to be determined on the basis of the imputed fair values at date of acquisition by the ultimate parent.

Non-controlling interests in an indirect subsidiary = Indirect interests in the book value of equity of the indirect subsidiary + Indirect interests in the remaining excess of fair value (FV) over book value (BV) of identifiable net assets of the indirect subsidiary + Goodwill in the indirect subsidiary

In Figure 7.4, we show diagrammatically the analytical checks on direct non-controlling interests in an intermediate parent and the indirect non-controlling interests in the intermediate parent's subsidiaries.

FIGURE 7.4 Analytical checks on non-controlling interests in an intermediate parent and its subsidiaries



* Goodwill may be combined as the fair value of non-controlling interests of the intermediate parent at acquisition date is often determined for the sub-group as a unit.

Practically, the goodwill is determined for the sub-group as a unit rather than the individual entities within the sub-group, as follows, using the structure in Figure 7.1:

Goodwill in Y Co and Z Co = Fair value of consideration to acquire Y + Fair value of non-controlling interests of Y and indirect non-controlling interests of Z + Fair value of direct non-controlling interests of Z – (Fair value of identifiable net assets of Y – Investment in Z) – Fair value of identifiable net assets of Z

Goodwill attributable to non-controlling interests in Y Co and indirect non-controlling interests in Z Co = Fair value of non-controlling interests of Y and indirect non-controlling interests of Z – (20% × (Fair value of identifiable net assets of Y – Investment in Z)) – (12% × Fair value of identifiable net assets of Z)

Goodwill attributable to direct non-controlling interests in Z Co = Fair value of direct non-controlling interests of Z – 40% × Fair value of identifiable net assets of Z}

An example of the analysis of non-controlling interests in a sub-group is shown in Illustration 7.2.

DUAL APPROACH TO CONSOLIDATION OF INDIRECT NON-CONTROLLING INTERESTS IN SUBSIDIARIES

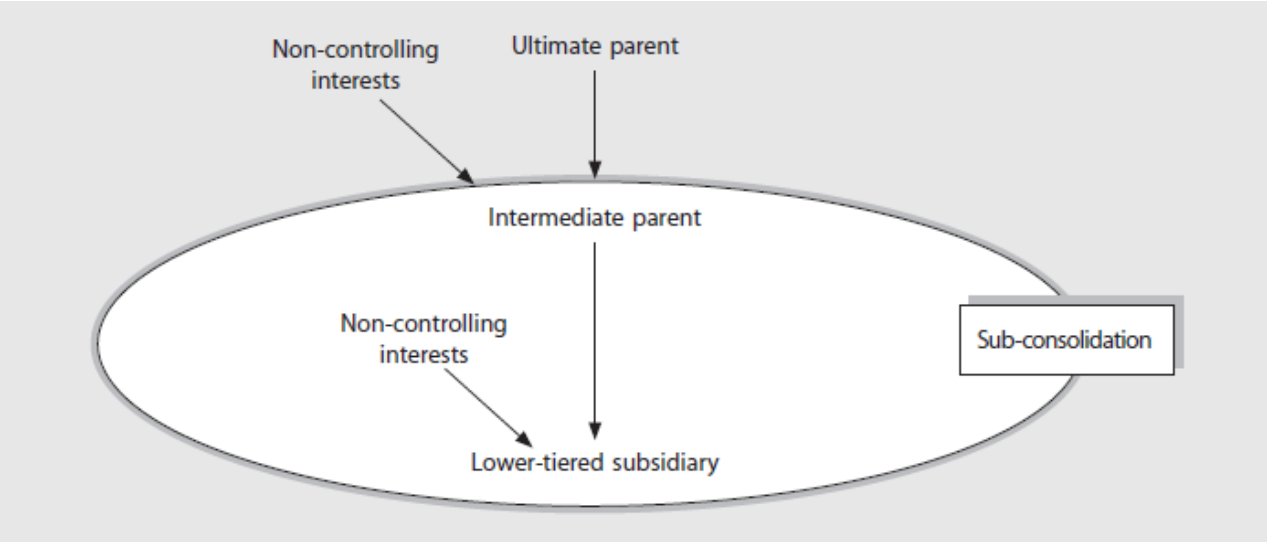
We can account for indirect non-controlling interests in subsidiaries in one of two ways:

1. Sequential or hierarchical consolidation or
2. Simultaneous or multiple consolidation

Sequential or Hierarchical Consolidation

This method involves a *series of sub-consolidations*, in a bottom-up approach beginning at the lowest level in the group and progressing upwards. For example, in Figure 7.5, the intermediate parent will consolidate the lower-tiered subsidiary, and the ultimate parent will consolidate the figures that arise from the first sub-consolidation.

FIGURE 7.5 Sequential or hierarchical consolidation



In Figure 7.1:

1. Y Co, the intermediate parent company with 60% interest in Z Co, will consolidate Z Co first.
2. Y Co will deduct non-controlling interests of 40% in Z Co's net profit after tax in the consolidated sub-group financial statements.
3. In the second consolidation, X Co, the ultimate parent company, will consolidate Y Co's consolidated sub-group figures.
4. Since X Co owns 80% of Y Co, non-controlling interests of 20% in Y Co's consolidated net profit after tax and non-controlling interests will be allocated to non-controlling interests of Y Co. Hence, effectively 12% of Z Co's net profit after tax is allocated to indirect non-controlling interests (i.e., 20% interest in Y Co multiplied by 60% that Y Co has in Z Co).
5. Through the series of consolidations, a total of 52% of Z Co's net profit after tax and 20% of Y Co's net profit after tax will be allocated to non-controlling interests in the higher-level consolidated income statement.

Simultaneous or Multiple Consolidation

The effects of sequential consolidation may be replicated through simultaneous or multiple consolidation. *Simultaneous consolidation* of all directly and indirectly held subsidiaries is carried out by the ultimate parent on the same consolidation worksheet. The consolidation worksheet will incorporate the income statements and statements of financial position of the ultimate parent, intermediate parent(s), and subsidiaries. Income of the lower-tiered subsidiary is allocated immediately to indirect non-controlling interests. Multiple consolidation is particularly useful and more efficient when there is no compelling reason to prepare consolidated financial statements for the intermediate parent company. IFRS 10 paragraph 4 exempts an intermediate parent company from preparing consolidated financial statements when the intermediate parent:

1. Is itself a wholly owned subsidiary;
2. Is a partially owned subsidiary but its non-controlling interests including those not otherwise entitled to vote have been informed about, and do not object to, the intermediate parent not presenting consolidated financial statements;
3. Has no debt or equity instruments that are publicly traded or traded on an over-the-market counter;
4. Has not filed or is not in the process of filing its financial statements with a securities commission or other regulatory organization for the purpose of issuing any class of instruments in a public market; and
5. The ultimate or any intermediate parent of the parent produces consolidated IFRS-compliant financial statements that are available for public use.

How Does Simultaneous Consolidation Differ from Sequential Consolidation?

Normal consolidation principles and procedures apply to simultaneous consolidation with a few critical exceptions as detailed below. The main thrust is to know when to apply the indirect ownership percentage in the elimination and allocation entries. In consolidating the financial statements of an ultimate parent and its direct and indirect subsidiaries simultaneously, we must remember that the consolidation adjustments are made from the point of view of the ultimate parent. For example, in Figure 7.1, consolidated retained earnings of the group must include 100% of retained earnings of X (ultimate parent), 80% share of post-acquisition retained earnings of Y Co (direct subsidiary of X), and 48% share of post-acquisition retained earnings of Z Co (indirect subsidiary of X). The acquisition date is also determined from the perspective of the ultimate parent. To determine the share of post-acquisition retained earnings of the indirect subsidiary, we have to determine the date when the ultimate parent acquired the indirect subsidiary through the direct subsidiary.

page 450

1. The fair value of consideration transferred is eliminated against the consolidated shareholders' equity of the direct subsidiary as at the date of acquisition. If the direct subsidiary owns another subsidiary or subsidiaries at the date of acquisition by the ultimate parent, elimination of investment is made against pre-acquisition retained earnings and other comprehensive income and other reserves as of date of acquisition by the ultimate parent. Thus, in the group structure in Figure 7.1:

(a) The investment in Y Co carried in X Co's books will be eliminated against the share capital, pre-acquisition retained earnings, other comprehensive income and other reserves of Y Co. However, if Y Co acquired Z Co prior to the acquisition of Y Co by X Co, the investment in Y Co will be eliminated against the share capital of Y Co, and the consolidated retained earnings and other reserves of Y Co and Z Co. A fair valuation of the sub-group is carried out at this point.

(b) To arrive at the consolidated equity of the sub-group, it is necessary to eliminate the investment in Z Co and the share capital and pre-acquisition retained earnings, other comprehensive income and other equity of Z Co. In simultaneous consolidation, investment in subsidiaries and indirect subsidiaries are eliminated at the same time. The investment in Z Co carried in Y Co's books will be eliminated against the share capital, pre-acquisition retained earnings, other comprehensive income and other reserves of Z Co as at date of acquisition by the ultimate parent.

2. In simultaneous consolidation, the sum of both direct and indirect non-controlling interests' share of current profit after tax and post-acquisition changes are allocated to non-controlling interests. In the group structure in Figure 7.1, the income allocated to non-controlling interests constitutes the sum of the:

   (a) *Direct non-controlling interests* in the profit after tax of the immediate subsidiary (i.e., 20% of Y Co's net profit after tax and 40% of Z Co's net profit after tax); and

   (b) *Indirect non-controlling interests* in the profit after tax of the lower-tiered subsidiaries (i.e., 12% of Z Co's net profit after tax is allocated to Z Co's indirect non-controlling interests).

3. Elimination of dividend income against dividends declared entails only direct ownership interests since dividend is paid to the legal owners of a subsidiary.

4. In determining indirect non-controlling interests' share of the profit or loss of an indirect subsidiary, dividend income from lower-tiered subsidiaries that is recognized in the income statement of the intermediate parent should be removed to avoid the double-counting of income allocated to indirect non-controlling interests. Under the simultaneous consolidation process, income from the lower-tiered subsidiaries is allocated to indirect non-controlling interests in step 2(b) above. Hence, dividend income from a direct subsidiary that is recorded in the separate financial statements of the intermediate parent should be removed to avoid the recognition of income in two different forms. The elimination of dividend income included in an intermediate parent's profit or loss is also consistent with the principle of eliminating intragroup income.

Illustration 7.1 explains the application of simultaneous consolidation to a multi-level group structure.

ILLUSTRATION 7.1 Simultaneous consolidation

Section B explains the step-by-step execution of simultaneous consolidation.

Section A: Question

The acquisition details are as follows:

	A Ltd	B Ltd
Acquired by	P Ltd	A Ltd
Date of acquisition	1 January 20x0	1 July 20x0
Equity at acquisition		
Share capital	$30,000	$30,000
Retained earnings	10,000	5,000
	$40,000	$35,000
Fair value of consideration transferred	$32,000	$35,000

Percentage acquired	75%	80%
Fair value of non-controlling interests	$10,000	$ 8,000

Income Statement and Partial Statement of Changes in Equity
For the Year Ended 31 December 20x2

	P Ltd	A Ltd	B Ltd
Operating profit	$20,000	$12,000	$19,000
Dividend income	6,000	4,000	
Profit before tax	$26,000	$16,000	$19,000
Tax	(4,000)	(2,400)	(3,800)
Profit after tax	$22,000	$13,600	$15,200
Retained earnings 1 January 20x2	21,000	17,000	6,000
Dividends declared	(12,000)	(8,000)	(5,000)
Retained earnings 31 December 20x2	$31,000	$22,600	$16,200

Statement of Financial Position
As at 31 December 20x2

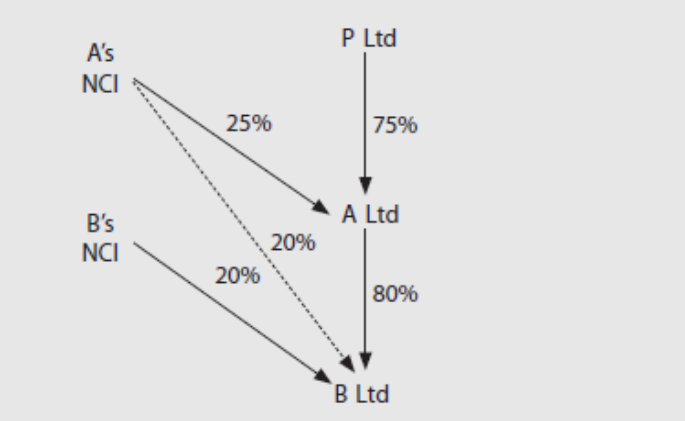
	P Ltd	A Ltd	B Ltd
Share capital	$60,000	$30,000	$30,000
Retained earnings	31,000	22,600	16,200
	$91,000	$52,600	$46,200
Investment in A Ltd	$32,000		
Investment in B Ltd		$35,000	
Other non-current assets	31,000	20,000	$23,000
Current assets	90,000	35,000	40,000
Current liabilities	(62,000)	(37,400)	(16,800)
	$91,000	$52,600	$46,200

Investments in subsidiaries are carried at cost. Book values of net identifiable assets are close to their fair values.

Section B: Solution

Step 1: Identify the direct and indirect non-controlling interests in the group structure.

Consider the following multi-level group structure:



	A Ltd	B Ltd
Direct non-controlling interests	25%	20%
Indirect non-controlling interests (Indirect non-controlling interests in B = 25% × 80%)		20%
Total non-controlling interests	25%	40%

Another way to arrive at B's total non-controlling interests is to subtract from 100%, P's effective interest in B of 60% (i.e., 75% × 80%). The remaining effective interest of 40% represents both the direct and indirect non-controlling interests in B.

What is the significance of the indirect non-controlling interests? Indirect non-controlling interests will have a share of post-acquisition retained earnings and current profits. However, only direct non-controlling interests feature in the elimination of dividends as the holding of investment and the payment of dividends relate to direct ownership interests only.

In this situation, A acquired B on 1 July 20x0 after P acquired A. Hence effectively, P acquired B on 1 July 20x0.

Step 2: Now work out the consolidation entry to eliminate the investment.

CJE1: Eliminate investment in A and A's shareholders' equity[1] as at the date of acquisition (1 January 20x0)

Dr Share capital	30,000	
Dr Retained earnings	10,000	
Dr Goodwill	2,000	
Cr Investment in A		32,000
Cr Non-controlling interests		10,000

$$\text{Goodwill} = \left(\begin{matrix}\text{Fair value of}\\ \text{acquisition cost}\end{matrix} + \begin{matrix}\text{Fair value of}\\ \text{non-controlling interests}\end{matrix}\right) - \text{Fair value of net identifiable assets}$$
$$= (\$32{,}000 + \$10{,}000) - \$40{,}000$$
$$= \$42{,}000 - \$40{,}000$$
$$= \$2{,}000$$

CJE2: Eliminate investment in B and B's shareholders' equity as at the date of acquisition (1 July 20x0)

Dr Share capital	30,000	

Dr Retained earnings	5,000	
Dr Goodwill	8,000	
Cr Investment in B		35,000
Cr Non-controlling interests		8,000

$$\text{Goodwill} = \left(\begin{matrix}\text{Fair value of}\\ \text{acquisition cost}\end{matrix} + \begin{matrix}\text{Fair value of}\\ \text{non-controlling interests}\end{matrix}\right) - \text{Fair value of net identifiable assets}$$
$$= (\$35{,}000 + \$8{,}000) - \$35{,}000$$
$$= \$43{,}000 - \$35{,}000$$
$$= \$8{,}000$$

Step 3: Work out non-controlling interests' share of post-acquisition retained earnings from the date of acquisition to the beginning of the year. Now be careful to apply both the direct and indirect interests in allocating post-acquisition retained earnings to non-controlling interests.

CJE3: Assign direct non-controlling interests' share of post-acquisition retained earnings of subsidiary A

Dr Retained earnings	1,750	
Cr Non-controlling interests		1,750 (25% × ($17,000 – $10,000))

CJE4: Assign direct and indirect non-controlling interests' share of post-acquisition retained earnings of subsidiary B

Dr Retained earnings	400	
Cr Non-controlling interests		400 (40% × ($6,000 – $5,000))

Step 4: Now work out non-controlling interests' share of current profit after tax. As in Step 3, be careful to apply the application of indirect non-controlling interests' percentage for the subsidiary that has more than one parent

CJE5: Assign direct non-controlling interests' share of current profit after tax for subsidiary A

Dr Income to non-controlling interests	2,400	
Cr Non-controlling interests		2,400
A's profit after tax for 20x2		$13,600
Less dividend income from B		(4,000)
		$ 9,600
Non-controlling interests' share at 25%		$ 2,400

Exclude dividend income because NCI will recognize share of profit of B in CJE6. Dividend is a repayment of profit rather than a basis for profit recognition. Assume dividend is tax-exempt.

CJE6: Assign direct and indirect non-controlling interests' share of current profit after tax of subsidiary B

Dr Income to non-controlling interests	6,080	
Cr Non-controlling interests		6,080
B's profit after tax for 20x2		$15,200
Direct and indirect non-controlling interests' share		40%

Total non-controlling interests' share			$ 6,080
CJE7: Elimination of dividends declared by B			
Dr Dividend income (A)	4,000		
Dr Non-controlling interests	1,000	(NCI % × Dividends declared = 20% × $5,000)	
Cr Dividends declared (B)			5,000
CJE8: Elimination of dividends declared by A			
Dr Dividend income (P)	6,000		
Dr Non-controlling interests	2,000	(NCI % × Dividends declared = 25% × $8,000)	
Cr Dividends declared (A)			8,000

Step 5: We compile the legal entities financial statements in one consolidation worksheet and enter the consolidation adjustments above. We also perform the analytical check of non-controlling interests.

Income Statement						
				Consolidation adjustments		
	P Ltd	A Ltd	B Ltd	Dr	Cr	Consolidated totals
Operating profit	$20,000	$12,000	$19,000			$51,000
Dividend income	6,000	4,000		$ 4,000		
				6,000		
Profit before tax	$26,000	$16,000	$19,000			$51,000
Tax	(4,000)	(2,400)	(3,800)			(10,200)
Profit after tax	$22,000	$13,600	$15,200			$40,800
Income to non-controlling interests				2,400		(8,480)
				6,080		
Retained profit						$32,320
Retained earnings, 1 Jan	21,000	17,000	6,000	10,000		26,850
				5,000		
				1,750		
				400		
Dividends declared	(12,000)	(8,000)	(5,000)		5,000	(12,000)
					8,000	
Retained earnings, 31 Dec	$31,000	$22,600	$16,200	$35,630	$13,000	$47,170

Statement of Financial Position						
				Consolidation adjustments		
	P Ltd	A Ltd	B Ltd	Dr	Cr	Consolidated totals
Share capital	$60,000	$30,000	$30,000	$ 30,000		$ 60,000
				30,000		
Retained earnings	31,000	22,600	16,200	35,630	$ 13,000	47,170
Non-controlling interests				1,000	10,000	25,630
				2,000	8,000	
					1,750	
					400	
					2,400	
					6,080	
	$91,000	$52,600	$46,200			$132,800
Investment in A Ltd	$32,000				32,000	
Investment in B Ltd		$35,000			35,000	
Goodwill				2,000		$ 10,000
				8,000		
Other non-current assets	31,000	20,000	$23,000			74,000
Current assets	90,000	35,000	40,000			165,000
Current liabilities	(62,000)	(37,400)	(16,800)			(116,200)
	$91,000	$52,600	$46,200			$132,800
				$108,630	$108,630	

Analytical check of non-controlling interests in B Ltd

Direct non-controlling interests	20%	
Book value of equity of B Ltd	46,200	
Share of book value of equity of B Ltd		9,240
Fair value of non-controlling interests	8,000	
Less share of fair value of identifiable net assets	7,000	
Goodwill attributable to non-controlling interests		1,000
		10,240

Analytical check of non-controlling interests in A Ltd				
Direct non-controlling interests in A Ltd		25%		
Book value of equity of A Ltd		$ 52,600		
Less Investment in B Ltd	Note 1	35,000		
		$ 17,600		
Share of book value of equity of A Ltd			$ 4,400	
Fair value of non-controlling interests		10,000		
Less share of fair value of identifiable net assets		10,000		
Goodwill attributable to non-controlling interests			0	
			4,400	
Indirect non-controlling interests in B Ltd	25%*80%	20%		
Book value of equity of B Ltd		46,200		
Share of book value of equity of B Ltd			9,240	20%*46,200
Investment in B Ltd		35,000		
Less share of fair value of B's identifiable net assets		28,000		80%*35,000
A's goodwill in B Ltd	Note 2	7,000		
Share of A's goodwill in B Ltd			1,750	25%*7,000
Total balance of non-controlling interests			$25,630	

Note 1: Investment in B Ltd is removed to avoid net assets of B being attributed to non-controlling interests in A Ltd twice. In the segment below, the same shareholders have been attributed their indirect interests in B Ltd's net assets.

Note 2: When A Ltd acquired B Ltd on 1 July 20x0, the NCI of A also effectively acquired a share of the goodwill arising from the business combination between A and B. A's NCI effectively has a 25% interest in the goodwill. Had there been under- or over-valued identifiable net assets, A's NCI would also have a share of 25% in these under- or over-valued identifiable net assets. We apply 25% interest because A's NCI has a 25% interest in the investment that A has in B.

ILLUSTRATION 7.2 Extension of sequential consolidation

We now show the sequential consolidation approach which will consolidate the lower tiered sub-group first. Two consolidation worksheets are required. Although this seems onerous, practically most groups perform this method of consolidation as it provides more information on a particular sub-group to non-controlling interests.

CJE1: Eliminate investment in B and B's shareholders' equity as at the date of acquisition

Dr Share capital	30,000		
Dr Retained earnings	5,000		
Dr Goodwill	8,000		
Cr Investment in B		35,000	
Cr Non-controlling interests		8,000	

CJE2: Assign direct non-controlling interests' share of post-acquisition retained earnings of subsidiary B

Dr Retained earnings	200		
Cr Non-controlling interests		200	(20% × ($6,000 – $5,000))

CJE3: Assign direct non-controlling interests' share of current profit after tax of subsidiary B

Dr Income to non-controlling interests	3,040	
Cr Non-controlling interests		3,040
B's profit after tax for 20x2		$15,200
Direct non-controlling interests' share		20%
Direct non-controlling interests' share		$ 3,040

CJE4: Elimination of dividends declared by B

Dr Dividend income (A)	4,000		
Dr Non-controlling interests	1,000	(NCI % × Dividends declared = 20% × $5,000)	
Cr Dividends declared (B)			5,000

Sub-consolidation of A Ltd and its subsidiary B Ltd

Income Statement					
			Consolidation adjustments		Consolidated totals
	A Ltd	B Ltd	Dr	Cr	
Operating profit	$12,000	$19,000			$31,000
Dividend income	4,000		$ 4,000		0
Profit before tax	$16,000	$19,000			$31,000
Tax	(2,400)	(3,800)			(6,200)
Profit after tax	$13,600	$15,200			$24,800
Income to non-controlling interests			3,040		(3,040)
Retained profit					$21,760
Retained earnings, 1 Jan	17,000	6,000	5,000		17,800
			200		
Dividends declared	(8,000)	(5,000)		$5,000	(8,000)
Retained earnings, 31 Dec	$22,600	$16,200	$12,240	$5,000	$31,560

Statement of Financial Position					
			Consolidation adjustments		
	A Ltd	B Ltd	Dr	Cr	Consolidated totals
Share capital	$30,000	$30,000	$30,000		$30,000
Retained earnings	22,600	16,200	12,240	$ 5,000	31,560
Non-controlling interests			1,000	8,000	10,240
				200	
				3,040	
	$52,600	$46,200			$71,800
Investment in B Ltd	$35,000			35,000	
Goodwill			8,000		$ 8,000
Other non-current assets	20,000	$23,000			43,000
Current assets	35,000	40,000			75,000
Current liabilities	(37,400)	(16,800)			(54,200)
	$52,600	$46,200	$51,240	$51,240	$71,800

Analytical check of non-controlling interests in B Ltd

Direct non-controlling interests	20%	
Book value of equity of B Ltd	46,200	
Share of book value of equity of B Ltd		9,240
Fair value of non-controlling interests	8,000	
Less share of fair value of identifiable net assets	7,000	
Goodwill attributable to non-controlling interests		1,000
		10,240

CJE5: Eliminate investment in A and A's shareholders' equity[2] as at the date of acquisition

Dr Share capital	30,000	
Dr Retained earnings	10,000	
Dr Goodwill	2,000	
Cr Investment in A		32,000
Cr Non-controlling interests		10,000

CJE6: Assign direct non-controlling interests' share of post-acquisition retained earnings of sub-group of subsidiary A

Dr Retained earnings	1,950		
Cr Non-controlling interests		1,950	(25% × ($17,800 – $10,000))

CJE7: Assign direct non-controlling interests' share of current profit after tax for subsidiary A

Dr Income to non-controlling interests	5,440

Cr Non-controlling interests			5,440
A's consolidated profit after tax for 20x2			$24,800
Less income to direct non-controlling interests of B			(3,040)
			$21,760
Non-controlling interests' share at 25%			$ 5,440

CJE8: Elimination of dividends declared by A

Dr Dividend income (P)	6,000		
Dr Non-controlling interests	2,000	(NCI % × Dividends declared = 25% × $8,000)	
Cr Dividends declared (A)			8,000

Consolidation of P Ltd and A Ltd's Sub-Group

Income Statement

	P Ltd	A Ltd Sub-group	Consolidation adjustments Dr	Consolidation adjustments Cr	Consolidated totals
Operating profit	$20,000	$31,000			$51,000
Dividend income	6,000		$ 6,000		0
Profit before tax	$26,000	$31,000			$51,000
Tax	(4,000)	(6,200)			(10,200)
Profit after tax	$22,000	$24,800			$40,800
Income to non-controlling interests		(3,040)	5,440		(8,480)
Retained profit		$21,760			$32,320
Retained earnings, 1 Jan	21,000	17,800	10,000		26,850
			1,950		
Dividends declared	(12,000)	(8,000)		$8,000	(12,000)
Retained earnings, 31 Dec	$31,000	$31,560	$23,390	$8,000	$47,170

Statement of Financial Position					
			Consolidation adjustments		
	P Ltd	A Ltd Sub-group	Dr	Cr	Consolidated totals
Share capital	$60,000	$30,000	$30,000		$ 60,000
Retained earnings	31,000	31,560	23,390	$ 8,000	47,170
Non-controlling interests		10,240	2,000	10,000	25,630
				1,950	
				5,440	
	$91,000	$71,800			$132,800
Investment in A Ltd	$32,000			32,000	
Goodwill		$ 8,000	2,000		$ 10,000
Other non-current assets	31,000	43,000			74,000
Current assets	90,000	75,000			165,000
Current liabilities	(62,000)	(54,200)			(116,200)
	$91,000	$71,800	$57,390	$57,390	$132,800

Analytical check of non-controlling interests in B Ltd

Direct non-controlling interests	20%	
Book value of equity of B Ltd	46,200	
Share of book value of equity of B Ltd		9,240
Fair value of non-controlling interests	8,000	
Less share of fair value of identifiable net assets	7,000	
Goodwill attributable to non-controlling interests		1,000
		10,240

Analytical check of non-controlling interests in A Ltd

Direct non-controlling interests	25%	
Book value of consolidated equity of A Ltd (excluding non-controlling interests)	61,560	
Share of book value of equity of A Ltd		15,390
Fair value of non-controlling interests	10,000	
Less share of fair value of identifiable net assets	10,000	
Goodwill attributable to non-controlling interests		0
		15,390
Total balance of non-controlling interests		25,630

Sequence of Acquisition of the Intermediate Parent and the Indirect Subsidiary

Illustration 7.1 is an example of simultaneous and sequential consolidation of a three-tier group structure. In Illustration 7.1, the sequence is such that the ultimate parent acquires the intermediate parent, as a stand-alone entity, before the latter

acquires the indirect subsidiary.

In most situations, the ultimate parent acquires an existing group of companies. In such a scenario, the following procedures must be applied as at the date of acquisition of the intermediate parent by the ultimate parent.

1. The pre-acquisition retained earnings and other comprehensive income of each entity in the sub-group at the date of acquisition by the ultimate parent must be eliminated.
2. Goodwill on acquisition of the intermediate parent is the excess of the sum of the acquisition-date fair value of the consideration transferred and fair value of the non-controlling interests in the acquiree over the fair value of the consolidated net identifiable assets of the intermediate parent.

   We had earlier shown how goodwill is determined for a sub-group, using the structure in Figure 7.1 where Y Co is the intermediate parent and Z Co is the indirect subsidiary.

   Goodwill in Y and Z = Fair value of consideration transferred to acquire Y + Fair value of non-controlling interests of Y and indirect non-controlling interests of Z + Fair value of direct non-controlling interests of Z – (Fair value of identifiable net assets of Y – Investment in Z) – Fair value of identifiable net assets of Z.

   Fair values are determined as at the date of acquisition by the ultimate parent (X Co in Figure 7.1).

   As we have seen in earlier chapters, fair value of identifiable net assets of each entity comprises its book value of equity and differences between fair value and book values of identifiable net assets. Any fair valuation carried out in earlier periods (e.g., when intermediate parent acquired its subsidiaries) are discarded. This is elaborated in point 3 below.

   We need to deduct the investment in the indirect subsidiary to avoid double counting the net assets of the indirect subsidiary.

   Note also that the fair value of non-controlling interests in the intermediate parent would include their interests in the subsidiaries controlled by the intermediate parent.
3. Goodwill is determined for the sub-group at the date of the acquisition of the sub-group by the ultimate parent. Any goodwill that is recognized earlier in the sub-group as a result of the acquisition of the indirect subsidiary is ignored. The acquirer will also need to determine the fair value of identifiable net assets as at the acquisition date of the sub-group. Any earlier fair valuation will be adjusted to arrive at the updated fair values as at the acquisition date of the sub-group.

page 461

4. Non-controlling interests in the intermediate parent have a share of the fair value of consolidated net assets of the intermediate parent. The fair value of the intermediate parent's non-controlling interests comprises the fair value of their direct interests in the intermediate parent and their indirect interests in the subsidiaries held by the intermediate parent at the date when the sub-group is acquired by the ultimate parent.

   The direct non-controlling interests in each subsidiary will also have to be measured at fair value, in the usual manner that we have seen in the earlier chapters. Under Alternative 1, the fair value of non-controlling interests includes goodwill and under Alternative 2, fair value of non-controlling interests is determined only with reference to their share of the fair values of identifiable net assets.
5. Subsequent to the acquisition date of the intermediate parent by the ultimate parent, non-controlling interests in the intermediate parent continue to have a share of the change in post-acquisition retained earnings and other comprehensive income of the indirect subsidiary. Other consolidation adjustments apply in the usual manner as seen in the earlier chapters.

Illustration 7.3 illustrates the scenario where an ultimate parent acquires an existing sub-group.

ILLUSTRATION 7.3 Simultaneous consolidation of an existing sub-group of companies

B acquired 70% of C on 1 January 20x0 when the shareholders' equity of C was $3,500,000. A acquired 90% of B on 1 January 20x3. The fair value (FV) of identifiable net assets (INA) of B was close to book value (BV) at date of acquisition. Land of C was undervalued at both dates. Land was unsold and proceeds, if any, are tax-exempt and deferred liability need not be recognized. Details are shown below. The timeline is as follows:

B acquired C

Percentage acquired	70%
Date of acquisition	1 January 20x0
Fair value of consideration transferred	$4,000,000
Fair value of non-controlling interests in C	$1,600,000
Fair value of land	$2,000,000
Carrying amount (book value) of land	$1,400,000

	1 January 20x0	1 January 20x3	1 January 20x5
Share capital of C	$1,500,000	$1,500,000	$1,500,000
Retained earnings of C	2,000,000	5,000,000	7,000,000
Shareholders' equity of C	$3,500,000	$6,500,000	$8,500,000

Net profit of C for the year ended 31 December 20x5	$1,000,000
Dividends declared by C during 20x5	(60,000)
Profit retained	$ 940,000
Retained earnings of C as at 31 December 20x5	$7,940,000

A acquired B

Percentage acquired	90%
Date of acquisition	1 January 20x3
Fair value of consideration transferred	$20,000,000
Fair value of non-controlling interests in B	$ 1,700,000
Fair value of direct non-controlling interests in C	$2,400,000
Fair value of land of C	$2,300,000
Carrying amount of land of C	$1,400,000

	1 January 20x3	1 January 20x5
Share capital of B	$ 6,000,000	$ 6,000,000
Retained earnings of B	5,900,000	7,200,000
Shareholders' equity of B	$11,900,000	$13,200,000

Net profit of B for the year ended 31 December 20x5	$2,000,000

Dividends declared by B during 20x5	(200,000)
Profit retained	$1,800,000
Retained earnings of B as at 31 December 20x5	$9,000,000

Consolidation adjustments as at 31 December 20x5 (Simultaneous method)

CJE1: Elimination of investment in B and investment in C as at 1 January 20x3

Dr Share capital (B)*	6,000,000		
Dr Share capital (C)	1,500,000		
Dr Retained earnings (B)	5,900,000		
Dr Retained earnings (C)	5,000,000		
Dr Land	900,000		
Dr Goodwill	8,800,000 (Note 1)		
Cr Investment in B (A)		20,000,000	
Cr Investment in C (B)		4,000,000	
Cr Non-controlling interests in B		1,700,000	(Note 3)
Cr Non-controlling interests in C		2,400,000	

* Parenthesis indicates the legal entity in whose books the item appears

Note 1: Goodwill

= Fair value of consideration transferred + Fair value of non-controlling interests in B + Fair value of non-controlling interests in C – Fair value of identifiable net assets
= $20,000,000 + $1,700,000 + $2,400,000 – $15,300,000 (Note 2)
= $8,800,000

Note 2: Fair value of identifiable net assets

= Book value of net assets of B as at 1 January 20x3 (after deducting B's investment in C to avoid double counting of net assets) + Book value of net assets of C as at 1 January 20x3 + Excess of fair value of land of C as at 1 January 20x3
= ($11,900,000 – $4,000,000) + $6,500,000 + $900,000
= $15,300,000

We use the book value of equity comprising the components of equity (share capital and retained earnings in this example) to measure the book value of net assets as at acquisition date. We should note that the book value of net assets of B, the intermediate parent, includes investment in C, the indirect subsidiary. Since we have included the net assets of C separately in the equation, we should deduct the investment in C held by B to avoid double counting of net assets in the goodwill calculation.

Note 3: Non-controlling interests (NCI) in B has a fair value of $1,700,000 as at 1 January 20x3. The fair value comprises the non-controlling interests' share of net identifiable assets and goodwill.

	Total	NCI's share at 10%
Non-controlling interests in B and indirect non-controlling interests in C		
B's book value of equity or net assets as at 1 Jan 20x3	$11,900,000	

Less investment in C	(4,000,000)		
Adjusted Net assets of B	$ 7,900,000	$ 790,000	
C's book value of equity or net assets as at 1 Jan 20x3	6,500,000		
B's share	4,550,000	455,000	(or 7% x $6.5 million)
FV-BV of land of C	900,000		
B's share	630,000	63,000	(or 7% x $900,000)
Fair value of INA		1,308,000	
Goodwill attributable to B's NCI (residual)		392,000	
Fair value of NCI of B on 1 Jan 20x3		$1,700,000	

Note 4: Fair value of C's direct non-controlling interests as at 1 January 20x3 is $2,400,000. The fair value can be analyzed as follows:

	Total	NCI's share at 30%
C's shareholders' equity as at 1 January 20x3	$6,500,000	$1,950,000
Share of fair value excess of land		270,000
Share of goodwill		180,000*
NCI in C		$2,400,000

*NCI's goodwill = Fair value of NCI – Share of fair value of net identifiable assets of C
= $2,400,000 – (30% × $6,500,000) – (30% × $900,000)
= $2,400,000 – $1,950,000 – $270,000
= $180,000

CJE2: Allocation of change in B's retained earnings to direct non-controlling interests of B

Dr Opening retained earnings	130,000	
Cr Non-controlling interests		130,000

Retained earnings of B as at 1 January 20x5	$7,200,000
Retained earnings of B as at 1 January 20x3	5,900,000
Change in retained earnings of B	$1,300,000
Direct non-controlling interests in B	10%

CJE3: Allocation of change in C's retained earnings to direct non-controlling interests of C

Dr Opening retained earnings	600,000	
Cr Non-controlling interests		600,000

Retained earnings of C as at 1 January 20x5	$7,000,000
Retained earnings of C as at 1 January 20x3	5,000,000
Change in retained earnings of C	$2,000,000
Direct non-controlling interests in C	30%

(Direct non-controlling interests' share of retained earnings of C on 1 January 20x3 is accounted for in CJE1.)

CJE4: Allocation of change in C's retained earnings to indirect non-controlling interests of C

Dr Opening retained earnings	140,000	
Cr Non-controlling interests		140,000

Retained earnings of C as at 1 January 20x5	$7,000,000
Retained earnings of C as at 1 January 20x3	5,000,000
Change in retained earnings of C	$2,000,000
Indirect non-controlling interests in C	7% (10% × 70%)

(This entry can be combined with CJE3. Indirect non-controlling interests' share of change in retained earnings of C on 1 January 20x3 is accounted for in the recognition of fair value of non-controlling interest in B Co (and indirect non-controlling interest in C Co) in CJE1.)

CJE5: Allocation of current profit to total non-controlling interests of C

Dr Income to non-controlling interests	370,000	
Cr Non-controlling interests		370,000

Net income of C for 20x5	$1,000,000
Total non-controlling interests' share	37%

CJE6: Allocation of current profit to non-controlling interests of B

Dr Income to non-controlling interests	195,800	
Cr Non-controlling interests		195,800

Net profit of B for 20x5	$2,000,000
Less dividend income from C included in B's net profit	(42,000)
Adjusted net income of B for 20x5	$1,958,000
Direct non-controlling interests' share	10%

Dividend income from C is eliminated to avoid the recognition of intragroup income and double-counting of income in two forms (non-controlling interests have been allocated share of profit of C under CJE5).

CJE7: Eliminate dividends from C

Dr Dividend income (B)	42,000	
Dr Non-controlling interests	18,000	
Cr Dividends declared by C		60,000

CJE8: Eliminate dividends from B

Dr Dividend income (A)	180,000	
Dr Non-controlling interests	20,000	

Cr Dividends declared by B		200,000

Total non-controlling interests as at 31 December 20x5

	Total non-controlling interests	Non-controlling interests in B*	Direct non-controlling interests in C
CJE1: B's non-controlling interests at date of acquisition of B	$1,700,000	$1,700,000	
CJE1: C's non-controlling interests at date of acquisition of B	2,400,000		$2,400,000
CJE2: Allocation of change in B's retained earnings to direct non-controlling interests of B	130,000	130,000	
CJE3: Allocation of change in C's retained earnings to direct non-controlling interests of C	600,000		600,000
CJE4: Allocation of change in C's retained earnings to indirect non-controlling interests of C	140,000	140,000	
CJE5: Allocation of current profit of C	370,000	70,000	300,000
CJE6: Allocation of current profit of B	195,800	195,800	
CJE7: Elimination of dividends from C	(18,000)		(18,000)
CJE8: Elimination of dividends from B	(20,000)	(20,000)	
	$5,497,800	$2,215,800	$3,282,000

* Includes indirect non-controlling interests in B

Analytical check on non-controlling interests in B

	Total	NCI's share of B at 10%	
B's Net assets at 31 Dec 20x5	$15,000,000		
Less investment in C	(4,000,000)		
Adjusted Net assets of B	$11,000,000	$1,100,000	
C's book value of equity or net assets as at 31 Dec 20x5	9,440,000		
B's share	6,608,000	660,800	(or 7% x $9.440 million)
FV-BV of land of C	900,000		
B's share	630,000	63,000	(or 7% x $900,000)
Goodwill attributable to B's NCI (CJE1)		392,000	
NCI of B and indirect NCI of C on 31 Dec 20x5		$2,215,800	

Analytical check on direct non-controlling interests in C

	Total	Direct NCI's share of C at 30%
C's book value of equity or net assets as at 31 Dec 20x5	$9,440,000	$2,832,000
FV-BV of land of C	900,000	270,000
Goodwill attributable to C's NCI (CJE1)		180,000
Direct NCI of C on 31 Dec 20x5		$3,282,000

Analytical Checks on Direct and Indirect Non-controlling Interests in a Multi-tier Group Hierarchy

Essentially, the check on direct non-controlling interests is performed in the usual way as illustrated in previous chapters, and serves as an independent assessment[3] of the balance of the non-controlling interests at the end of a reporting period. However, a check on indirect non-controlling interests in a multi-tier hierarchy is more complex. By virtue of their interest through an intermediate parent, we need to remove the investment included on the intermediate parent's statement of financial position to avoid double counting of the net assets of the indirect subsidiary.

Schematic explanations on the allocation and elimination of retained earnings of direct and indirect subsidiary in Illustration 7.3 are shown in Figures 7.6 and 7.7.

FIGURE 7.6 Allocation and elimination of B's retained earnings in Illustration 7.3

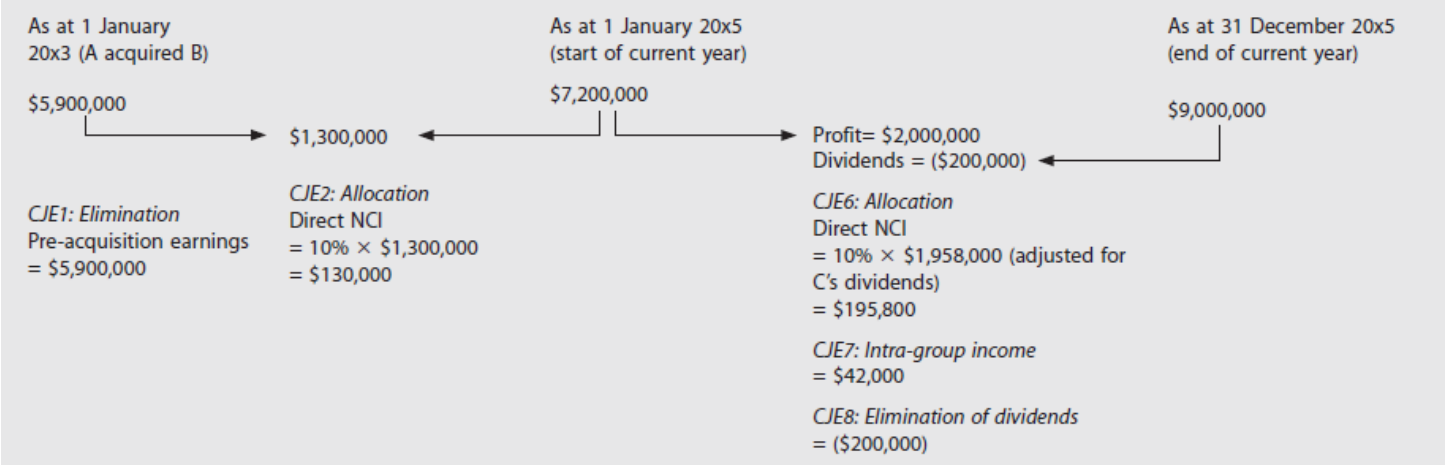
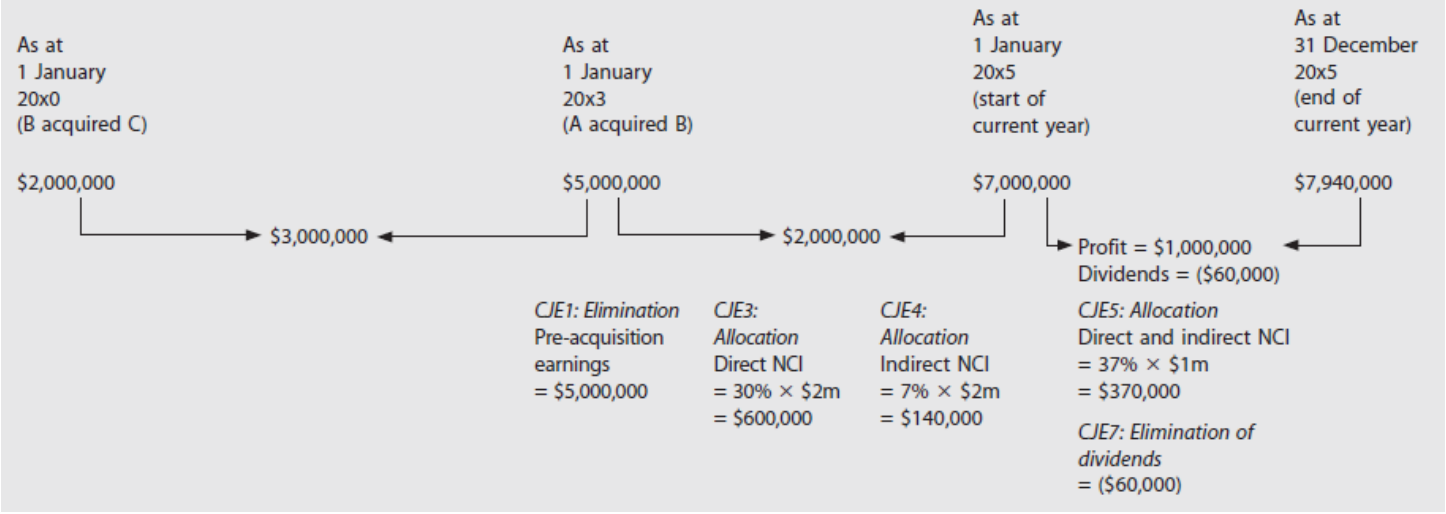


FIGURE 7.7 Allocation and elimination of C's retained earnings in Illustration 7.3



Impact of Fair Value Adjustments on Indirect Non-controlling Interests

Indirect non-controlling interests have a share of the net assets and the fair value adjustments of an indirect subsidiary at the date of acquisition. During the post-acquisition period, both the direct non-controlling interests and the intermediate parent have to bear a share of the amortization of fair value adjustments under simultaneous consolidation. Since indirect non-controlling interests have a share of the intermediate parent's profit or losses, it will also have to bear a share of the amortization of fair value adjustments that are borne by the intermediate parent. Hence, the effects of past cumulative and present amortization of fair value adjustments will be allocated to direct and indirect non-controlling interests. Illustration 7.3 shows and explains the allocation of the amortization of fair value adjustments, and provides another example of simultaneous consolidation.

Impact of Adjustments of Unrealized Profit on Indirect Non-controlling Interests

There is no fundamental difference in the treatment of unrealized profit on intercompany transfers. If the selling company within a group recognizes profit that is unrealized from the group perspective, the income allocated to non-controlling interests, both direct and indirect, of the selling company will be adjusted for any unrealized profit included in the net profit after tax. Furthermore, any unrealized profit included in opening retained earnings of the selling company will have to be borne by the controlling shareholders (through adjustment to opening retained earnings) and the non-controlling shareholders (both direct and indirect shareholders of the selling company). In a multi-tier group structure, the terms "upstream" and "downstream" should be interpreted in the broader sense. By "upstream" is meant a sale to the ultimate parent or its subsidiaries while "downstream" refers to a sale by the ultimate parent to its subsidiaries.

Analytical Checks on Consolidated Retained Earnings

In addition to analytically checking the direct and indirect non-controlling interests of subsidiaries, we can also check the consolidated retained earnings of direct and indirect subsidiaries from the ultimate parent's perspective. page 468
Essentially, the ultimate parent will have a share in the change of retained earnings from the date of acquisition to the end of the current reporting period, after eliminating current period dividend income and unrealized profit included in retained earnings.

page 469

The analytical check on consolidated retained earnings is a useful check to ascertain that only post-acquisition retained earnings of direct and indirect subsidiaries are included in consolidated retained earnings. This check may be used to indirectly affirm consolidated retained earnings and is a useful analytical check that may be applied, in addition to the analytical check on non-controlling interests.

The analytical check on consolidated retained earnings is the same as done in previous chapters. However, in a multi-level hierarchy, we include the ultimate parent's share of the indirect subsidiaries' post-acquisition retained earnings in the analysis. This is done by applying the ultimate parent's effective interest to the change in retained earnings of both direct and indirect subsidiaries from the date when the ultimate parent obtains control to the end of the year or reporting date.

The same principle applies to the other elements in the analytical check for consolidated retained earnings. We apply the ultimate parent's effective interest on the adjustments for unrealized profit from upstream transfers (for downstream transfers, the adjustment is 100%). We also apply the ultimate parent's effective percentage to work out the share of cumulative expensing or amortization of fair value adjustments for both direct and indirect subsidiaries.

Let us analyze the consolidated retained earnings in Illustration 7.3. In this example, there are no unrealized profit adjustments or cumulative expensing or amortization of fair value adjustments. In subsequent examples, we will show how these will be incorporated in the analytical process.

We determine the balance of the consolidated retained earnings by listing the legal entities' retained earnings balances and then showing the compilation of the consolidation adjustments that affect retained earnings.

Listing approach:

A's retained earnings as at 31 December 20x5		$12,000,000
B's retained earnings as at 31 December 20x5		9,000,000
C's retained earnings as at 31 December 20x5		7,940,000
CJE1	Elimination of pre-acquisition retained earnings of B	(5,900,000)
CJE1	Elimination of pre-acquisition retained earnings of C	(5,000,000)
CJE2	Allocation of post-acquisition retained earnings of B to B's NCI	(130,000)
CJE3	Allocation of post-acquisition retained earnings of C to direct NCI	(600,000)
CJE4	Allocation of post-acquisition retained earnings of C to indirect NCI	(140,000)
CJE5	Allocation of current profit to total NCI of C	(370,000)
CJE6	Allocation of current profit to B's NCI	(195,800)
CJE7	Elimination of dividends from C	18,000
CJE8	Elimination of dividends from B	20,000
Consolidated retained earnings as at 31 December 20x5		$16,642,200

Analytical check of consolidated retained earnings as at 31 December 20x5

A's retained earnings	$12,000,000
A's share of B's post-acquisition retained earnings (Note 1)	2,790,000
A's share of C's post-acquisition retained earnings (Note 2)	1,852,200
	$16,642,200

Note 1: 90% × ($9,000,000 – $5,900,000)

Note 2: 90% × 70% × ($7,940,000 – $5,000,000)

ILLUSTRATION 7.4 Simultaneous consolidation with fair value adjustments

Acquired company

	S Co	B Co
Acquirer	P Co	S Co
Date of acquisition	1 Jan 20x1	1 July 20x1
Percentage acquired	90%	60%
Direct non-controlling interests	10%	40%

The following information relates to the statements of financial position at the date of acquisition. (Net assets do not include goodwill and deferred tax on fair value adjustments).

	S Co Book value	S Co Fair value	B Co Book value	B Co Fair value
Intangible assets	$ 0	$ 250,000		
Inventory	400,000	450,000	$ 60,000	$ 55,000
Other net assets	900,000	900,000	100,000	100,000
Net assets	$1,300,000	$1,600,000	$160,000	$155,000
Share capital	1,000,000		50,000	
Retained earnings	300,000		110,000	
Equity	$1,300,000	$1,600,000	$160,000	$155,000
Fair value of NCI		$ 250,000		$ 80,000

The following financial statements relate to the year ended 31 December 20x3.

Income Statement and Partial Statement of Changes in Equity
For the Year Ended 31 December 20x3

	P Co	S Co	B Co
Sales	$4,000,000	$2,000,000	$400,000
Cost of sales	(1,500,000)	(1,000,000)	(240,000)
Gross profit	$2,500,000	$1,000,000	$160,000
Operating expenses net of other income	(930,000)	(700,000)	(100,000)
Net profit before tax	$1,570,000	$ 300,000	$ 60,000
Tax	(290,000)	(60,000)	(12,000)
Net profit after tax	$1,280,000	$ 240,000	$ 48,000
Dividends declared	(200,000)	(120,000)	(20,000)
Net profit attributable to shareholders	$1,080,000	$ 120,000	$ 28,000
Retained earnings, 1 January 20x3	2,500,000	500,000	250,000
Retained earnings, 31 December 20x3	$3,580,000	$ 620,000	$278,000

Statement of Financial Position
As at 31 December 20x3

	P Co	S Co	B Co
Investment in S Co	$2,500,000		
Investment in B Co		$ 300,000	

Other net assets	4,080,000	1,320,000	$328,000
	$6,580,000	$1,620,000	$328,000
Share capital	$3,000,000	$1,000,000	$ 50,000
Retained earnings	3,580,000	620,000	278,000
	$6,580,000	$1,620,000	$328,000

Additional information:

(a) Intangible assets of S Co were found to have an estimated useful life of five years from the date of acquisition by P Co. Amortization on a straight line basis was deemed to be the appropriate method of recognizing the decline in value.

(b) Inventory at the date of acquisition was sold off within the following financial period.

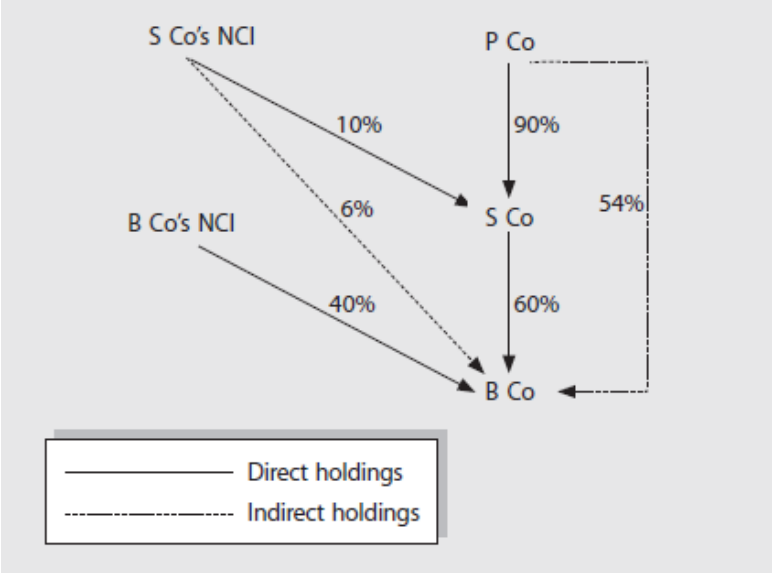
(c) There was no change in the share capital of the acquired companies from acquisition date.

(d) Assume a tax rate of 20% and recognize tax effects where appropriate.

Required:

1. Prepare consolidation adjustments for the year ended 31 December 20x3 using the simultaneous method of consolidation.
2. Perform an analytical check on the non-controlling interests of S Co and B Co as at 31 December 20x3.
3. Perform an analytical check on consolidated retained earnings as at 31 December 20x3.

Ownership structure of S Co and B Co



1. Consolidation adjustments

CJE1: Eliminate investment in S

Dr Share capital (S Co)	1,000,000	
Dr Retained earnings (S Co)	300,000	
Dr Goodwill	1,210,000	(Note 1)
Dr Intangible assets	250,000	

Dr Inventory	50,000		
Cr Deferred tax liability		60,000	
Cr Investment in S Co		2,500,000	
Cr Non-controlling interests		250,000	(Note 2)

Note 1:

$$\text{Goodwill} = \left(\begin{matrix}\text{Fair value of}\\ \text{acquisition cost}\end{matrix} + \begin{matrix}\text{Fair value of}\\ \text{non-controlling interests}\end{matrix}\right) - \text{Fair value of net identifiable assets}$$

$$= (\$2{,}500{,}000 + \$250{,}000) - (\$1{,}600{,}000 - \text{Deferred tax liability on fair value adjustments})$$
$$= \$2{,}750{,}000 - (\$1{,}600{,}000 - \$60{,}000)$$
$$= \$2{,}750{,}000 - \$1{,}540{,}000$$
$$= \$1{,}210{,}000$$

Deferred tax liability on fair value adjustments
= 20% * ($250,000 + $50,000)
= $60,000

Note 2:

Fair value of non-controlling interests as at acquisition date	$250,000
This comprises:	
Share of fair value of net identifiable assets (10% × $1,540,000)	$154,000
Share of goodwill ($250,000 – $154,000)	$ 96,000

CJE2: Recognize past amortization of intangible assets

Dr Opening retained earnings	90,000	
Dr Non-controlling interests	10,000	
Cr Accumulated amortization		100,000

CJE3: Recognize tax effects on past amortization of intangible assets

Dr Deferred tax liability	20,000	
Cr Opening retained earnings		18,000
Cr Non-controlling interests		2,000

CJE4: Recognize past cost of sales of undervalued inventory

Dr Opening retained earnings	45,000	
Dr Non-controlling interests	5,000	
Cr Inventory		50,000

CJE5: Recognize tax effects of past cost of sales of undervalued inventory

Dr Deferred tax liability	10,000	
Cr Opening retained earnings		9,000

Cr Non-controlling interests		1,000

CJE6: Recognize current amortization of recognized intangible assets

Dr Amortization of intangible assets	50,000	
Cr Accumulated amortization		50,000

CJE7: Recognize tax on current amortization of recognized intangible assets

Dr Deferred tax liability	10,000	
Cr Tax expense		10,000

CJE8: Allocate current profit after tax of S Co to non-controlling interests

Dr Income to non-controlling interests	18,800	
Cr Non-controlling interests		18,800

Net profit after tax (S)	$240,000
Less amortization of intangible assets (after-tax)	(40,000)
Less dividend income received from B Co	(12,000)
Adjusted profit after tax	$188,000
Non-controlling interests' share at 10%	$ 18,800

Dividend income received from B Co is included in the net profit after tax of S Co. Non-controlling interests of S Co recognize income from B based on the share of profit and not dividend income. The share of profit is recognized in CJE14; hence, dividend income included in net profit after tax of S should be removed to avoid double-counting of income.

CJE9: Eliminate dividend income against dividends declared

Dr Dividend income	108,000	
Dr Non-controlling interests	12,000	
Cr Dividends declared by S Co		120,000

CJE10: Recognize non-controlling interests' share of S Co's post-acquisition retained earnings up to 1 January 20x3

Dr Opening retained earnings	20,000	
Cr Non-controlling interests		20,000
Retained earnings of S Co at 1 January 20x3		$500,000
Retained earnings of S Co at acquisition date		300,000
Change in retained earnings		$200,000
Non-controlling interests' share at 10%		$ 20,000

CJE11: Eliminate investment in B

Dr Share capital (B Co)	50,000
Dr Retained earnings (B Co)	110,000

Dr Goodwill	224,000	(Note 1)		
Dr Deferred tax asset	1,000			
Cr Inventory			5,000	
Cr Investment in B Co			300,000	
Cr Non-controlling interests . . .			80,000	(Note 2)

Note 1:

$$\text{Goodwill} = \left(\begin{matrix}\text{Fair value of}\\ \text{consideration transferred}\end{matrix} + \begin{matrix}\text{Fair value of}\\ \text{non-controlling interests}\end{matrix}\right) - \text{Fair value of net identifiable assets}$$

$$= (\$300{,}000 + \$80{,}000) - (\$155{,}000 + \text{Deferred tax asset on fair value adjustments})$$
$$= \$380{,}000 - (\$155{,}000 + \$1{,}000)$$
$$= \$380{,}000 - \$156{,}000$$
$$= \$224{,}000$$

Deferred tax asset on overvaluation of inventory
$= 20\% \times \$5{,}000$
$= \$1{,}000$

Note 2:

Fair value of non-controlling interests as at acquisition date	$80,000
This comprises:	
Share of fair value of net identifiable assets (40% × $156,000)	$62,400
Share of goodwill ($80,000 – $62,400)	$17,600

CJE12: Adjust past decrease in cost of sales of overvalued inventory

Dr Inventory	5,000	
Cr Opening retained earnings		2,700
Cr Non-controlling interests		2,300

Opening retained earnings relate to the group's share of past profits, excluding non-controlling interests' share. As the group's interest in B is 54%, the adjustment to opening retained earnings is 54% of $5,000 or $2,700. Of the $5,000 amortization charge made in a previous period, 40% is allocated to direct non-controlling interests. Of the 60% that is borne by the intermediate parent, indirect non-controlling interests effectively shares 6% of the amortization of fair value adjustment. Hence, 46% of the past adjustment or $2,300 is allocated to non-controlling interests under simultaneous consolidation.

CJE13: Adjust tax on past cost of sales of overvalued inventory

Dr Opening retained earnings	540	
Dr Non-controlling interests	460	
Cr Deferred tax asset		1,000

CJE14: Allocate current profit after tax of B Co to non-controlling interests

Dr Income to non-controlling interests	22,080

Cr Non-controlling interests	22,080	
Net profit after tax (B Co)	$48,000	
Non-controlling interests' share of B Co	$22,080	(46% × $48,000)
Direct non-controlling interests' share	40%	
Indirect non-controlling interests' share	6%	
Total non-controlling interests	46%	

Total non-controlling interests of 46% is applied to B's net profit after tax. As overvalued inventory was sold in a previous year, current adjustment to net profit after tax is not necessary.

CJE15: Eliminate dividend income against dividends declared

Dr Dividend income	12,000	
Dr Non-controlling interests	8,000	
Cr Dividends declared by B		20,000

CJE16: Allocate change in retained earnings of B Co to non-controlling interests

Dr Opening retained earnings	64,400	
Cr Non-controlling interests		64,400

In this example, S acquired B on 1 July 20x1, after S was acquired by P. Non-controlling interests of S will have an interest in the change of retained earnings of B from 1 July 20x1. Both direct and indirect non-controlling interests may be combined.

Retained earnings of B at 1 January 20x3	$250,000
Retained earnings of B at 1 July 20x1	110,000
Change in retained earnings	$140,000
Direct and indirect non-controlling interests' share at 46%	$ 64,400

2. Analytical check on non-controlling interests of S Co and B Co

We show below the analytical check on the balances of non-controlling interests of S Co and B Co. S Co has an indirect interests in B Co. The analytical check on the balance of non-controlling interests in S Co can be done as a whole. There is no need to separate consolidation adjustments into direct and indirect non-controlling interests, since the investors are the same (i.e., investors in S Co are also indirect investors in B Co). The combined total of the consolidation adjustments can be analyzed as a unit. However, for purposes of a deeper explanation, we show the separation below with respect to the consolidation adjustments.

	Total non-controlling interests	Direct non-controlling interests	Indirect non-controlling interest
Relating to S Co			
CJE1: Non-controlling interests at acquisition date	$250,000	$250,000	
CJE2: Share of past amortization	(10,000)	(10,000)	
CJE3: Share of tax on past amortization	2,000	2,000	

CJE4: Share of adjustment to past cost of sales	(5,000)	(5,000)	
CJE5: Share of tax on adjustment to past cost of sales	1,000	1,000	
CJE8: Share of adjusted current profit after tax (Note 1)	18,800	20,000	(1,200)
CJE9: Dividends paid to non-controlling interests	(12,000)	(12,000)	
CJE10: Share of post-acquisition retained earnings	20,000	20,000	
Less Share of investment in B Co (Note 2)		(30,000)	30,000
	$264,800	$236,000	$28,800
Relating to B Co			
CJE11: Non-controlling interests at acquisition date	$ 80,000	$ 80,000	
CJE12: Share of past cost of sales adjustment of overvalued inventory	2,300	2,000	$ 300
CJE13: Share of tax on past cost of sales adjustment of overvalued inventory	(460)	(400)	(60)
CJE14: Share of adjusted current profit after tax	22,080	19,200	2,880
CJE15: Dividends paid to non-controlling interests	(8,000)	(8,000)	
CJE16: Non-controlling interests' share of post-acquisition retained earnings	64,400	56,000	8,400
Non-controlling interests as at 31 December 20x3	$160,320	$148,800	$11,520
Total non-controlling interests as at 31 December 20x3	$425,120	$384,800	$40,320

Note 1: Dividend income from B Co of $12,000 is eliminated from share of current profit of S Co. The reduction of $1,200 (10% of $12,000) is effectively a reduction of the indirect interests in B Co.

Note 2: When S Co acquired B Co, the non-controlling interests of S Co had a share of 10% of this initial investment in B Co. The share of initial investment in B Co relates to the indirect interests in B Co and is therefore presented under that column. The share of initial investment of $30,000 is analogous to the fair value of non-controlling interests in the indirect subsidiary at acquisition date. However, in this scenario, S Co acquired B Co after P Co acquired S Co.

Direct non-controlling interests' share of B Co as at 31 December 20x3

Book value of net identifiable assets of B Co	$328,000
Unamortized fair value adjustments	0
Adjusted book value of net identifiable assets	$328,000
Direct non-controlling interests' share at 40%	$131,200
Direct non-controlling interests' share of goodwill (refer to CJE11 Note 2)	17,600
Direct non-controlling interests' balance	$148,800

Direct non-controlling interests in S Co	10%	
Book value of equity of S Co	$1,620,000	
Less Investment in B Co	300,000	
	$1,320,000	
Share of book value of equity of S Co		$132,000
Unamortized balance of intangible assets, after-tax	80,000	

NCI's share of balance of intangible assets, after-tax		8,000	
Goodwill attributable to non-controlling interests		96,000	
		$236,000	
Indirect non-controlling interests in B Co 10%*60%	6%		
Book value of equity of B Co	$ 328,000		
Share of book value of equity of B Co		$ 19,680	6%*328,000
S's Investment in B Co	300,000		
Less S's share of fair value of B's identifiable net assets	93,600		60%*156,000
S's goodwill in B Co	206,400		
NCI's Share of S's goodwill in B Co		20,640	10%*206,400
		$ 40,320	
Total balance of non-controlling interests		$425,120	

Explanatory notes:

- Direct non-controlling interests of B Co can be checked in the normal way, that is, with reference to the book value of net assets, adjustments for unrealized profit at the end of the year and unamortized balance of fair value adjustments of B Co and non-controlling interests' share of goodwill. In this example, there are no adjustments for unrealized profit at the end of the year or unamortized balance of fair value adjustments. Hence, the year-end balance of direct non-controlling interests is solely explained by their share of the book value of net assets and goodwill.

3. Analytical check on consolidated retained earnings as at 31 December 20x3

The consolidated retained earnings balance is shown in the consolidation worksheets in the following pages. However, we can also compile the balance through the listings approach. In this illustration, we will use the balance as shown in the worksheet.

Consolidated retained earnings as		
per consolidation worksheets	$3,816,880	
Analytical check of consolidated retained earnings:		
P's retained earnings as at 31 December 20x3	$3,580,000	
P's share of S's post-acquisition retained earnings	288,000	90%*(620,000-300,000)
P's share of B's post-acquisition retained earnings	90,720	54%*(278,000-110,000)
Add/(less) P's share of:		
S's amortization of intangible assets, after tax	(108,000)	90%*80%*250,000/5*3
S's cost of sales of undervalued inventory, after tax	(36,000)	90%*80%*50,000
B's cost of sales of overvalued inventory, after tax	2,160	54%*80%*5,000
Consolidated retained earnings as at 31 December 20x3	$3,816,880	

Consolidation Worksheets with Simultaneous Consolidation

Worksheets are prepared in the normal way, except that in simultaneous consolidation, all the subsidiaries, including the indirectly owned subsidiaries, will be included in the same worksheet. The following consolidation worksheet example is based on Illustration 7.4.

Income Statement
For the Year Ended 31 December 20x3

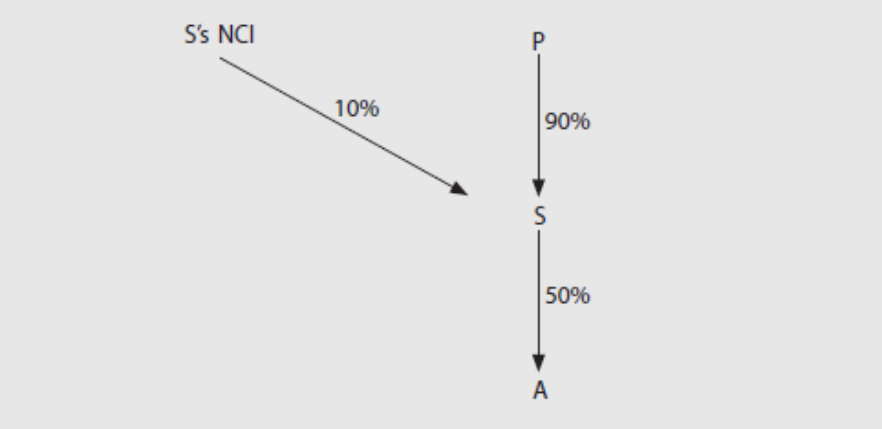
				Consolidation adjustments				
	P Co	S Co	B Co	Dr	CJE#	Cr	CJE#	Consolidated I/S
Sales	$4,000,000	$2,000,000	$400,000					$6,400,000
Cost of sales	(1,500,000)	(1,000,000)	(240,000)					(2,740,000)
Gross profit	$2,500,000	$1,000,000	$160,000					$3,660,000
Operating expenses net of other income	(930,000)	(700,000)	(100,000)	$ 50,000	CJE6			(1,900,000)
				108,000	CJE9			
				12,000	CJE15			
Net profit before tax	$1,570,000	$ 300,000	$ 60,000					$1,760,000
Tax	(290,000)	(60,000)	(12,000)			$ 10,000	CJE7	(352,000)
Net profit after tax	$1,280,000	$ 240,000	$ 48,000					$1,408,000
Non-contolling interests				18,800	CJE8			(40,880)
				22,080	CJE14			
Net profit after non-controlling interests								$1,367,120
Dividends declared	(200,000)	(120,000)	(20,000)			120,000	CJE9	(200,000)
						20,000	CJE15	
Net profit attributable to shareholders	$1,080,000	$ 120,000	$ 28,000					$1,167,120
Retained earnings, 1 January 20x3	2,500,000	500,000	250,000	300,000	CJE1			2,649,760
				90,000	CJE2			
				45,000	CJE4			
				20,000	CJE10	18,000	CJE3	
				110,000	CJE11	9,000	CJE5	
				540	CJE13			
				64,400	CJE16	2,700	CJE12	
Retained earnings, 31 December 20x3	$3,580,000	$ 620,000	$278,000	$840,820	To SFP	$179,700	To SFP	$3,816,880

Statement of Financial Position As at 31 December 20x3								
				Consolidation adjustments				Consolidated SFP
	P Co	S Co	B Co	Dr		Cr		
Investment in S Co	$2,500,000					$2,500,000	CJE1	
Investment in B Co		$300,000				300,000	CJE11	
Other net assets	4,080,000	1,320,000	$328,000	$ 250,000	CJE1	60,000	CJE1	$5,808,000
				50,000	CJE1	100,000	CJE2	
				20,000	CJE3	50,000	CJE4	
				10,000	CJE5	50,000	CJE6	
				10,000	CJE7	5,000	CJE11	
				1,000	CJE11	1,000	CJE13	
				5,000	CJE12			
Goodwill				1,210,000	CJE1			1,434,000
				224,000	CJE11			
	$6,580,000	$1,620,000	$328,000	$1,780,000		$3,066,000		$7,242,000
Share capital	$3,000,000	$1,000,000	$50,000	$1,000,000	CJE1			$3,000,000
				50,000	CJE11			
Retained earnings	3,580,000	620,000	278,000	840,820	From I/S	$ 179,700	From I/S	3,816,880
Non-controlling interests				10,000	CJE2	250,000	CJE1	425,120
				5,000	CJE4	2,000	CJE3	
				12,000	CJE9	1,000	CJE5	
				460	CJE13	18,800	CJE8	
				8,000	CJE15	20,000	CJE10	
						80,000	CJE11	
						2,300	CJE12	
						22,080	CJE14	
						64,400	CJE16	
	$6,580,000	$1,620,000	$328,000	$1,926,280		$ 640,280		$7,242,000
				$3,706,280		$3,706,280		

INDIRECT HOLDING OF ASSOCIATES

An “indirect” associate may arise from the affiliation structures shown in Figures 7.8 and 7.9.

FIGURE 7.8 Indirect holding of an associate through a subsidiary

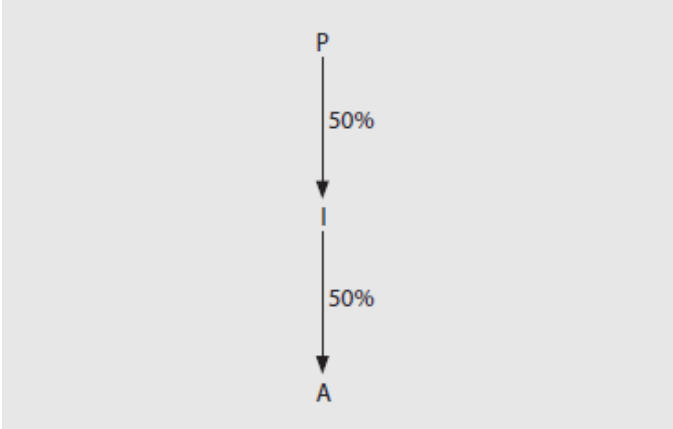


In Figure 7.8, A is an indirect associate of P, if we assume that control and significant influence are evidenced by the percentage of voting rights held by P and S, respectively.

1. As a result of the existence of non-controlling interests in S, P should not equity-account its indirect interest (i.e., 45%) in the net profit before tax and the tax expense of A. In recognizing only the net effects of P's indirect interest in A, the portion that relates to non-controlling interests is not included in the income allocated to non-controlling interests in the consolidated income statement of P. This presentation is not in accordance with the consolidation requirement that the consolidated profit after tax must show the total gross amount before allocating to non-controlling interests, and that non-controlling interests in the profit or loss of the consolidated subsidiaries are shown separately.
2. Thus, the consolidated profit before tax and the consolidated tax expense should include S's share (i.e., 50%) of A's profit before tax and tax expense, respectively. Income allocated to non-controlling interests in the consolidated income statement should include non-controlling interests' share of the equity-accounted profit after tax of A (i.e., 50% of the net profit after tax of A multiplied by 10% or effectively 5% of A's net profit after tax).
3. Since non-controlling interests' share in a subsidiary's profits is presented on an after-tax basis, the allocation of non-controlling interests' share of equity-accounted profit of a subsidiary's associate should also be on an after-tax basis.

Illustration 7.5 explains the application of the above principles. Figure 7.9 shows a different arrangement whereby P has an interest in A through an intermediate associate company, I.

FIGURE 7.9 Indirect holding through an associate



IAS 28 paragraph 5 presumes that an investor has significant influence if the investor holds, directly or indirectly (e.g., through subsidiaries), 20% or more of the voting power of the investee, unless it can be clearly demonstrated that no such influence exists. In Figure 7.9, P has significant influence but not control over I. Although I is not a subsidiary of P and the ownership structure is obviously not as strong as in Figure 7.8 to support P having indirect significant influence over A, all other available evidence as enumerated in IAS 28 paragraph 6 must be considered to determine whether A is an indirect associate of P.

Assuming that P has significant influence over A, the following procedures will apply if P applies "simultaneous" equity accounting:

1. Note that P needs to prepare two sets of financial statements, even though it does not have subsidiaries. One set is the separate financial statements of P as a legal entity, wherein investments in associates are carried at either cost or in accordance with IFRS 9 *Financial Instruments* or using the equity method. The other set is the financial statements of P and its associates as an economic entity in which investments in I and A are accounted for using the equity method.
2. Since I is an associate of P, non-controlling interests do not feature in the financial statements of P as an economic entity.
3. In the absence of non-controlling interests, P equity accounts its indirect interest in A's profit by applying 25% (50% × 50%) to A's profit after tax.
4. P also equity accounts its direct interest in I's profit in the usual way. However, any dividend income from A included in I's profit should be removed to avoid recognizing income in two forms since P is indirectly equity accounting the profit of A.
5. P shows only the investment in I on its statement of financial position. In its equity-accounted financial statements, the investment in I will include the share of post-acquisition retained earnings of both I and A.
6. The difference in effects between the structures in Figures 7.8 and 7.9 is essentially one of presentation whereby an indirect interest through a subsidiary requires recognition of the subsidiary's share of the associate's profit and a separate allocation to non-controlling interests. When indirect interest in an associate is held through another associate, the effective interest may be applied directly to the profit of the lower-tiered associate by the ultimate investor. The final effect to the economic entity's retained earnings is the same under either structure, although the presentation in the income statement differs.

ILLUSTRATION 7.5 Indirect holding of an associate held through a subsidiary

P acquired a 60% interest in S. S subsequently acquired a 30% interest in A. Shareholders' equity at the date of acquisition is shown below. Fair value adjustments at the date of acquisition were negligible. The fair value of S Co as an entity as at date of acquisition was $10,900,000 and the fair value of non-controlling interests at that date was $4,400,000.

	S	A
Share capital at acquisition date	$5,000,000	$1,000,000
Retained earnings at acquisition date	3,000,000	200,000
Shareholders' equity at acquisition date	$8,000,000	$1,200,000
Date of acquisition by investing company	30 July 20x2	4 May 20x3

Extracts of the financial statements of P, S, and A for the year ended 31 December 20x5 are shown below.

Income Statement
For the Year Ended 31 December 20x5

	P	S	A

Net profit before tax	$11,982,000	$ 997,000	$250,000
Tax	(2,382,000)	(197,000)	(50,000)
Net profit after tax	$ 9,600,000	$ 800,000	$200,000
Dividends declared	(1,500,000)	(120,000)	(40,000)
Profit retained	$ 8,100,000	$ 680,000	$160,000
Retained earnings, 1 January 20x5	30,000,000	4,500,000	300,000
Retained earnings, 31 December 20x5	$38,100,000	$5,180,000	$460,000

Statement of Financial Position
As at 31 December 20x5 (extract)

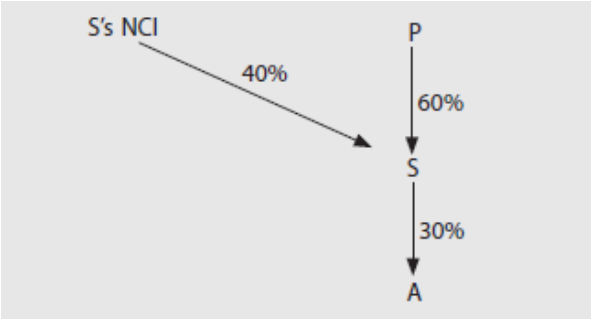
	P	S	A
Investment in S, cost	$ 6,500,000		
Investment in A, cost		$ 1,000,000	
Other net assets	81,600,000	9,180,000	$1,460,000
	$88,100,000	$10,180,000	$1,460,000
Shareholders' equity:			
Share capital	$50,000,000	$ 5,000,000	$1,000,000
Retained earnings	38,100,000	5,180,000	460,000
	$88,100,000	$10,180,000	$1,460,000

The tax rate was 20%.

Required:

1. Prepare the consolidation and equity accounting entries for 20x5.
2. Prepare the consolidation worksheets for 20x5.
3. Perform an analytical check on the balances as at 31 December 20x5 in the consolidated balance sheet with respect to non-controlling interests and the investment in A.

The affiliation structure is shown below. Non-controlling interest in S is 40%.



1. Consolidation and equity entries for 20x5

CJE1: Elimination of investment in S

Dr Share capital (S)	5,000,000			
Dr Retained earnings (S)	3,000,000			
Dr Goodwill	2,900,000	(Note 1)		
Cr Investment in S			6,500,000	
Cr Non-controlling interests			4,400,000	(Note 2)

Note 1:

$$\text{Goodwill} = \left(\begin{array}{c}\text{Fair value of}\\ \text{consideration transferred}\end{array} + \begin{array}{c}\text{Fair value of}\\ \text{non-controlling interests}\end{array}\right) - \text{Fair value of net identifiable assets}$$

$$= (\$6{,}500{,}000 + \$4{,}400{,}000) - \$8{,}000{,}000$$
$$= \$10{,}900{,}000 - \$8{,}000{,}000$$
$$= \$2{,}900{,}000$$

Note 2:

Fair value of non-controlling interests as at acquisition date	$4,400,000
This comprises:	
Share of fair value of net identifiable assets (40% × $8,000,000)	3,200,000
Share of goodwill ($4,400,000 – $3,200,000)	1,200,000

CJE2: Allocation of post-acquisition retained earnings of S to non-controlling interests

Dr Retained earnings (S)	600,000	
Cr Non-controlling interests		600,000

Retained earnings at 1 January 20x5	$4,500,000
Retained earnings at acquisition	(3,000,000)
Change	$1,500,000
Non-controlling interests' share at 40%	$ 600,000

CJE3: Elimination of dividend income received from S

Dr Dividend income (P)	72,000	($120,000 × 0.6)	
Dr Non-controlling interests	48,000	($120,000 × 0.4)	
Cr Dividends declared (S)			120,000

CJE4: Equity accounting of profits by S

Dr Investment in A	60,000	($200,000 × 0.3)	
Cr Share of profit of A			60,000

As explained in Chapter 6, the illustrative guidance of IAS 1 presents share of profit of associate as an after-tax basis. Although the guidance is not an integral part of the standard, this presentation has become general practice although conceptually confounding.

CJE5: Allocation of current profit after tax to non-controlling interests

Dr Income to non-controlling interests	339,200		
Cr Non-controlling interests		339,200	

Net profit after tax of S	$800,000	
Less dividend income from A	(12,000)	($40,000 × 0.3)
Add share of profit after tax of A	60,000	
Net profit after tax of S excluding dividend from A	$848,000	
Non-controlling interests' share at 40%	$339,200	

Dividend income from A is removed from profit for determination of non-controlling interests' share of current profit as profit is recognized in the form of equity-accounted profit.

CJE6: Reclassification of dividend from A

Dr Dividend income (S)	12,000	($40,000 × 0.3)	
Cr Investment in A			12,000

CJE7: Share of post-acquisition retained earnings of A

Dr Investment in A	30,000		
Cr Retained earnings		18,000	($30,000 × 0.6)
Cr Non-controlling interests		12,000	($30,000 × 0.4)

Retained earnings of A at 1 January 20x5	$300,000
Retained earnings of A at acquisition date	(200,000)
Change in retained earnings	$100,000
S's share at 30%	$ 30,000

S's share of the change in the post-acquisition retained earnings of A is allocated to the controlling interest in S and to its non-controlling interests. The allocation to the opening retained earnings represents the parent's share. The change in retained earnings in CJE7 includes the net effect of the cumulative profit of A and the cumulative dividends declared by A since the acquisition date. Hence, CJE7 re-enacts the cumulative effects of yearly equity accounting entries passed through the consolidation worksheet each year.

2. Consolidation worksheets for 20x5

Income Statement For the Year Ended 31 December 20x5								
				Consolidation adjustments				
	P	S	Combined P and S	Dr		Cr		Consolidated totals
Net profit before tax	$11,982,000	$ 997,000	$12,979,000	$ 72,000	CJE3			$12,955,000
				12,000	CJE6	$ 60,000	CJE4	
Tax	(2,382,000)	(197,000)	(2,579,000)					(2,579,000)
Net profit after tax	$ 9,600,000	$ 800,000	$10,400,000					$10,376,000
Non-controlling interests				339,200	CJE5			(339,200)
Net profit after non-controlling interests								$10,036,800
Dividends declared	(1,500,000)	(120,000)	(1,620,000)			120,000	CJE3	(1,500,000)
Profit retained	$ 8,100,000	$ 680,000	$ 8,780,000					$ 8,536,800
Retained profit, 1 January 20x5	30,000,000	4,500,000	34,500,000	3,000,000	CJE1	18,000	CJE7	30,918,000
				600,000	CJE2			
Retained profit, 31 December 20x5	$38,100,000	$5,180,000	$43,280,000	$4,038,200	To SFP	$213,000	To SFP	$39,454,800

Statement of Financial Position (extract) As at 31 December 20x5								
				Consolidation adjustments				
	P	S	Combined P and S	Dr		Cr		Consolidated totals
Investment in S, cost	$ 6,500,000		$ 6,500,000			$ 6,500,000	CJE1	$ 0
Investment in A, cost		$ 1,000,000	1,000,000	$ 60,000	CJE4	12,000	CJE6	1,078,000
				30,000	CJE7			
Goodwill on consolidation				2,900,000	CJE1			2,900,000
Other net assets	81,600,000	9,180,000	90,780,000					90,780,000
Net assets	$88,100,000	$10,180,000	$98,280,000	$2,990,000		$ 6,512,000		$94,758,000
Shareholders' equity:								
Share capital	$50,000,000	$ 5,000,000	$55,000,000	$ 5,000,000	CJE1			$50,000,000
Retained earnings	38,100,000	5,180,000	43,280,000	4,038,200	I/S	$ 213,000	I/S	39,454,800
	$88,100,000	$10,180,000	$98,280,000					
				48,000	CJE3	4,400,000	CJE1	
Non-controlling interests						600,000	CJE2	5,303,200
						339,200	CJE5	
						12,000	CJE7	
Total equity	$88,100,000	$10,180,000	$98,280,000	$ 9,086,200		$ 5,564,200		$94,758,000
				$12,076,200		$12,076,200		

3. Analytical checks

Analytical check on non-controlling interests of S as at 31 December 20x5

Share capital (S) . . . . . $ 5,000,000

Retained earnings (S)	5,180,000	
Unadjusted shareholders' equity of S	$10,180,000	
S's share of A's post-acquisition retained earnings	78,000	(Note 1)
Adjusted shareholders' equity of S	$10,258,000	
Non-controlling interests' share at 40%	$ 4,103,200	
Non-controlling interests' share of goodwill (refer to CJE 1 Note 2)	1,200,000	
Non-controlling interests as at 31 December 20x5	**$ 5,303,200**	

Note 1: S's share of change in A's post-acquisition retained earnings = 30% * ($460,000 — $200,000) = $78,000.

Analytical check on investment in A as at 31 December 20x5

Shareholders' equity of A as at 31 December 20x5	$1,460,000
S's interest in the net book value as at 31 December 20x5 (at 30%)	$ 438,000
Goodwill implicit in the investment account ($1,000,000 – (30% × $1,200,000))	640,000
Investment in A	**$1,078,000**

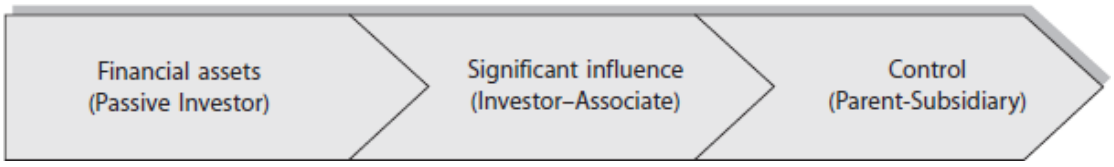
Note: If there is a fair value differential, S's share of the unamortized balance should be included in the check.

CHANGES IN OWNERSHIP INTERESTS

Intercorporate relationships change with facts and circumstances relating to the rights that the investor has over the investee. We can think of the strength and intensity of the relationships along a continuum. We saw in Chapter 2 that existing rights that give the investor the current ability to direct relevant activities and expose or entitle the investor to variable returns leads to control over the investee. Control is the basis for the strongest intercorporate relationship between investor and investee. IFRS 10 *Consolidated Financial Statements* provides the principles to determine the existence of control. When significant influence ends, control begins.

We saw in Chapter 6 that significant influence gives the investor the power to participate in financial and operating policy-making processes but does not give the investor the right to control or jointly control the outcome of those processes. IAS 28 *Investments in Associates and Joint Ventures* provides the basis for determining significant influence. In the absence of control, significant influence or joint control, the investor holds the investments as financial assets and applies the requirements of IFRS 9 *Financial Instruments* to those investments. Figure 7.10 shows the intercorporate relationships along a continuum. For simplicity, we do not show joint control as a separate component.

FIGURE 7.10 Intercorporate relationships



Intercorporate relationships change over time when facts and circumstances change the rights of the investor. We focus on four broad changes:

1. Business combination achieved in stages
2. Loss of control
3. Changes in ownership interests without change in control
4. No change in significant influence

BUSINESS COMBINATION ACHIEVED IN STAGES

A parent may achieve control in a subsidiary only after acquiring additional block(s) of shares to complement its existing holdings. Achieving control through incremental purchases is sometimes referred to as a "business combination achieved in stages" or a "step acquisition." Significant changes have been made in the revised IFRS 3 (2008) to determine fair value of goodwill at acquisition date when control is obtained as opposed to IFRS 3 (2004) that recognizes goodwill in a piecemeal manner at the date of each incremental purchase.

Remeasurement of Previously Held Equity Interest

The revised IFRS 3 (2008) requires the following remeasurement procedures to be applied to a business combination achieved in stages:

1. Previously held equity interest in the acquiree must be remeasured to fair value at acquisition date when control is obtained. Hence, even though there is no exchange transaction relating to previously held equity interest, the revised IFRS 3 requires the remeasurement of existing holdings to fair value. The remeasurement is necessary to enable the determination of a goodwill figure that is up-to-date and consistent with the fair value information existing at acquisition date when control is obtained. Under the previous IFRS 3 (2004), goodwill on the statement of financial position is a combination of historical goodwill arising from past holdings and current goodwill arising from the latest incremental purchase. Thus, under IFRS 3 (2004), goodwill was fragmented and did not reflect fair value at acquisition date.
2. Gains or losses arising from the remeasurement to fair value of previously held equity interest above are recognized in profit or loss in accordance with IFRS 3 paragraph 42.

   Remeasurement gains or losses = Remeasured fair value of previously held equity interest
   – Carrying amount of previously held equity interest

   In the consolidated financial statements of the acquirer, investment held of existing equity is remeasured to fair value at subsequent acquisition date(s) and the unrealized gains or losses are taken to income statement. page 490 Thus, an investment in a subsidiary is carried at the fair value at the date of acquisition of control. A noteworthy feature is that gains and losses are taken to income statement and not directly to equity. The rationale for the remeasurement is that a significant economic event has occurred, that is, the acquisition of control. Hence, in substance, there are effectively two transactions – effectively a sale of a previously held interests and a purchase of a new interest in a subsidiary. There is a fundamental change in relationship between the investor and the investee. The investee is no longer a passive investment or an associate. It has become a subsidiary through the incremental purchases by the investor. The moment it crosses the control boundary, it becomes a subsidiary. Hence, we can see it as two transactions. A previously held investment (e.g., an associate) is "sold" and a new investment (a subsidiary) is "bought." Let us take an example. Parent Co bought 20% interest in S Co on 1 July 20x1 and another 25% on 16 October 20x3. On 5 March 20x4, it acquired an additional 40% which gave Parent Co control over S Co. On 5 March 20x4, the previously held interests of 45% have to be remeasured to fair value and a remeasurement gain or loss has to be recognized. There are two effects of this remeasurement. First, the effect is as if Parent Co had sold 45% of the investment, recognizing a gain or loss in income statement. The second effect is that the cumulative investment of 85% is now carried at fair value on acquisition date.
3. If the acquirer has, in prior periods, recognized changes in value of its equity interest in the acquiree in other comprehensive income, the cumulative amount that was recognized directly in other comprehensive income will be accounted for in a manner as if the acquirer had disposed of the previously held equity interests (IFRS 3:42). Under IFRS 9, the fair value change of an equity investment that is classified as fair value through other comprehensive income would not be reclassified to income statement on disposal. If the entity elects to measure the cost of

investment using fair value as deemed cost in the separate financial statements, the entity may transfer the cumulative fair value gains or losses to retained earnings on "deemed disposal" of the investment if these changes were previously recognized in a separate component of equity. Under this accounting policy choice, the cost of investment in the subsidiary is derived as the sum of the fair value of the initial interest at the date of obtaining control of the subsidiary, plus any consideration paid for the additional interest. Conversely, if the entity elects to use the accumulated cost approach in measuring its cost of investment, the entity will have to 'unwind' the fair value changes previously recognized for the original interest in the subsidiary. Under this approach, the cost of investment is the sum of the consideration paid for the initial interest and the consideration paid for the additional interest. The difference between the fair value of the initial interest at the date of obtaining control of the subsidiary and its original consideration paid is recognized in profit or loss.

Determination of Goodwill in a Business Combination Achieved in Stages

If business combination is achieved in stages, the goodwill calculation will include a new element, the fair value of previously held interests as follows:

$$\text{Goodwill} = \left(\begin{array}{c}\text{Fair value of}\\ \text{consideration}\\ \text{transferred}\end{array} + \begin{array}{c}\text{Amount of}\\ \text{non-controlling}\\ \text{interests}\end{array} + \begin{array}{c}\text{Acquisition-date fair value of the}\\ \text{acquirer's previously held equity}\\ \text{interest in the acquiree}\end{array} \right) - \text{Fair value of net identifiable assets of the acquiree at the acquisition date}$$

Illustration 7.6 shows the application of IFRS 3 in the consolidated financial statements of an acquirer in a business combination achieved in stages.

ILLUSTRATION 7.6 Business combination achieved in stages

P acquired S in two successive purchases as follows:

Date	Acquisition cost paid for incremental investment	Fair value of S as an entity	Percentage acquired in incremental investment	Cumulative percentage held by P
1 Jan 20x0	$ 3,000,000	$15,000,000	20%	20%
31 Dec 20x0	$12,000,000	$20,000,000	60%	80%

Non-controlling interests are measured at fair value and are deemed to have a proportionate interest in the fair value of S as an entity. Information relating to S is as follows:

	1 Jan 20x0 Book value	1 Jan 20x0 Fair value	31 Dec 20x0 Book value	31 Dec 20x0 Fair value
Intangible assets	$ 0	$ 1,800,000	$ 0	$ 1,600,000
Inventory	1,000,000	1,200,000	2,000,000	2,400,000
Other net assets	9,000,000	9,000,000	12,000,000	12,000,000
Net identifiable assets	$10,000,000	$12,000,000	$14,000,000	$16,000,000
Share capital	$ 4,000,000		$ 4,000,000	
Retained earnings	6,000,000		10,000,000	
	$10,000,000		$14,000,000	

Net profit before tax for the year ended 31 December 20x0 . . . . . $6,250,000

Tax expense for the year ended 31 December 20x0 . . . . . $1,250,000

Dividends declared during the year ended 31 December 20x0 . . . . . $1,000,000

Intangible assets had a remaining useful life of six years from 1 January 20x0
Inventories were sold within three months from the acquisition date

In the separate financial statements of P, the journal entries are as follows:

1 January 20x0

Dr Investment in S	3,000,000	
Cr Cash		3,000,000

Acquisition of 20% of S at fair value

31 December 20x0

Dr Investment in S	12,000,000	
Cr Cash		12,000,000

Acquisition of an additional 60% of S at fair value

Since P had 20% equity interest in S during 20x0 and assuming that P had significant influence over S, P had to equity account S's profit for the year ended 31 December 20x0. The equity accounting (EA) entries and consolidation journal entries (CJE) are as follows:

EA1: Share of profit for the year ended 31 December 20x0

Dr Investment in S	920,000	
Cr Share of profit		920,000
Profit after tax of S	$5,000,000	
Less amortization of intangible assets, after tax	(240,000)	
Less cost of sales from undervalued inventory, after tax	(160,000)	
Adjusted profit after tax	$4,600,000	
Share of S's profit after tax at 20%	$ 920,000	

EA2: Reclassification of dividend income received during 20x0

Dr Dividend income	200,000	
Cr Investment in S		200,000

The reconstructed investment in S account as at 31 December 20x0 is as follows:

Investment in S (Consolidated financial statements)					
1 Jan 20x0	Cash	3,000,000	31 Dec 20x0	Dividends	200,000
31 Dec 20x0	Cash	12,000,000		Balance	16,000,000
	Share of profit after tax	920,000			
	Remeasurement gain	280,000			

Carrying amount of the previously held equity interests at consolidated level
= $3,000,000 + $920,000 – $200,000
= $3,720,000

Fair value of previously-held equity interests = $4,000,000 (20% × $20,000,000)

Remeasurement gain on previously held equity interests at consolidated level
= $4,000,000 – $3,720,000
= $280,000

For simplicity, we assume that the remeasurement gain is tax-exempt. The next entry recognizes the remeasurement gain at the consolidated level.

EA3: Recognition of remeasurement gain in the consolidated financial statements

Dr Investment in S	280,000	
Cr Gain on remeasurement		280,000

The balance of investment in S, just prior to elimination in CJE1, is shown below. Note that the balance is $16,000,000 which is proportionate to fair value of S as an entity. Because of the control premium that a parent may pay to acquire a controlling interest in a subsidiary, the parent's share (and hence the non-controlling interests' share) need not be proportionate to the fair value of the subsidiary. At acquisition date,

Balance of an investment in a subsidiary acquired in stages = Fair value of consideration transferred on acquisition date + Fair value of previously held equity interests

Investment in S (Consolidated financial statements)					
1 Jan 20x0	Cash	3,000,000	31 Dec 20x0	Dividends	200,000
31 Dec 20x0	Cash	12,000,000		Balance	16,000,000
	Share of profit after tax	920,000			
	Remeasurement gain	280,000			

With the obtaining of control on 31 December 20x0, the investment balance has to be eliminated and goodwill recognized on acquisition date. The elimination entry is as follows:

CJE1: Elimination of investment and

recognition of goodwill

Dr Share capital	4,000,000			
Dr Retained earnings	10,000,000			
Dr Goodwill	4,400,000	(Note 3)		
Dr Intangible assets	1,600,000			
Dr Inventory	400,000			
Cr Deferred tax liability			400,000	(Note 1)
Cr Investment in S			16,000,000	
Cr Non-controlling interests			4,000,000	(Note 2)

Note 1: Deferred tax liability = 20% × Fair value adjustments of $2,000,000
= $400,000

Note 2: Non-controlling interests have to be recognized on 31 December 20x0. The non-controlling interests in this question have a proportionate interest in the fair value of S as an entity.

Non-controlling interests = 20% × Fair value of S as an entity
= 20% × $20,000,000
= $4,000,000

Note 3: Fair value of net identifiable assets = $16,000,000 – Deferred tax liability of $400,000
= $15,600,000

$$\text{Goodwill} = \left(\begin{array}{l} \text{Fair value of consideration transferred at acquisition date} \quad \text{Fair value of non-controlling interests} \quad \text{Fair value of the acquirer's previously held equity interest in the acquiree at acquisition date} \\ - \text{ Fair value of net identifiable assets} \end{array} \right)$$

= ($12,000,000 + $4,000,000 +$4,000,000) – $15,600,000
= $20,000,000 – $15,600,000
= $4,400,000

Fair value of P's previously held interests is 20% of the fair value of S as an entity of $20,000,000.

In the subsequent year ended 31 December 20x1, equity accounting entries are re-enacted to retained earnings to reinstate opening consolidated retained earnings.

EA1: Equity accounting of post-acquisition retained earnings

Dr Investment in S	720,000	
Cr Opening retained earnings		720,000

Retained earnings as at 31 December 20x0	$10,000,000
Retained earnings as at 1 January 20x0	6,000,000
Change in retained earnings	$ 4,000,000

Less amortization and cost of sales adjustments (after-tax)	(400,000)
Adjusted change in retained earnings	$ 3,600,000
P's share at 20%	$ 720,000

The above entry re-enacts the combined effects of EA1 and EA2 from the previous year.

EA2: Recognition of remeasurement gain on previously held equity interests

Dr Investment in S	280,000	
Cr Opening retained earnings		280,000

This entry re-enacts the reinstatement of the remeasurement gain at the consolidated level ($280,000). Hence, the investment in S balance after putting through the re-enacted equity accounting entries in EA1 and EA2 stands at $16,000,000. Since S became a subsidiary on 31 December 20x0, this investment amount has to be eliminated against the share capital and retained earnings of S. The following consolidation adjustment re-enacts the elimination entry.

CJE1: Elimination of investment and recognition of goodwill

Dr Share capital	4,000,000	
Dr Retained earnings	10,000,000	
Dr Goodwill	4,400,000	
Dr Intangible assets	1,600,000	
Dr Inventory	400,000	
Cr Deferred tax liability		400,000
Cr Investment in S		16,000,000
Cr Non-controlling interests		4,000,000

In subsequent years after 20x1, the re-enactment entries will need to be passed each year to the consolidated financial statements until such time when S is disposed of or when P loses control of S.

LOSS OF CONTROL

A parent loses control of a subsidiary through total or partial divestment of ownership or through loss of rights to direct the most significant activity of the subsidiary. In some cases, the divestment is partial and the investor retains some interests in the former subsidiary. The retained interests result in a new relationship for the investor. The former parent may now be an investor in an associate or a passive investor in a financial asset.

The International Accounting Standards Board (the Board) expressed its view that the loss of a control of a subsidiary is a significant economic event[4] and requires the investor to measure the retained investment at fair value. The new investor-investee relationship is significantly different from the former parent-subsidiary relationship.

Since a loss of control is a significant economic event, we can see the transaction as being a sale of a subsidiary and purchase of an associate or financial asset. For example, if the investor decreases its ownership interests from 70% to 20% by selling 50% of its ownership interests, in substance, the investor is selling 70% and buying 20%. The income statement effect would be on 70% of the investment comprising the gain or loss from the actual sale of 50% and a "remeasurement" gain or loss from the retained 20% interests. Because of the significance of this event, IFRS 10 requires the investor to remeasure the retained interests to fair value and to recognize a remeasurement gain or loss in the income statement.

When a parent loses control of a subsidiary, it will determine the following amounts at the date when control is lost and do the following:[5]

1. Derecognize the assets and liabilities of the subsidiary. The assets and liabilities will include goodwill and any remaining balance of fair value adjustments.
2. Derecognize the carrying amount of any non-controlling interests.
3. Recognize the fair value of consideration received for the sale of the ownership interests and the gain or loss on sale.
4. Recognize any distribution of shares.
5. Remeasure any retained interests at fair value and recognize the gain or loss on remeasurement.

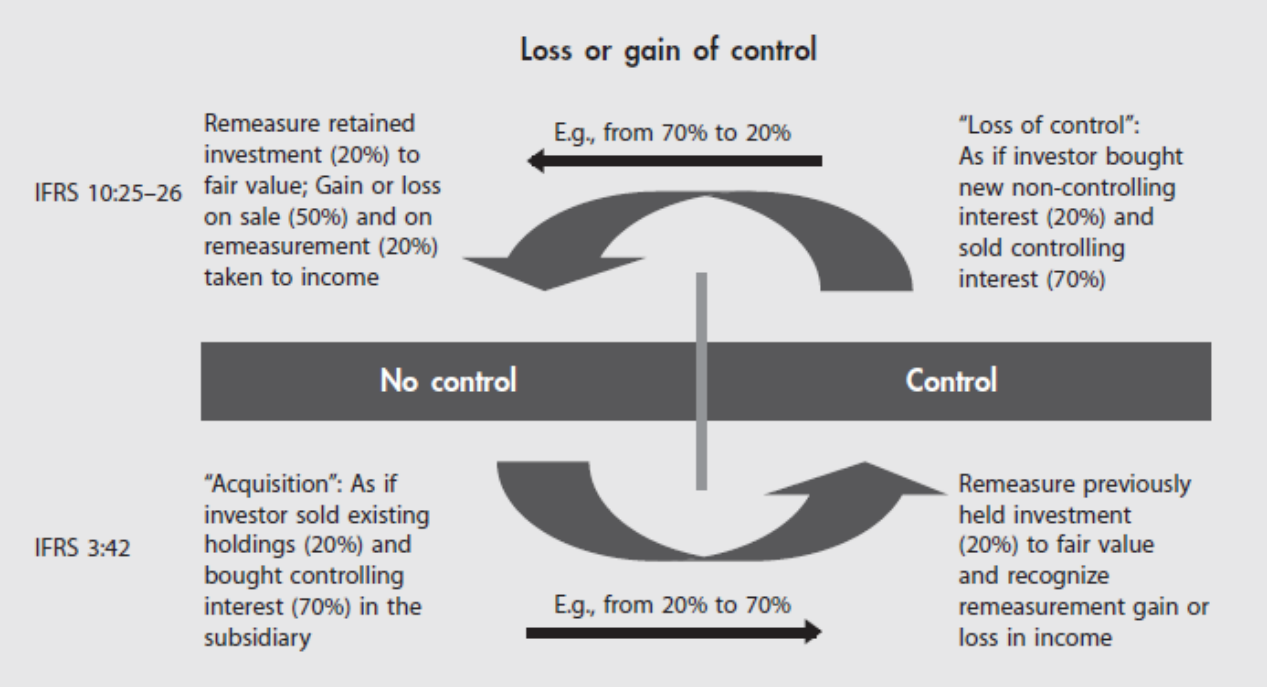
We compare this scenario with a gain in control when an associate or financial asset becomes a subsidiary. This situation was discussed in the previous section but we reinforce the accounting requirements here again. In a step acquisition or a business combination achieved in stages, the investor has previously held interests before obtaining control. In economic terms, one can see the change in relationship as divesting an associate/passive investment and acquiring a subsidiary. In substance, the effective (not actual) divestment of the previously held interests results in a gain or loss for the investor.

For example, if the investor increases its ownership interests from 20% to 70% by buying an additional 50% interests, it is as if the investor is selling its existing 20% interests and buying a new interest in 70% of the investee. page 496 IFRS 3 requires the investor to remeasure the previously held interests of 20% to fair value and recognize a remeasurement gain or loss on the 20%.

The same underlying principle applies in both situations. When control is obtained, a major significant event has arisen that changes the relationship between the investor and the investee. The previously held interests is remeasured resulting in a gain or loss to income. When control is lost, any retained interests is remeasured resulting in a gain or loss to income.

We show the pictorial diagram below in Figure 7.11 to represent the changes in ownership interests resulting in loss or gain of control:

FIGURE 7.11 Loss or gain of control



An example of an accounting policy note on accounting for loss of control is shown below. The extract is from the 2018 Annual Report of Keppel Corporation Limited.

When control of a subsidiary is lost as a result of a transaction, event or other circumstance, the Group derecognizes all assets (including any goodwill), liabilities and non-controlling interests at their carrying amounts. Amounts previously recognized in other comprehensive income in respect of that former subsidiary are reclassified to the profit and loss account or transferred directly to revenue reserves if required by a specific standard. Any retained interest in the former subsidiary is recognized at its fair value at the date control is lost, with the gain or loss arising recognized in the profit and loss account.

Scenario 1 and Scenario 2 relate to situations when control is lost or gained. For simplicity, we assume in each scenario that ownership interests of more than 50% results in control for the investor.

Scenario 1: Loss of Control P Co decreases ownership on 1 January 20x10 from 90% to 30% by reducing investment from $18 million to $6 million. The proceeds are $16,000,000 and the fair value of retained investment is $8,000,000. S Co's post-acquisition change in retained earnings is $4,280,000. There are no other post-acquisition changes in equity.

	Impact on Consolidated Financial Statements at 1 January 20x10
Investment (no longer a subsidiary)	$8,000,000
Goodwill	Nil (Derecognized)
Remeasurement gain	$8,000,000 – ($6,000,000 + (30% x $4,280,000)) = $716,000
Profit on sale	$16,000,000 – ($12,000,000 + $2,568,000) = $1,432,000
Non-controlling interests	Nil (Derecognized)

60% x $4,280,000

The consolidation adjustment in the year when control is lost is shown below:

CJE1: Adjustment to profit on sale and recognition of remeasurement gain

Dr Investment in S	2,000,000	(from $6 million to $8 million)
Dr Profit on sale (PL)	2,568,000	Note 1
Cr Remeasurement gain (PL)		716,000
Cr Opening retained earnings		3,852,000

Alternatively, we can analyze in two parts

Dr Investment in S	2,000,000	
Cr Remeasurement gain (PL)		2,000,000

Remeasurement from cost to fair value

Dr Profit on sale (PL)	2,568,000	
Dr Remeasurement gain (PL)	1,284,000	
Cr Opening retained earnings		3,852,000

Share of post-acquisition equity "foregone" on loss of control

Note 1:	Group	Legal entity	Difference
Sales proceeds	16,000,000	16,000,000	
Initial investment disposed	(12,000,000)	(12,000,000)	

Share of post-acquisition equity in S forgone	(2,568,000)		
Profit on sale (PL)	1,432,000	4,000,000	2,568,000

The profit on sale calculated at the separate and consolidated financial statements differ. At the consolidated level, the cost of investment sold is not simply the initial investment given up but also the parent's share of post-acquisition change in equity that had been consolidated up to the date of sale. By selling the investment, the investor gives up the right to future dividends or distributions that would have flowed out of the post-acquisition change in equity (for example, retained earnings, other comprehensive income and other equity).

The difference between the profit on sale at the legal entity and group level is recognized as a consolidation adjustment. The remeasurement gain is not recognized in the separate financial statements. Hence, the consolidation adjustment will recognize the remeasurement gain in the income statement. The calculation for the remeasurement gain is consistent with that for the gain on sale. The parent's share of post-acquisition profits has to be incorporated in the carrying amount of the investment when determining the remeasurement gain or loss. The post-acquisition retained profits and other post-acquisition changes have to be re-enacted before this consolidation adjustment is passed. In Appendix 7A, we show full length questions that show the complete process involving changes in ownership interests. Suffice now to understand the main principles.

page 498

We increase investment by $2,000,000 because in the legal entity's books the investment is carried at initial cost of $6 million. However, in the consolidated financial statements, the investment has to be carried at fair value of $8 million on the date when control is lost. Finally, the opening retained earnings is increased by $3,852,000 to re-enact the past consolidation of P's share of the subsidiary's retained earnings up to the date when control is lost.

In the subsequent year (20x11), the impact on retained earnings is $2 million. This amount represents the net change in opening retained earnings in 20x11 arising from the loss of control (i.e. $3,852,000 retained earnings at 1 January 20x10 that is "washed out" by the lower profit on sale of $2,568,000 and increased by the remeasurement gain of $716,000).

Re-enactment during 20x11:

Dr Investment	2,000,000	
Cr Opening retained earnings		2,000,000

We should note a few special features. If the subsidiary had other comprehensive income (e.g., revaluation reserves), a similar entry must also be reenacted to recognize P's share of the subsidiary's revaluation reserves at the date when control is lost.

The remeasurement entry has to be re-enacted at each subsequent reporting period for as long as P Co is required to prepare consolidated financial statements (if P has other subsidiaries) or combined financial statements (if P has no other subsidiary but has associates or joint ventures). Without the entry, subsequent consolidated retained earnings will not be the same as the amount reported in the year when control was lost.

If control is lost during the year (as is often the case), we need to consolidate the subsidiary up to the date when control is lost.

For example, in Scenario 1, let us assume that the change in ownership interests was 1 July 20x10 and the post-acquisition profit is analyzed as follows:

Share of post-acquisition retained earnings as at 1 Jan 20x10	$3,852,000	
Share of post-acquisition revaluation reserves as at 1 Jan 20x10	$ 350,000	
Share of net profit for first half ended 30 June 20x10	$ 450,000	(Note 1)

Note 1: Share of net profit retained comprises the following:

Sales	$2,000,000
Less Cost of sales	$1,200,000
Gross profit	$ 800,000

Less Expenses (including tax)	$ 300,000
Net profit after tax	$ 500,000
Income attributable to non-controlling interests	$ 50,000
Profit retained	$ 450,000

The consolidation adjustment is as follows:

Dr Investment	2,000,000		
Dr Profit on sale (PL)	3,101,333	(Note 2)	
Cr Remeasurement gain (PL)		449,333	(Note 2)
Cr Opening retained earnings		3,852,000	
Cr Opening revaluation reserves		350,000	
Cr Retained earnings		450,000	(Note 3)

Note 2: Share of post-acquisition change in equity includes share of post-acquisition revaluation reserves of $350,000 and share of current net profit after tax of $450,000. Profit on sale and remeasurement gain in Scenario 1 is reduced by this additional consolidated share of equity forgone.

	Reduction in profit on sale	Remeasurement gain
In Scenario 1	($2,568,000)	$716,000
Share of post-acquisition revaluation reserves given up	($233,333) (60/90 × $350,000)	($116,667) (30/90 × $350,000)
Share of current net profit after tax given up	($300,000) (60/90 × $450,000)	($150,000) (30/90 × $450,000)
	($3,101,333)	$449,333

Note 3: It is not sufficient to show a single line entry in retained earnings. The investor has to consolidate the income statement on a line-by-line basis, showing the items in Note 1, for the period when it has control. However, the net effect of the line-by-line consolidation is to increase retained earnings by $450,000 up to the date when control is lost.

Scenario 2: Gain on Control P Co increases ownership from 30% to 80% on 1 Jan 20x10 by increasing investment from $2 million to $17 million. The fair value of previously held investment is $6,000,000. Investment in associate (equity-accounted) as at 31 Dec 20x9 is $3,500,000. The fair value of identifiable net assets on 1 Jan 20x10 after deferred tax adjustment is $20,000,000, share capital is $10,000,000, pre-acquisition retained earnings are $6,000,000, unrecognized intangible asset is $5,000,000, and tax rate is 20%. The fair value of non-controlling interests on 1 Jan 20x10 is $4,000,000.

	Impact on Consolidated Financial Statements at 1 January 20x10
Investment in subsidiary	Nil
Goodwill	($15,000,000 + $6,000,000 + $4,000,000) –$20,000,000 = $5,000,000
Income (Remeasurement gain)	$6,000,000 – $3,500,000 = $2,500,000
Non-controlling interests	$4,000,000

The consolidation adjustments are shown below:

Re-enactment of equity accounting of post-acquisition retained earnings as at 1 Jan 20x10:

Dr Investment in Associate	1,500,000	
Cr Opening retained earnings		1,500,000

We can infer the share of post-acquisition retained earnings as follows (we can assume from the question that there are no revaluation reserves or other comprehensive income at or prior to acquisition date):

Investment in Associate, equity method	$3,500,000
Investment in Associate, initial cost	2,000,000
Share of post-acquisition retained earnings	$1,500,000

Remeasure previously-held interests of 30%

Dr Investment in subsidiary	2,500,000	
Cr Remeasurement gain (PL)		2,500,000

Recognize goodwill as of acquisition date

Dr Goodwill	5,000,000	
Dr Share capital	10,000,000	
Dr Retained earnings	6,000,000	
Dr Intangible asset	5,000,000	
Cr Investment		21,000,000
Cr Non-controlling interests		4,000,000
Cr Deferred tax liability		1,000,000

The investment in subsidiary of $21 million comprises fair value of consideration transferred to obtain control ($15 million) and the fair value of previously-held interests ($6 million). We are able to arrive at fair value of previously-held interests of $6 million through the re-enactment and remeasurement process.

Goodwill of $5 million is determined with reference to fair values at acquisition date and is not a layering of the results of different cost measures.

In Appendix 7A, we show a full–length illustration of such a scenario.

CHANGES IN OWNERSHIP INTERESTS WITHOUT CHANGE IN CONTROL

A parent may divest or increase ownership stakes in a subsidiary without losing or gaining control. Changes within the control continuum do not change the relationship with the subsidiary. In this scenario, there is no change in control that warrants a remeasurement gain or loss on retained interests or previously held interests. However, there is a transaction between the controlling and non-controlling interests and a re-balancing of their ownership interests. Transactions among owners in their capacity as owners are purely equity transactions. IFRS 10 requires the investor to recognize the gain or loss on sale or purchase directly in equity and not in the income statement. Any new economic goodwill or fair value adjustments that are included in successive purchases after the acquisition date should not be recognized as goodwill or

fair value adjustments. After the acquisition date, new goodwill or fair value adjustments are recognized in equity (these transactions will reduce equity).

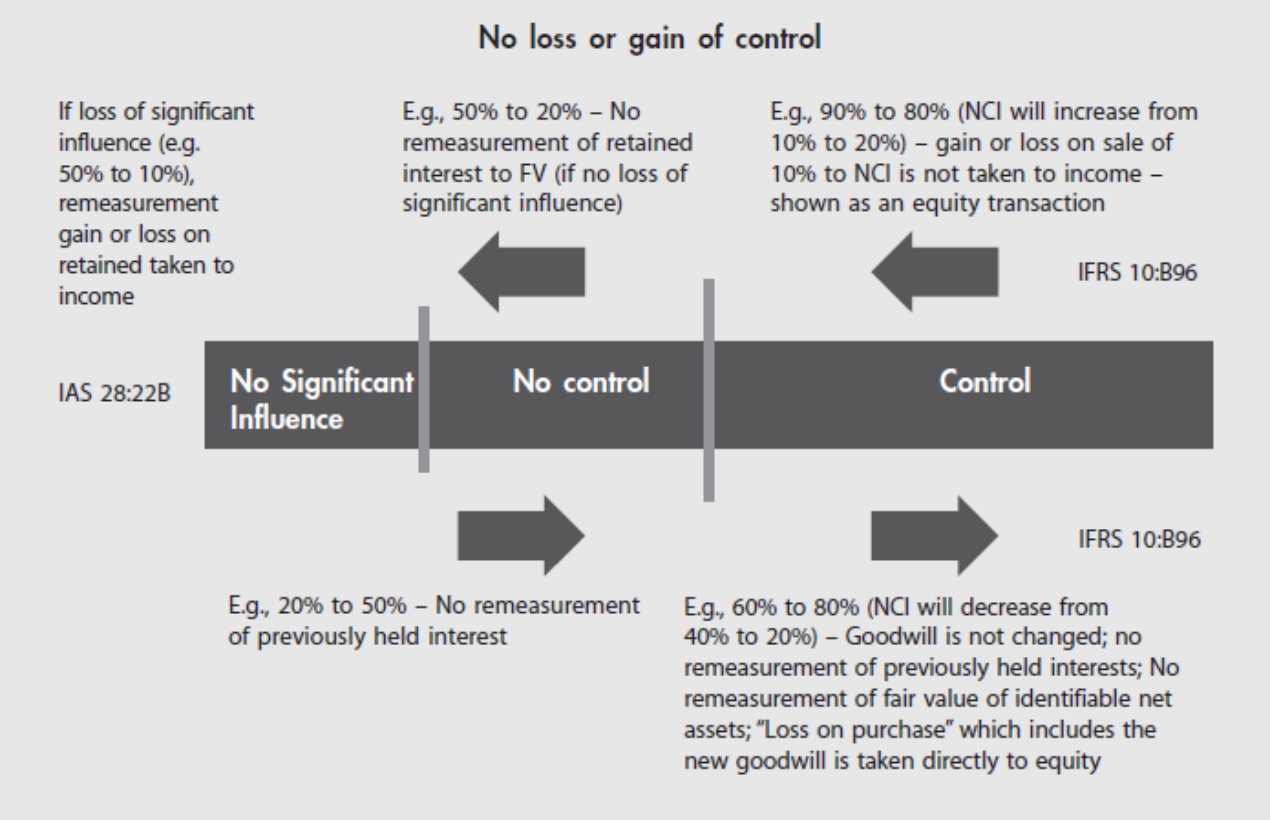
IFRS 10 paragraph B96 requires changes in ownership interests in a subsidiary that do not result in a loss of control to be accounted for as equity transactions (i.e., transactions between the controlling equity holders and non-controlling interests in their capacity as owners). When such transactions occur:

1. The carrying amounts of the controlling and non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiary. For example, if non-controlling interests increase to 20% from 5%, the equity balance of non-controlling interests will be adjusted upwards to be 20% of the subsidiary's equity. The carrying amounts refer to the amounts of the subsidiary's equity or net assets that have been recognized in the consolidated (economic entity) financial statements. page 501
2. However, the amounts paid or received for the additional interests bought or sold will not be at the carrying amounts. The difference between the amount by which the non-controlling interests are adjusted and the fair value of consideration paid or received is taken directly to equity (not income). The difference is attributed to the owners of the parent (i.e., it is not shared with non-controlling interests).

In the 2018 Annual Report of Keppel Corporation Limited, the Group explained its accounting treatment on changes in Group's interest in a subsidiary that do not result in a loss of control.

> Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions. The carrying amounts of the Group's interests and the non-controlling interests are adjusted and the difference between the change of the carrying amounts of the non-controlling interests and the fair value of the consideration paid or received is recognized directly in equity and attributed to owners of the Company.

We show the change in ownership interests without change in control in the following diagram.



Scenario 3 and Scenario 4 show how the changes in ownership interests without change in control are accounted for under IFRS 10. Full-length self-study illustrations are included in Appendix 7A. The diagram also shows change in significant influence. Appendix 7B deals with this in greater depth.

Scenario 3: Acquisition of non-controlling interests – No change in control P Co acquired 90% of S Co on 1 Jan 20x8 for $18,000,000. On 1 Jan 20x8, S Co's share capital is $8,000,000 and retained earnings is $1,520,000. On that date, S Co has an unrecognized intangible asset of $600,000. The intangible asset has an indefinite useful life and its benefits are taxable at 20%. Fair value of non-controlling interest on 1 Jan 20x8 is $1,600,000. P Co increases ownership from 90% to 95% on 1 January 20x10 by increasing investment from $18,000,000 to $20,000,000. Fair value of identifiable net assets (after tax) on 1 Jan 20x10 is $15,000,000. Fair value of non-controlling interest on 1 Jan 20x10 is $4,000,000. Retained earnings of S Co as at 1 January 20x10 is $5,800,000. Net profit after tax of S Co for 20x10 is $1,700,000. S Co has no other changes in equity in 20x10. The intangible asset acquired on 1 January 20x8 remains unimpaired as at 31 December 20x10.

page 502

	Impact on Consolidated Financial Statements at 1 January 20x10
Investment in subsidiary	Nil (Eliminated)
Goodwill	$18,000,000 + $1,600,000 – $10,000,000 = $9,600,000
Non-controlling interests (NCI)	$1,014,000 (refer CJE3 workings)
Equity (Loss on purchase)	$ 986,000 (refer CJE3 workings)

The consolidation adjustments passed in 20x10 are as follows:

CJE1: Elimination of investment

Dr Share capital	8,000,000	
Dr Retained earnings	1,520,000	
Dr Intangible asset	600,000	
Dr Goodwill	9,600,000	
Cr Deferred tax liability		120,000
Cr Investment in S Co		18,000,000
Cr NCI		1,600,000

Explanatory note:

Goodwill does not change after acquisition date. Hence, CJE1 is static and reflects the fair value information as at acquisition date. Subsequent increases in goodwill and fair value of identifiable net assets are not recognized. The investment amount eliminated reflects the amount as at acquisition date. Note that the investment amount is "under-eliminated" as there is an additional $2 million not eliminated in CJE1. The additional investment is eliminated in CJE3.

CJE2: Allocation of post-acquisition change in retained earnings to NCI

Dr Retained earnings	428,000	
Cr NCI		428,000
Retained earnings at date of second investment	5,800,000	
Retained earnings at acquisition date	(1,520,000)	
Change in retained earnings	4,280,000	

Explanatory note:

This entry re-enacts the allocation of past profits to NCI; hence the historical ownership interests have to be applied. If S Co has other comprehensive income (e.g. revaluation reserves), the same principle applies. The use of historical ownership interests also applies to any past amortization or expensing of fair value adjustments and adjustment of intra-group transactions that affect historical retained earnings (Refer Appendix 7A for more complex examples). The re-enactment

builds up the NCI balance to arrive at the historical balance just before the change in ownership interests. CJE3 then "re-balances" NCI downwards so that NCI balance is exactly proportional to the latest ownership interest.

CJE3: Loss on purchase of additional 5% with no change in control

Dr NCI	1,014,000	
Dr Equity (Loss on purchase)	986,000	
Cr Investment in S Co		2,000,000

Loss on purchase = Consideration paid for 5% – Carrying amount of 5% of NCI
= 2,000,000 – 1,014,000
= 986,000

Explanatory note:

In this entry, we eliminate the additional $2 million (not eliminated in CJE1) and also reduce NCI's carrying amount proportionately for the percentage disposed by NCI. The loss on purchase is the difference between the additional investment paid by P Co and the carrying amount of non-controlling interests reduced. The premium represents additional goodwill and fair value changes of identifiable net assets since the date when P Co obtained control of S Co. However, P Co is not permitted to recognize additional goodwill or new fair value adjustments on identifiable net assets after 1 January 20x8, the date when control was obtained. The difference is written off to equity and effectively represents a capital loss, although it may have an economic benefit to P Co. The loss on purchase may be taken to capital reserve. It should not be taken to the income statement as the loss arises from a transaction between owners.

The carrying amount of non-controlling interests can be determined in one of two ways as follows:

In the first method, we can reconstruct the NCI balance just before divestment through the chronological listing of consolidation entries.

CJE1: Initial fair value of NCI	1,600,000
CJE2: Change in retained earnings attributable to NCI	428,000
NCI balance as at 1 Jan 20x10 (before divestment)	2,028,000
5% is acquired by P Co, i.e. 50% of NCI	1,014,000

Alternatively, NCI may be derived analytically on 1 Jan 20x10 with reference to the three components:

Book value of equity of S Co	8,000,000 + 5,800,000	13,800,000
Unimpaired balance of intangible asset, after tax	600,000 × 80%	480,000
		14,280,000
NCI's share of identifiable net assets		1,428,000
NCI's goodwill	1,600,000 – 10%*10,000,000	600,000
NCI balance as at 1 Jan 20x10 (before divestment)		2,028,000

CJE4: Allocation of current income to NCI

Dr Income to NCI	85,000	
Cr NCI		85,000

Current income allocated to NCI (5% x $1,700,000)

Explanatory note:

The new ownership interests applies to allocation to NCI after the change in ownership interests. The same principle applies to allocation of other comprehensive income to NCI or adjustments for intra-group transactions and amortization or expensing of fair value adjustments.

Analytical check of NCI as at 31 December 20x10	
CJE1: Initial fair value of NCI	1,600,000
CJE2: Allocation of post-acquisition change in retained earnings to NCI	428,000
CJE3: Re-attribution from NCI	(1,014,000)
CJE4: Allocation of current income to NCI	85,000
NCI balance as at 31 Dec 20x10	1,099,000

Analyzed as follows:		
Book value of equity as at 31 Dec 20x10		15,500,000
Unimpaired balance of intangible asset, net of tax		480,000
Adjusted book value of equity		15,980,000
NCI's share of adjusted book value of equity		799,000
NCI's goodwill	800,000 – (5% x 10,000,000)	300,000
NCI as at 31 Dec 20x10		1,099,000

Explanatory note:

The analytical check is carried out in the usual manner, except that the proportion applied is the latest ownership interests. NCI has been proportionally reduced. Hence, the analytical check works neatly in the usual way but with a different percentage and goodwill that is attributable to NCI is a proportion of the original goodwill attributable to NCI.

Scenario 4: Partial disposal of controlling interest – No loss of control P Co acquired 90% of S Co on 1 Jan 20x8 for $18,000,000. On 1 Jan 20x8, S Co's share capital is $8,000,000 and retained earnings is $1,520,000. On that date, S Co has an unrecognized intangible asset of $600,000. The intangible asset has an indefinite useful life and its benefits are taxable at 20%.

Fair value of non-controlling interests on 1 Jan 20x8 is $1,600,000. P Co decreased ownership to 60% on 1 Jan 20x10. The proceeds were $15,000,000. Retained earnings of S Co as at 1 January 20x10 is $5,800,000. Net profit after tax of S Co for 20x10 is $1,700,000. S Co has no other changes in equity in 20x10. The intangible asset remains unimpaired as at 31 December 20x10.

	Impact on Consolidated Financial Statements at 1 January 20x10
Investment in subsidiary	Nil (Eliminated)
Goodwill	$18,000,000 + $1,600,000 – $10,000,000 = $9,600,000*
Income (Gain on sale)	Nil
Non-controlling interests	Increased by $7,284,000** (30% ÷ 90% × $21,852,000)***
Equity (Gain on sale)	$15,000,000 – $7,284,000 = $7,716,000

* Total goodwill does not change after the divestment of 30% by P Co.

** Adjustment for the change in relative interests.

*** CJE3

The following journal entry is recorded in the separate financial statements of P Co:

Dr Cash	15,000,000	
Cr Investment ($18,000,000 × 30/90)		6,000,000
Cr Gain on sale		9,000,000

The consolidation adjustments passed in 20x10 are as follows:

CJE1: Elimination of investment

Dr Share capital	8,000,000	
Dr Retained earnings	1,520,000	
Dr Intangible asset	600,000	
Dr Goodwill	9,600,000	
Cr Deferred tax liability		120,000
Cr Investment in S Co		18,000,000
Cr NCI		1,600,000

Explanatory note:

As explained in the previous scenario, goodwill does not change after acquisition date. Hence, CJE1 remains the same for as long as control is retained by P Co and reflects the fair value information as at acquisition date. Subsequent disposal of P Co's interest to NCI simply results in the transfer of a proportion of P Co's goodwill and fair value adjustments to NCI. Total goodwill remains the same. The investment amount eliminated reflects the amount as at acquisition date. Note that the investment amount is "over-eliminated" as investment in S Co by P Co at latest balance sheet date is only $12 million (60/90 x $18 million). The over-elimination is corrected in CJE3.

CJE2: Allocation of post-acquisition change in retained earnings to NCI

Dr Retained earnings	428,000	
Cr NCI		428,000
Retained earnings at date of partial divestment by P Co		5,800,000
Retained earnings at acquisition date		(1,520,000)
Change in retained earnings		4,280,000

Explanatory note:

As explained in the previous scenario, this entry re-enacts the allocation of past profits to NCI; hence the historical ownership interests have to be applied. If S Co has other comprehensive income (e.g. revaluation reserves), the same principle applies. The use of historical ownership interests also applies to any past amortization or expensing of fair value adjustments and adjustment of intra-group transactions that affect historical retained earnings (Refer Appendix 7A for more complex examples). The re-enactment builds up the NCI balance to arrive at the historical balance just before the change in ownership interests. Since there is an increase in the percentage held by NCI, CJE3 "re-balances" NCI upwards so that the NCI balance is exactly proportional to the latest ownership interest.

CJE3: Profit on sale of 30% (no change in control) taken to equity

Dr Investment in S Co	Note 1	6,000,000	
Dr Profit on sale (P Co's books)	Note 2	9,000,000	
Cr NCI	Note 3		7,284,000
Cr Equity (e.g. Capital Reserve)	Note 4		7,716,000
Workings:		Legal entity perspective	Group perspective
Sales proceeds		15,000,000	15,000,000
Investment in S Co disposed (Note 5)		(6,000,000)	(7,284,000)
Profit on sale		9,000,000	7,716,000

Explanatory notes:

The workings show the profit on sale calculations at the legal entity and the group level. The difference lies in the carrying amount of the investment disposed. While the investment in S Co is the cost of the initial investment for the legal entity, the effective investment in S Co at the group level is the cost of the initial investment and the consolidated profits given up. Hence, the group's profit on sale is lower. Note that the profit on sale at the group level is not taken to the income statement because the profit arises from transactions with owners in their capacity as owners. The following notes explain the individual legs of the journal entry.

Note 1: This entry corrects the "over-elimination" of the investment in S Co In CJE1.

Note 2: The profit on sale in P's legal entity financial statements is eliminated from income statement as it relates to a transaction between owners and should not be shown in the income statement.

Note 3: Since NCI's interest has risen from 10% to 40%, the NCI balance has to be adjusted upwards. Effectively, P Co's share of 30% of the equity of S Co is transferred to NCI. The workings for the adjustment are shown in Note 5.

Note 4: The profit on sale at the Group level has to be taken directly to equity (e.g. to Capital Reserve) because it arises from transactions between owners. It should not be taken to income statement. Hence, both the amount and the account is different at the Group level.

Note 5: The carrying amount of the investment in S Co at the Group level is the initial investment plus P's share of the post-acquisition changes in equity of S Co. Through the disposal, P Co gives up not only a proportion of the initial investment in S Co but also a proportion of the share of post-acquisition changes in equity of S Co. A proportion of the carrying amount relating to the ownership interests disposed is effectively transferred to NCI through a re-attribution or re-balancing process. The workings are shown below.

Initial investment by P Co		18,000,000
P Co's share of post-acquisition change in retained earnings	90% × 4,280,000	3,852,000
P Co's effective investment in S Co before divestment		21,852,000
P Co's effective investment in S Co transferred to NCI	30/90 × 21,852,000	7,284,000

CJE4: Allocation of current income to NCI

Dr Income to NCI	680,000	
Cr NCI		680,000
Current income allocated to NCI (40% x $1,700,000)		

Explanatory note:

The new ownership interests applies to allocation to NCI after the change in ownership interests. The same principle applies to allocation of other comprehensive income to NCI or adjustments for intra-group transactions and amortization or expensing of fair value adjustments.

Analytical check of NCI

CJE1: Initial fair value of NCI	1,600,000
CJE2: Allocation of post-acquisition change in retained earnings to NCI	428,000
CJE3: Re-attribution to NCI	7,284,000
CJE4: Allocation of current income to NCI	680,000
NCI balance as at 31 Dec 20x10	9,992,000

Analyzed as follows:

Book value of equity as at 31 Dec 20x10		15,500,000
Unimpaired balance of intangible asset, net of tax		480,000
Adjusted book value of equity		15,980,000
NCI's share of adjusted book value of equity	40% × 15,980,000	6,392,000
NCI's goodwill	Note 5	3,600,000
NCI as at 31 Dec 20x10		9,992,000

Note 5: NCI's goodwill is made up of two tranches. One tranche comprises the original goodwill attributable to NCI. The second tranche comprises of the goodwill that is effectively bought over from P Co when NCI increased its ownership interests by an additional 30%. The calculation is as follows:

	As at acquisition date	**Re-balancing**	**As at date of change**
Investment by P Co	18,000,000		
Fair value of NCI	1,600,000		
	19,600,000		
Percentage held by P Co	90%	(30%)	60%
NCI percentage	10%	30%	40%
Share capital	8,000,000		
Pre-acquisition retained earnings	1,520,000		
Intangible asset	600,000		
Deferred tax liability	(120,000)		
Fair value of identifiable net assets	10,000,000		
P Co's share of identifiable net assets	9,000,000		
NCI's share of identifiable net assets	1,000,000		
	10,000,000		
Goodwill	9,600,000		
P Co's goodwill 18,000,000-9,000,000	9,000,000	(3,000,000)	6,000,000
NCI's goodwill 1,600,000-1,000,000	600,000	3,000,000	3,600,000
	9,600,000		9,600,000

Explanatory note:

The analytical check relates to the three components. The latest ownership interest is applied to book value of equity and the remaining balance of any fair value adjustment. However, the goodwill calculation requires special consideration. A proportion of P Co's goodwill is effectively sold to NCI at the date of change of ownership interests. NCI's share of goodwill increases by 30/90 x $9,000,000 or $3,000,000. However, total goodwill does not change but the individual components of equity changes. The changes are reflected in equity through the re-balancing of NCI upwards and the reduction for P Co's equity through a smaller profit that is taken to equity.

NO CHANGE IN SIGNIFICANT INFLUENCE

Similar to the situation of no change in control, an investor may divest or increase ownership stakes in an associate without changing the relationship with its associate. No special accounting requirements apply to such transactions. Divestment of interests without loss of significant influence will not require remeasurement of the remaining interests. page 508 Similarly, increase in ownership interests without changing the existing relationship with the associate will not require the remeasurement of previously held interests. The accounting for such changes is explained in Appendix 7B.

ASSET TRANSFERS IN MORE COMPLEX SETTINGS

In earlier chapters, the following principles relating to intragroup transfers have been established:

1. Intragroup balances, transactions, income, and expenses must be eliminated in full.
2. Unrealized profit or loss included in inventory, fixed assets or other transferred assets must be eliminated in full. If the unrealized loss indicates an asset impairment, the loss should be recognized in the consolidated financial statements.
3. Where the seller or transferor is a partially owned subsidiary, non-controlling interests in the subsidiary must bear a portion of the adjustment of unrealized profit or loss. The approach taken in this text is that profit recognition by non-controlling interests must be aligned with that of the controlling interests. This alignment of profit recognition is underpinned by the entity theory that non-controlling interests are equity stakeholders of the subsidiary and consistent accounting bases should be applied to both controlling and non-controlling stakeholders. This view is consistent with the underlying trends in IFRS 3 and IFRS 10 to adopt the same accounting treatments for both groups of stakeholders. Hence, if a transfer originates from a partially owned subsidiary, the recognition of profit by non-controlling interests is deferred until the transferred asset is re-sold to third parties or is depreciated.
4. A sale from a parent to its subsidiaries is commonly described as a "downstream" sale and a sale from a subsidiary to its parent is described as an "upstream" sale. However, there are certain intragroup transfers that are not clearly "downstream" or "upstream." For example, if a subsidiary sells an asset to another subsidiary, it appears to be a lateral or horizontal transfer rather than an "upstream" sale. Nonetheless, the same principle applies. If the selling subsidiary is partially owned, the profit adjustments must be borne by both the group and the non-controlling interests of the selling subsidiary.

We consider three types of transfers within complex structures:

Asset Transfers between Parent and Indirect Subsidiaries

The "upstream" and "downstream" analysis applies to situations where assets are transferred between parent and indirect subsidiaries. In a "downstream" scenario where a parent transfers an asset to an indirect subsidiary, the adjustment is made for the unrealized profit and tax effects included in the parent's profit. No adjustment to non-controlling interests is necessary. However, in an "upstream" scenario, non-controlling interests have to be adjusted for the unrealized profit included in current profit of the transferring subsidiary and any realized profit that originated from previous periods. Since indirect subsidiaries have both direct and indirect non-controlling interests, adjustment will affect total non-controlling interests. Illustration 7.7 shows the accounting entries for an "upstream" transfer from an indirect subsidiary to a parent.

Asset Transfers between Fellow Subsidiaries

Although these transfers are more lateral or horizontal than "upstream," the non-controlling interests in the transferor bear a portion of adjustments of unrealized profit or loss. The non-controlling interests of the buying subsidiary are not affected by such adjustments.

Asset Transfers between a Subsidiary and an Associate

If a group company (parent or any of its subsidiaries) sells to an associate or if an associate sells to a group company, the group recognizes the unrelated investors' share of the unrealized profit under IAS 28. Only the group's share of the unrealized profit is not recognized. For example, if an investor has 30% interest in an associate, the investor should recognize 70% of unrealized profit arising from asset transfers, whether upstream or downstream.

The approach taken in this text as explained in Chapter 6 is that adjustments for unrealized profit or loss, whether arising from upstream or downstream sales, are made against equity-accounted profits. Since equity accounting is a compressed form of consolidation (commonly known as "one-line" consolidation), the adjustments are made against the one-line share of profit and share of tax entries rather than the separate line items such as sales or cost of sales. Proportionate adjustments against separate line items are, in our view, more in line with proportionate consolidation and would be inconsistent with the concept of equity accounting.[6]

Similarly, the adjustment for unrealized profit included in inventory or fixed assets of the associate is made against the investment in the associate account and not the individual asset. The investment in associate account is a proxy for the individual assets and liabilities held by the associate. In an "upstream sale," the same approach is taken whereby adjustments are made against the investment in associate and share of profit or loss of the associate.

If a partially owned subsidiary sells to an associate, the non-controlling interests in the subsidiary will also bear their share of the adjustment. Overall, the adjustment is borne proportionately by the group and the non-controlling interests of the subsidiary. The view taken in our text is that profit recognition by non-controlling interests must be consistent with that of the majority interests.

If the transfer is made from an associate to a subsidiary, no adjustment to non-controlling interests is necessary since the selling company is the associate. Illustration 7.7 shows and explains a scenario where a subsidiary transfers inventory to an associate of its parent.

ILLUSTRATION 7.7 Transfer of asset between a subsidiary and an associate

P Company has direct and indirect interests in S, A, and B. Details of the group structure and the profit before tax and tax expense of the companies for the years ended 31 December 20x0 and 31 December 20x1 are shown below. Profit and tax for the year ended 31 December 20x0 are as follows:

Company	Profit before tax	Tax expense	Direct % held	Direct investor
S	$1,000,000	$200,000	80%	P
A	400,000	80,000	30%	P
B	500,000	100,000	70%	S

An intragroup transfer was made during 20x0 as follows:

Transfer price	$100,000
Original cost	(60,000)

Profit on transfer	$ 40,000
Percentage resold to third parties during 20x0	60%
Percentage unsold as at 31 December 20x0	40%
Percentage unsold as at 31 December 20x1	0%

Profit and tax for the year ended 31 December 20x1 are as follows:

Company	Profit before tax	Tax expense
S	$1,200,000	$240,000
A	600,000	120,000
B	400,000	80,000

Consider two scenarios below.

Scenario 1: S sells to A

P's share of A's profit is adjusted for the group's share of unrealized profit. However, S's non-controlling interests must also bear a portion of the adjustment of the unrealized profit. In the consolidated financial statements, the equity accounting entry as at 31 December 20x0 are as follows:

EA1: Equity accounting of profit and tax for 20x0

Dr Investment in A	92,160	
Cr Share of profit of A		92,160

Unrealized profit is adjusted from the profit before tax of A and tax expense of A. The group is permitted by IAS 28 to recognize the unrelated investor's share of the profit.

Profit before tax of A	$400,000	
Unrealized profit at year-end	(16,000)	(40% × $40,000)
Adjusted profit before tax of A	384,000	
P's share of adjusted profit	$115,200	(30% × $384,000)

Tax expense of A	$ 80,000	
Tax on unrealized profit	(3,200)	(40% × $8,000)
Adjusted tax expense of A	$ 76,800	
P's share of adjusted tax	$ 23,040	(30% × $76,800)

Thus, the group's share of profit after tax (before allocation to non-controlling interests) is reduced by $3,840. In the consolidation adjustment, non-controlling interests will have a share of this reduction (as the seller is S) and the net reduction suffered by the group is $3,072 (i.e., 80% × $3,840).

Consolidation adjustments for 20x0

Dr Income to non-controlling interests	159,232	
Cr Non-controlling interests		159,232

Since the sale originated from S, the non-controlling interests in S bears a share of the adjustment for the unrealized profit.

Profit after tax of S	$ 800,000	
Less unrealized profit arising from transfer from S to A	(3,840)	
Adjusted profit after tax of S	$796,160	
Non-controlling interests at 20%	$159,232	
Original profit	$ 32,000	(Note 1)
Adjustment to share of A's profit after tax	(3,840)	(Note 2)
Adjustment to non-controlling interests	768	(Note 3)
Non-controlling interests' share	(6,400)	(Note 4)
Profit recognized from inventory transfer	$ 22,528	

If the sale is made to a third party, the profit recognized by the group would be $25,600 (i.e., interest in S of 80% multiplied with the after-tax profit on transfer of $32,000). However, because the transfer is made to an associate, the group can only recognize up to the unrelated investor's portion (i.e., not its own 30% share) of the unrealized profit. The realized profit can be recognized in full. Hence, the final profit recognized is $22,528 which excludes $3,072 which is P's share of the unrealized profit (refer to the explanatory notes under equity accounting below).

Note 1: Total profit on transfer is included in S's profit. Adjustment for unrealized profit is included in items below.

Note 2: Adjustment for proportion of unrealized profit relating to P's interest in A. P's interest of 30% is applied to after-tax unrealized profit (i.e. 30% × 80% × $16,000). Only A's unrelated investor's share (70%) of the unrealized profit is recognized.

Note 3: Adjustment for unrealized profit borne by non-controlling interests of S (i.e., 20% × $3,840).

Note 4: Share of profit on transfer allocated to non-controlling interests (i.e., 20% × $32,000). The combined effects of Note 3 and Note 4 is that non-controlling interests of S (as with the group) recognizes profit on the transfer to the extent of the unrelated investor's share in A.

We now show the equity accounting entries as at 31 December 20x1.

EA1: Reinstating the unrealized loss adjustment in opening retained earnings

Dr Opening retained earnings	3,072	
Dr Non-controlling interests	768	
Cr Investment in A		3,840

The inventory in A on 1 January 20x1 is over-stated by the unrealized profit. However, in view of the fact that A is only an associate, it is not possible to correct the overvalued inventory which is not consolidated with P's financial statements. The proxy for inventory is the investment in A's account. Likewise, it is not possible to adjust directly the deferred tax asset account of A. The adjustment to the deferred tax asset account is taken to the investment in A account instead. Since the seller is S, the non-controlling interests in S bear a portion of the profit adjustment.

EA2: Equity accounting of profit and tax for the year ended 31 December 20x1

Dr Investment in A	147,840	

Cr Share of profit of A		147,840

Since inventory held by A is resold to third parties during 20x1, the realized profit from the previous year's transfer of inventory can be added back to profit before tax. The same applies to the tax expense.

Profit before tax of A	$600,000	
Add back realized profit	16,000	(40% × $40,000)
Adjusted profit before tax of A	$616,000	
P's share of adjusted profit	$184,800	(30% × $616,000)
Tax expense of A	$120,000	
Tax on unrealized profit	3,200	(20% × $16,000)
Adjusted tax expense of A	$123,200	
P's share of adjusted tax	$ 36,960	(30% × $123,200)

Consolidation adjustments for 20x1

Dr Income to non-controlling interests	192,768	
Cr Non-controlling interests		192,768

Applying the concept that profit recognition for non-controlling interests is aligned with majority interests where the seller is the partially owned subsidiary, the realized profit is recognized by non-controlling interests in 20x1 as follows:

page 513

Profit after tax of S	$960,000	
Add realized profit arising from transfer from S to A	3,840	
Adjusted profit after tax of S	$963,840	
Non-controlling interests at 20%	$192,768	
Adjustment to share of A's profit after tax		$3,840
Adjustment to non-controlling interests		(768)
Profit recognized from inventory transfer		$3,072

Scenario 2: B sells to P

When B sells to P, the unrealized profit included in B's profit after tax has to be eliminated. The adjustment of the unrealized profit has to be also borne by the non-controlling interests of B. Since B is owned directly and indirectly by non-controlling interests, total non-controlling interests will bear their portion of the adjustment.

Direct non-controlling interests of B	30%
Indirect non-controlling interests of B	14%
Total non-controlling interests of B	44%

Total non-controlling interests of B is also the complement of P's indirect interests in B = 80% × 70% = 56%.

The consolidation adjustments for 20x0 are shown below:

CJE 1: Elimination of sales and unrealized profit on transfer from B to P

Dr Sales	100,000	
Cr Cost of sales		84,000
Cr Inventory		16,000

Sales is eliminated in full. Cost of sales comprises the cost of sales of realized sales and reversal of the cost of sales of the unrealized portion. Inventory is reduced by the amount of unrealized profit at the year end.

CJE2: Tax effects of CJE 1

Dr Deferred tax asset	3,200	
Cr Tax expense		3,200

CJE 3: Allocation of profit to non-controlling interests

Dr Income to non-controlling interests	170,368	
Cr Non-controlling interests		170,368

Since the sale originated from B, the lower-tiered subsidiary, any adjustment of unrealized profit will be borne by both direct and indirect non-controlling interests. The allocation of current profit after tax to non-controlling interests is shown below:

Profit after tax of B	$400,000	
Unrealized profit (after-tax)	(12,800)	(40% × 80% × $40,000)
Adjusted profit after tax of B	$387,200	
Total non-controlling interests	44%	

The consolidation adjustments for 20x1 are shown below:

CJE1: Recognition of realized profit in 20x1

Dr Opening retained earnings	8,960	
Dr Non-controlling interests	7,040	
Cr Cost of sales		16,000

CJE2: Tax effects of CJE1

Dr Tax expense	3,200	
Cr Opening retained earnings		1,792
Cr Non-controlling interests		1,408

CJE3: Allocation of profit to non-controlling interests

Dr Income to non-controlling interests	146,432	
Cr Non-controlling interests		146,432

Subsequently, the allocation of current profit after tax to non-controlling interests is:

Profit after tax of B	$320,000
Realized profit (after-tax)	12,800
Adjusted profit after tax of B	$332,800
Total non-controlling interests	44%
Income to non-controlling interests	$146,432

IMPACT OF CONSOLIDATION AND THE COST AND EQUITY METHODS ON PROFIT UPON THE DISPOSAL OF SUBSIDIARIES

When a parent sells a subsidiary, the "cost of sale" includes the sacrifice made by the parent, in giving up its rights to the distribution of post-acquisition profits. The profit (or loss) on sale is determined at two levels as follows.

At the group level, if the investee is consolidated:

$$\text{Profit/(loss) on sale of investment} = \text{Sales proceeds} - \begin{pmatrix}\text{Original cost}\\ \text{of investment}\end{pmatrix} + \begin{pmatrix}\text{Post-acquisition}\\ \text{profits}\end{pmatrix}$$

If equity accounting is used,

$$\text{Profit/(loss) on sale of investment} = \text{Sales proceeds} - \begin{pmatrix}\text{Original cost}\\ \text{of investment}\end{pmatrix} + \begin{pmatrix}\text{Post-acquisition}\\ \text{profits}\end{pmatrix}$$

Compare this with the effect in the separate financial statements if the cost method is used:

$$\text{Profit/(loss) on sale of investment} = \text{Sales proceeds} - \text{Original cost of investment}$$

If fair value (under IFRS 9) is used,

$$\text{Profit/(loss) on sale of investment} = \text{Sales proceeds} - \begin{matrix}\text{Carrying amount of investment}\\ \text{(at fair value)}\end{matrix}$$

Equity accounting has the effect of aligning the company's carrying amount of the investment with the group's carrying amount. As such, the profit on sale under equity accounting is the same as that under consolidation.

If fair value is used to determine the carrying amount of the investment, realized capital gain at the date of sale is smaller than under the cost method. Instead of a large terminal profit, unrealized capital profit has been systematically recognized over the life of the investment and credited directly to equity (if the investment is classified as a FVOCI equity security).

Illustration 7.8 shows profit recognition under the cost and equity methods and consolidation.

ILLUSTRATION 7.8 Comparison of the cost and equity methods and consolidation

To illustrate that the differences between consolidation, cost and equity methods are only temporary in nature, consider the following scenario when a sale is made of an investment prepared under each of these three methods. Total profit earned during the investment-holding period (share of post-acquisition profits and profit on sale) is the same under each method.

	Cost method	Equity method	Consolidation
Sales proceeds	$10,000,000	$10,000,000	$10,000,000
Original cost	$ 6,000,000	$ 6,000,000	$ 6,000,000
Share of post-acquisition profits	0	3,500,000	3,500,000
Cost of sales	$ 6,000,000	$ 9,500,000	$ 9,500,000
Profit on sale	$ 4,000,000	$ 500,000	$ 500,000
Total profit	$ 4,000,000	$ 4,000,000	$ 4,000,000

Under the cost method,

Terminal entry (cost method):		
Dr Cash	10,000,000	
Cr Investment		6,000,000
Cr Profit on sale		4,000,000

The equity accounting adjustment to adjust the terminal entry from the cost to the equity method is shown below:

Dr Profit on sale	3,500,000	
Cr Investment		3,500,000

A terminal consolidation journal entry is required to reflect the fact that the group had already recognized, in previous years, the profit now recognized by the parent on disposal of the investment under the cost method. The following shows the consolidation journal entry:

Dr Profit on sale	3,500,000	
Cr Retained earnings		3,500,000

OVERVIEW OF CONSOLIDATED CASH FLOW STATEMENTS

The preparation of a consolidated cash flow statement generally follows the same procedures as applied to the cash flow statement of a stand-alone entity. The information for the preparation of a consolidated cash flow statement comes from the following sources:

1. Consolidated income statement;
2. Consolidated balance sheets (for two consecutive years); and
3. Consolidated notes to the accounts.

Under IAS 7 *Cash Flow Statements*, a cash flow statement can be prepared using either one of the two methods: the direct method or the indirect method. For our purpose, we shall use the indirect method to illustrate the preparation of the consolidated cash flow statement.

As with the cash flow statement of a stand-alone company, the starting point is the net profit (in this case, the consolidated net profit), and adjustments are made for all non-cash items (in this case, items that have a non-cash impact on the consolidated net income).

The following points should be noted with respect to the preparation of consolidated cash flow statements:

1. Depreciation and amortization of a purchase differential (difference between fair value and book value) together with the depreciation and amortization expenses of the individual companies in the group are added back to consolidated net profit as they do not involve any cash inflow or outflow.
2. All transfers between group companies and any unrealized profits resulting from these transfers would have been eliminated in the preparation of the consolidated income statement and consolidated balance sheets and thus no further adjustments are needed.

page 517

3. Non-controlling interests' share of net profit is a non-cash adjustment that is added back to consolidated net income to arrive at net cash flows from operating activities.
4. Payments to non-controlling shareholders (for example, dividends) and receipts from non-controlling shareholders (for example, subscription of additional shares) are disclosed as uses or sources of cash under financing activities.

Illustration 7.9 provides an example of how the consolidated cash flow statement is prepared.

ILLUSTRATION 7.9 Consolidated cash flow statements

On 1 January 20x5, Parco acquired 80% of the share capital of Beta in exchange for a fresh issue of 2,000,000 of its own ordinary shares at a fair value of $2.00 per share and $500,000 in cash. The fair value of non-controlling interests of Beta was $1,125,000 on acquisition date. The fair values of the following identifiable assets and liabilities of Beta at the date of acquisition are as follows:

	$'000
Property, plant, and equipment	3,800
Inventories	1,350
Receivables	1,600
Cash	150
Payables	(1,450)
Long-term loan	(250)
	5,200

Additional information:

(a) Prior to the acquisition of Beta, Parco acquired 75% of the issued share capital of another subsidiary, Alpha.

(b) In 20x5, Parco disposed of a non-current property asset for $2,380,000. The carrying amount of the property at the date of disposal was $1,200,000. There were no other disposals of non-current assets.

(c) Goodwill in both subsidiaries was unimpaired.

(d) During the year, Parco paid a dividend of $7,000,000, and Alpha paid a dividend of $800,000. No dividends were declared by Beta.

The consolidated income statement for the year ended 31 December 20x5 and the consolidated statements of financial position as at 31 December 20x4 and 31 December 20x5 of Parco Group are shown on the following pages.

page 518

PARCO GROUP
Consolidated Income Statement and Partial Statement of Changes in Equity
For the Year Ended 31 December 20x5

	$'000
Revenue	$122,000
Cost of sales	(86,350)
Gross profit	$ 35,650
Operating expenses	(6,780)
Depreciation expense	(5,350)
Interest expense	(1,540)
Operating profit	$ 21,980
Gain on disposal of fixed asset	1,180
Profit before tax	$ 23,160
Taxation	(4,830)
Profit after tax	$ 18,330
Profit allocated to non-controlling interests	(800)
Profit attributable to the group	$ 17,530
Dividends declared	(7,000)
Retained earnings, 1 January 20x5	13,350
Retained earnings, 31 December 20x5	$ 23,880

PARCO GROUP
Statements of Financial Position
As at 31 December 20x4 and 31 December 20x5

	20x5 $'000	20x4 $'000
Property, plant and equipment	$ 48,150	$ 38,280
Goodwill	4,585	4,160
Current assets:		
Inventories	38,500	32,300
Accounts receivable	29,840	28,280
Cash	1,070	4,050
Total assets	$122,145	$107,070
Current liabilities:		
Accounts payable	$ 40,000	$ 38,790
Interest payable	1,500	1,350
Tax payable	5,500	4,840
Long-term loan	16,000	19,200
Non-controlling interests	3,265	1,540
Share capital	32,000	28,000
Retained earnings	23,880	13,350

Total liabilities and equity	$122,145	$107,070

The consolidated cash flow statement for 20x5 is shown below.

PARCO GROUP
Statement of Cash Flow
For the Year Ended 31 December 20x5

	$'000
Cash flows from operating activities	
Net profit after tax and non-controlling interests	$ 17,530
Add (deduct):	
Depreciation	5,350
Interest expense	1,540
Taxation	4,830
Gain on disposal of fixed asset	(1,180)
Increase in inventories (Note 1)	(4,850)
Decrease in receivables (Note 2)	40
Decrease in payables (Note 3)	(240)
Non-controlling interests' share of net profit	800
Interest paid (Note 4)	(1,390)
Tax paid (Note 5)	(4,170)
Net cash flows from operations	$ 18,260
Cash flows from investing activities	
Sale of fixed assets (Note 6)	2,380
Acquisition of subsidiary (Note 7)	(350)
Purchase of fixed assets (Note 8)	(12,620)
Net cash flows from investing activities	$(10,590)
Cash flows from financing activities	
Repayment of long-term loan (Note 9)	(3,450)
Dividends paid	(7,000)
Dividends paid to non-controlling shareholders (Note 10)	(200)
Net cash flows from financing activities	$(10,650)
Cash surplus (deficit)	(2,980)
Cash and cash equivalents at the beginning of the year	4,050
Cash and cash equivalents at the end of the year	$ 1,070

All figures in notes 1 to 10 are in thousands:

Note 1:

Increase in inventories = Opening inventories + Inventories from acquired subsidiary – Closing inventories
= $32,300 + $1,350 – $38,500 = $(4,850)

Note 2:

Decrease in receivables = Opening receivables + Receivables from acquired subsidiary – Closing receivables
= $28,280 + $1,600 – $29,840 = $40

Note 3:

Decrease in payables = Opening payables + Payables from acquired subsidiary – Closing payables
= $38,790 + $1,450 – $40,000 = $(240)

Note 4:

Interest paid = Opening interest payable + Interest expense – Closing interest payable
= $1,350 + $1,540 – $1,500 = $1,390

Note 5:

Tax paid = Opening tax payable + Tax expense – Closing tax payable
= $4,840 + $4,830 – $5,500 = $4,170

Note 6: Proceeds from sale of fixed asset: information as provided in item (b) under *Additional information*.

Note 7:

$$\text{Cash outflows from acquisition of subsidiary} = \text{Cash payment on acquisition} - \text{Cash balances of acquired subsidiary}$$
$$= \$500 - \$150$$
$$= \$350$$

Note 8:

$$\text{Purchase of fixed assets} = \text{Opening fixed assets} - \text{Disposal of fixed assets} + \text{Fixed assets from acquired subsidiary} - \text{Current depreciation} - \text{Closing fixed assets}$$
$$= \$38,280 - \$1,200 + \$3,800 - \$5,350 - \$48,150$$
$$= \$(12,620)$$

Note 9:

$$\text{Repayment of long-term loan} = \text{Opening loan payable} + \text{Loan from acquired subsidiary} - \text{Closing loan payable}$$
$$= \$19,200 + \$250 - \$16,000$$
$$= \$3,450$$

Note 10:

Dividends paid to non-controlling shareholders of Alpha = 25% × $800 = $200

Note that the non-controlling interests' share of net profit does not affect the group's cash flow position, but was subtracted to arrive at the group's consolidated net profit. Dividends paid to non-controlling shareholders by a partially owned subsidiary result in an outflow of cash under financing activities.

Non-controlling interests comprises:	
Balance as at 1 January 20x5	$1,540,000
Fair value of non-controlling interests of Beta as at 1 January 20x5	1,125,000
Share of current profit after tax	800,000
Dividends paid to non-controlling interests	(200,000)
Balance as at 31 December 20x5	$3,265,000

Note also that where there is an acquisition or sale made during the year, IAS 7 paragraph 40 requires the following disclosures to be made:

1. The total purchase or sale consideration;
2. The portion of the purchase/sale consideration paid for in cash;
3. The amount of cash and cash equivalents in the subsidiary acquired/sold; and
4. The amount of the assets and liabilities other than cash or cash equivalent in the subsidiary acquired/sold summarized by each major category.

The disclosures under IAS 7 paragraph 40 as applied to the above illustration are provided below for the acquisition of a subsidiary:

	$'000	
Property, plant and equipment	$3,800	
Inventories	1,350	
Receivables	1,600	
Cash	150	
Payables	(1,450)	
Long-term loan	(250)	
Fair value of net identifiable assets	$5,200	
Goodwill on acquisition	425	(Note 1)
Fair value of subsidiary	$5,625	
Less fair value of non-controlling interests	(1,125)	
Purchase consideration	$4,500	
Payment by issue of shares	(4,000)	
Cash paid	$ 500	
Cash and cash equivalents acquired	(150)	
Net cash paid on acquisition	$ 350	

Note 1: Goodwill on acquisition

	$'000
Purchase consideration	$4,500
Fair value of non-controlling interests	1,125
	$5,625
Less fair value of net identifiable assets	(5,200)
Goodwill on acquisition	$ 425

Consolidated Cash Flow Statements Involving Foreign Operations

Consolidated cash flow statements involving a foreign subsidiary have its unique features. However, translating cash flows of a foreign subsidiary involves elements from this chapter and Chapter 8. Chapter 8 deals with the translation of foreign operations. To appreciate the process, you will need to be familiar with the principles in this chapter and Chapter 8. We apply the principles that we have discussed above with respect to consolidating the cash flows of a local subsidiary. However, special considerations are required with respect to consolidating the cash flow statement of a foreign operation.

Cash flows from operations, investing and financing activities of a foreign subsidiary should be translated at the actual rates on the dates of the cash flows. While cash flows from investing and financing activities are generally linked to specific transactions, cash flows from operations occur throughout a period. Using the indirect method, the starting point is the net profit figure. Adjustments involving working capital changes and non-cash adjustments are necessary to arrive at operating cash flows. These adjustments should therefore be translated at the actual rates on the dates of the operating cash flows that they are meant to adjust. It would be incorrect to translate the working capital balances at the closing rates at the respective year end dates.

A full-length example of the preparation of a consolidated cash flow statement for a local parent and a foreign subsidiary is shown in Appendix 7E.

A real-life example of a consolidated cash flow statement follows. The extracts are from the 2018 Annual Report of Keppel Corporation Limited.

Consolidated Statement of Cash Flows

For the financial year ended 31 December 2018

	Note	2018 $'000	2017 $'000
Operating activities		1,042,566	801,046
Operating profit			
Adjustments:			
Depreciation and amortisation		182,386	212,380
Share-based payment expenses		34,885	32,583
Profit on sale of fixed assets and an investment property		(2,795)	(20,142)
Gain on disposal of subsidiaries		(604,638)	(146,542)
Gain on disposal of associated companies		(48,783)	(62,673)
Impairment/write-off of fixed assets		6,911	15,530
Impairment/(write-back of impairment) of associated companies		60,782	(39,192)
Impairment of investments		—	14,330
Fair value gain on investment properties		(84,886)	(177,939)
Profit on sale of investments		(2,232)	(35,294)
(Gain)/loss from change in interest in associated companies		(63,622)	13,075
Unrealised foreign exchange differences		27,622	(87,745)
Operational cash flow before changes in working capital		548,196	519,417
Working capital changes:			
Stocks			
Contract assets		(394,258)	438,670
Debtors		357,046	478,634
Creditors		543,245	122,556
Contract liabilities		(696,015)	(217,728)
Investments		12,430	357,652
Intangibles		(5,448)	(17,549)
Amount due to/from associated companies		(561)	(731)
		177	(60,578)
		364,812	1,620,343
Interest received		154,482	130,832
Interest paid		(198,637)	(184,841)
Net income taxes paid		(195,904)	(363,377)
Net cash from operating activities		124,753	1,202,957
Investing activities			
Acquisition of subsidiaries	A	(38,052)	—
Acquisition and further investment in associated companies		(365,818)	(291,356)
Acquisition of fixed assets and investment properties		(254,511)	(392,991)
Disposal of subsidiaries		1,085,671	878,873
Proceeds from disposal of associated companies and return of capital	B	179,342	96,954
Proceeds from disposal of fixed assets		5,524	37,385
Advances to/from associated companies		(216,636)	(42,555)
Dividends received from investments and associated companies		281,375	270,199
Net cash from investing activities		676,895	556,509
Financing activities			
Acquisition of additional interest in subsidiaries		(3,337)	(66,380)
Proceeds from share issues		412	2,916
Proceeds from reissuance of treasury shares pursuant to share option scheme		5,324	1,374
Proceeds from non-controlling shareholders of subsidiaries		–	77
Proceeds from term loans		1,549,445	1,700,023
Repayment of term loans		(1,939,475)	(2,707,102)
Purchase of treasury shares		(90,758)	(19,428)
Dividend paid to shareholders of the Company		(526,152)	(363,531)
Dividend paid to non-controlling shareholders of subsidiaries		(20,321)	(26,574)
Net cash used in financing activities		(1,024,862)	(1,478,625)
Net (decrease)/increase in cash and cash equivalents	C	(223,214)	280,841
Cash and cash equivalents as at beginning of year		2,241,448	2,018,772
Effects of exchange rate changes on the balance of cash held in foreign currencies		(46,390)	(58,165)
Cash and cash equivalents as at end of year		1,971,844	2,241,448

Consolidated Statement of Cash Flows

Reconciliation of liabilities arising from financing activities

2018

	1 January 2018 $'000	Principal and interest payments (net of proceeds) $'000	Non-cash changes: Acquisition of subsidiaries $'000	Non-cash changes: Disposal of subsidiaries $'000	Non-cash changes: Interest expense (Note 26) $'000	Non-cash changes: Foreign exchange movement $'000	31 December 2018 $'000
Term loans	7,793,003	(588,667)	297,923	(171,380)	199,464	18,166	7,548,509

2017

	1 January 2017 $'000	Principal and interest payments (net of proceeds) $'000	Non-cash changes: Disposal of subsidiaries $'000	Non-cash changes: Interest expense (Note 26) $'000	Non-cash changes: Foreign exchange movement $'000	31 December 2017 $'000
Term loans	9,053,042	(1,191,920)	(138,288)	189,223	(119,054)	7,793,003

Notes to Consolidated Statement of Cash Flows

A. Acquisition of Subsidiaries

During the financial year, net assets of subsidiaries acquired at their fair values were as follows:

	2018 $'000	2017 $'000
Fixed assets	47	–
Investment Properties	360,000	–
Debtors and other assets	530	–
Bank balances and cash	18,521	–
Creditors	(6,778)	–
Borrowings	(297,923)	–
Current and deferred taxation	(3,827)	–
Total identifiable net assets at fair value	70,570	–
Amount previously accounted for as associated companies	(32,484)	–
Loss on remeasurement of previously held equity interest at fair value at acquisition date	18,487	–
Net assets acquired	56,573	–
Total purchase consideration	56,573	–
Less: Bank balances and cash acquired	(18,521)	–
Cash outflow on acquisition	38,052	–

Acquisition of subsidiaries during the year relates mainly to the acquisition of 77.6% interest in PRE 1 Investments Pte Ltd on 20 December 2018.

B. Disposal of Subsidiaries

During the financial year, the book values of net assets of subsidiaries disposed were as follows:

	2018 $'000	2017 $'000
Fixed assets	(4,272)	(129,536)
Investment properties	(948,613)	(405,604)
Long term investments	—	(2,102)
Stocks	(692,651)	(282,344)
Debtors and other assets	(7,939)	(159,030)
Bank balances and cash	(39,194)	(36,374)
Creditors and other liabilities	446,973	77,431
Borrowings	171,380	138,288
Current and deferred taxation	139,863	13,280
Non-controlling interests	210,166	69,451
	(724,287)	(716,540)
Amount accounted for as associated company	—	73,593
Net assets disposed of	(724,287)	(642,947)
Net profit on disposal	(604,638)	(146,542)
Realisation of foreign currency translation reserve	(7,575)	9,698
Sale proceeds	(1,336,500)	(779,791)
Add: Payments received in advance	—	(174,538)
Less: Advance payments received in prior year	174,538	—
Less: Bank balances and cash disposed	39,194	36,374
Less: Deferred proceeds	37,097	39,082
Cash outflow on acquisition	(1,085,671)	(878,873)

Significant disposal of subsidiaries during the year relates to the sale of Keppel China Marina Holdings Pte Ltd, Keppel Township Development (Shenyang) Co. Ltd, Keppel Bay Property Development (Shenyang) Co. Ltd and Aether Limited.

Significant disposal in the prior year relates to the sale of Keppel Lakefront (Nantong) Property Development Co Ltd, Wiseland Investment (Myanmar) Limited, 80% interest in PT Sentral Tunjungan Perkasa, Keppel DC Singapore 4, 90% interest in Keppel DC Singapore 3, Keppel Verolme and Kepwealth Property Phils., Inc. In addition, the Group lost control of some entities in the prior year but continued to retain significant influence. These entities were deconsolidated from the Group's financial statements for the financial year ended 31 December 2017 and were accounted for as associated companies using the equity method from their respective dates of ceasing control.

C. Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand and balances with banks. Cash and cash equivalents in the consolidated statement of cash flows comprise the following balance sheet amounts:

	2018 $'000	2017 $'000
Bank balances, deposits and cash	1,981,406	2,273,788
Amounts held under escrow accounts for overseas acquisition of land, payment of construction cost and liabilities	(9,562)	(32,340)
	1,971,844	2,241,448

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Self-Study Illustrations on Complex Consolidation

Question 1

The financial statements of P Co and its subsidiaries and associate are shown below:

Income Statement for year ended 31 December 20x6	P Co	B Co	D Co	C Co	Consolidated
Profit before tax	4,300,000	1,400,000	620,000	480,000	
Tax	(860,000)	(280,000)	(124,000)	(96,000)	
Profit after tax	3,440,000	1,120,000	496,000	384,000	
Income to non-controlling interests					
Dividends declared	(200,000)	(130,000)	(50,000)	(80,000)	
Profit retained	3,240,000	990,000	446,000	304,000	
Retained earnings, 1 Jan 20x6	2,356,000	800,200	800,000	450,000	
Retained earnings, 31 Dec 20x6	5,596,000	1,790,200	1,246,000	754,000	

Statement of Financial Position as at 31 December 20x6	P Co	B Co	D Co	C Co	Consolidated
Goodwill					
Intangible assets, net book value					
Fixed assets, net book value	2,789,000	1,954,000	1,340,000	890,000	
Investment in B Co	2,200,000				
Investment in D Co	1,200,000				
Investment in C Co		900,000			
Inventory	790,000	600,000	450,000	247,000	
Intercompany receivable	1,500,000				
Other net assets	1,970,000	1,265,000	803,450	520,000	
Cash	300,000	256,000	120,000	120,000	
	10,749,000	4,975,000	2,713,450	1,777,000	
Accounts payable	2,453,000	484,800	667,450	403,000	
Bank loans	1,400,000				
Intercompany payable		1,500,000			
Share capital	1,300,000	1,200,000	800,000	520,000	
Retained earnings	5,596,000	1,790,200	1,246,000	754,000	
Revaluation reserves				100,000	
Non-controlling interests					
	10,749,000	4,975,000	2,713,450	1,777,000	

	B Co	D Co	C Co
Date of acquisition by direct investor	1 Aug 20x4	1 Jan 20x5	1 Jan 20x3
Percentage acquired by P Co	90%	60%	
Percentage of retained interests by P Co		40%	
Percentage acquired by B Co			70%

Shareholders' equity at date of acquisition by direct investor			
Share capital	1,200,000	800,000	520,000
Retained earnings	650,000	390,000	311,000
Revaluation reserves			85,000
	1,850,000	1,190,000	916,000
	B Co		**C Co**
Fair value of non-controlling interest at 1 Aug 20x4	226,900		305,500
Fair value of non-controlling interest at 1 Jan 20x3			294,800
Retained earnings of C Co at 1 Aug 20x4 (when B Co was acquired by P Co)			320,000
Revaluation reserves of C Co at 1 Aug 20x4			95,000
Additional revaluation reserves of C Co as at 31 Dec 20x6			5,000

Fair and book values of net assets of each company at date of acquisition by P Co

	B Co →		D Co →		C Co →	
	Book value	**Fair value**	**Book value**	**Fair value**	**Book value**	**Fair value**
Intangible assets	—	150,000				
Inventory					120,000	200,000
Other net assets	1,850,000	1,850,000	1,190,000	1,190,000	815,000	815,000
Total net assets	1,850,000	2,000,000	1,190,000	1,190,000	935,000	1,015,000

Date of acquisition of D as a subsidiary	1 July 20x2
Fair value of consideration transferred	1,800,000
Fair value of NCI of D Co on 1 July 20x2	800,000
P Co's share of post-acquisition change in equity of D Co from 1 July 20x2 to 1 Jan 20x5	280,000
Date of loss of control	1 Jan 20x5
Sales proceeds for 20% interest	700,000
Fair value of retained interests	1,400,000

Additional information:

1. Intangible assets of B Co had an indefinite useful life. On 31 December 20x6, the annual impairment test revealed a loss of $100,000.
2. Ninety percent of the undervalued inventory of C Co was sold to third parties during 20x5 and the remaining was written down to zero value during 20x6.
3. P provided architectural services to B on an extension of a building. The extension was completed on 1 July 20x6 and had an estimated useful life of ten years. All progress billings have been paid and the project was closed on 1 July 20x6. The following transactions were recorded in P's books:

Project fee revenue	
1 Sept 20x5 to 31 Dec 20x5	190,000
1 Jan 20x6 to 30 June 20x6	60,000

Project costs	
1 Sept 20x5 to 31 Dec 20x5	160,000
1 Jan 20x6 to 30 June 20x6	50,000

4. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x6.
2. Analytically determine the following balances in the consolidated financial statements:
   a. Investment in associate
   b. Non-controlling interests
   c. Retained earnings as at 31 December 20x6.
3. Complete the consolidated totals for the income statement for the year ended 31 December 20x6 and the statement of financial position as at 31 December 20x6.

Question 2

The financial statements of P Co and its subsidiaries and associate are as follows:

Income Statement for year ended 31 December 20x3					
	P Co	X Co	Z Co	Y Co	Consolidated
Profit before tax	6,000,000	2,500,000	1,000,000	500,000	
Tax	(1,200,000)	(500,000)	(180,000)	(100,000)	
Profit after tax	4,800,000	2,000,000	820,000	400,000	
Income to Non-controlling interest					
Dividends declared	(320,000)	(240,000)	(60,000)	(65,000)	
Profit retained	4,480,000	1,760,000	760,000	335,000	
Retained earnings, 1 Jan 20x3	4,500,000	1,250,000	468,000	800,000	
Retained earnings, 31 Dec 20x3	8,980,000	3,010,000	1,228,000	1,135,000	

Statement of Financial Position as at 31 December 20x3					
	P Co	X Co	Z Co	Y Co	Consolidated
Goodwill					
Fixed assets, net book value	3,500,000	1,934,790	1,450,000	620,000	
Investment in X Co	3,200,000				
Investment in Z Co	980,000				
Investment in Y Co		790,000			
Inventory	450,000	620,000	300,000	900,000	
Intercompany receivable		100,000			
Other net assets	2,790,000	1,290,000	1,620,000	800,000	
Cash	360,000	200,000	145,000	90,730	
	11,280,000	4,934,790	3,515,000	2,410,730	
Accounts payable	740,000	724,790	1,487,000	825,730	
Intercompany payable	100,000				
Share capital	1,460,000	1,200,000	800,000	350,000	
Retained earnings	8,980,000	3,010,000	1,228,000	1,135,000	
Revaluation reserves				100,000	
Capital reserve					
Non-controlling interests					
	11,280,000	4,934,790	3,515,000	2,410,730	

	X Co	Z Co	Y Co
Date of acquisition by direct investor	1 Jan 20x1	1 Jan 20x1	1 July 20x0
Percentage acquired by P Co	90%	30%	
Percentage of retained interests by P Co	70%		
Percentage acquired by X Co			60%
Shareholders' equity at date of acquisition by direct investor			
Share capital	1,200,000	800,000	350,000
Retained earnings	700,000	320,000	520,000
Revaluation reserves			90,000
	1,900,000	1,120,000	960,000

	X Co	Y Co
Fair value of non-controlling interests at 1 January 20x1	400,000	444,000
Fair value of non-controlling interests at 1 July 20x0		320,000

Retained earnings of Y Co at 1 January 20x1		
(when X Co was acquired by P Co)		590,000
Revaluation reserves of Y Co at 1 January 20x1		120,000
Revaluation reserves of Y Co decreased on 31 Dec 20x3		(20,000)
Proceeds on sale of 20% of X Co at 31 Dec 20x2	1,100,000	

Fair and book values of net assets of each company at date of acquisition by P

	X Co ⟶		Z Co ⟶		Y Co ⟶	
	Book value	**Fair value**	**Book value**	**Fair value**	**Book value**	**Fair value**
Provision for claims		(100,000)				
Intangible asset				400,000		
Other net assets	1,900,000	1,900,000	1,120,000	1,120,000	1,060,000	1,060,000
Total net assets	1,900,000	1,800,000	1,120,000	1,520,000	1,060,000	1,060,000

Additional information:

1. The fair values of identifiable net assets of Y Co were close to their book values on 1 July 20x0 and 1 January 20x1. The estimated useful life of intangible assets of Z Co was five years.
2. The provision for claims of X Co was settled in full during 20x1 for $130,000.
3. On 1 July 20x3, Z provided new electrical equipment to P Co at the invoiced price of $120,000. The original cost was $200,000 and the net book value was $60,000. The estimated useful life of the equipment was three years. Z Co recognized a profit of $$60,000 on the sale. Due to operational changes, the recoverable amount of the equipment as at 31 December 20x3 was estimated as $60,000.
4. On 1 October 20x2, Y sold inventory to P Co at the transfer price of $100,000. The original cost and carrying amount of the inventory was $70,000. Percentage resold to third parties were as follows:

20x2	10%
20x3	80%

5. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x3.
2. Analytically determine the following balances in the consolidated financial statements:
   a. Investment in associate
   b. Non-controlling interests
   c. Retained earnings as at 31 December 20x3
3. Complete the consolidated totals for the income statement for the year ended 31 December 20x3 and the statement of financial position as at 31 December 20x3.

Question 3

The financial statements of P Co and its subsidiaries and associate are shown below:

Income Statement for year ended 31 December 20x3

	P Co	X Co	Z Co	Y Co	Consolidated
Profit before tax	5,790,000	2,234,900	1,000,000	1,200,000	
Tax	(1,158,000)	(446,980)	(200,000)	(240,000)	
Profit after tax	4,632,000	1,787,920	800,000	960,000	
Income to non-controlling interests					
Dividends declared	(230,000)	(180,000)	(46,000)	(120,000)	
Profit retained	4,402,000	1,607,920	754,000	840,000	
Retained earnings, 1 Jan 20x3	4,321,000	1,387,000	327,000	960,000	
Retained earnings, 31 Dec 20x3	8,723,000	2,994,920	1,081,000	1,800,000	

Statement of Financial Position as at 31 December 20x3

	P Co	X Co	Z Co	Y Co
Goodwill				
Fixed assets, net book value	4,890,000	2,371,000	1,760,000	1,325,000
Investment in X Co	4,500,000			
Investment in Z Co	1,200,000			
Investment in Y Co		850,000		
Inventory	589,000	563,000	256,000	328,000
Intercompany receivable	200,000			
Other net assets	3,200,000	980,000	1,769,000	732,000
Cash	120,000	216,700	27,000	123,760
	14,699,000	4,980,700	3,812,000	2,508,760
Accounts payable	3,176,000	285,780	2,011,000	208,760
Intercompany payable		200,000		
Share capital	2,800,000	1,500,000	720,000	300,000
Retained earnings	8,723,000	2,994,920	1,081,000	1,800,000
Revaluation reserves				200,000
Capital reserve				
Non-controlling interests				
	14,699,000	4,980,700	3,812,000	2,508,760

page 530

	X Co	Z Co	Y Co
Date of acquisition by direct investor	1 Jan 20x1	1 Jan 20x1	1 July 20x0
Percentage acquired by P Co	70%	30%	
Percentage of revised interests by P Co	90%		
Percentage acquired by X Co			60%
Shareholders' equity at date of acquisition by direct investor			
Share capital	1,500,000	720,000	300,000
Retained earnings	600,000	240,000	400,000
Revaluation reserves			90,000

	2,100,000	960,000	790,000
	X Co		Y Co
Fair value of non-controlling interests at 1 January 20x1	1,311,429		400,000
Fair value of non-controlling interests at 1 July 20x0			280,000
Retained earnings of Y Co at 1 January 20x1 (when X Co was acquired by P Co)			430,000
Revaluation reserves of Y Co at 1 January 20x1			120,000
Revaluation reserves of Y Co arising on 31 Dec 20x3			80,000

Consideration paid for additional interests of 20% in X Co at 31 Dec 20x2 is $1,300,000

Fair and book values of net assets of each company at date of acquisition by P

	X Co		Z Co		Y Co	
	Book value	Fair value	Book value	Fair value	Book value	Fair value
Inventory	20,000	35,000				
Intangible asset				50,000		100,000
Other net assets	2,080,000	2,080,000	960,000	960,000	850,000	850,000
Total net assets	2,100,000	2,115,000	960,000	1,010,000	850,000	950,000

Additional information:

1. The undervalued inventory of X Co was sold to third parties during 20x2.
2. The unrecognized intangible asset of Z Co and Y Co had an estimated useful life of five years from acquisition date by P Co.
3. On 1 October 20x2, Y sold to X inventory at transfer price of $50,000. The original cost was $30,000. Ten percent was resold to third parties during 20x2 and an additional 80% resold during 20x3.
4. On 1 July 20x3, Z transferred to P fixed assets at transfer price of $130,000. The original cost was $180,000 and the accumulated depreciation was $126,000. The remaining useful life as at the date of transfer was three years.
5. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x3.
2. Analytically determine the following balances in the consolidated financial statements as at 31 December 20x3:
   a. Investment in associate
   b. Non-controlling interests
   c. Retained earnings
3. Complete the consolidated totals for the income statement for the year ended 31 December 20x3 and the statement of financial position as at 31 December 20x3.

Question 4

The financial statements of P Co and its subsidiaries are shown below (adapted from Question 1):

Income Statement for year ended 31 December 20x6					
	P Co	B Co	D Co	C Co	Consolidated
Profit before tax	4,300,000	1,400,000	620,000	480,000	
Tax	(860,000)	(280,000)	(124,000)	(96,000)	
Profit after tax	3,440,000	1,120,000	496,000	384,000	
Income to non-controlling interests					
Dividends declared	(200,000)	(130,000)	(50,000)	(80,000)	
Profit retained	3,240,000	990,000	446,000	304,000	
Retained earnings, 1 Jan 20x6	2,356,000	800,200	800,000	450,000	
Retained earnings, 31 Dec 20x6	5,596,000	1,790,200	1,246,000	754,000	

Statement of Financial Position as at 31 December 20x6					
	P Co	B Co	D Co	C Co	Consolidated
Goodwill					
Intangible assets, net book value					
Fixed assets, net book value	2,789,000	1,954,000	1,340,000	890,000	
Investment in B Co	2,200,000				
Investment in D Co	720,000				
Investment in C Co		900,000			
Inventory	790,000	600,000	450,000	247,000	
Intercompany receivable	1,500,000				
Other net assets	1,970,000	1,265,000	803,450	520,000	
Cash	300,000	256,000	120,000	120,000	
	10,269,000	4,975,000	2,713,450	1,777,000	
Accounts payable	1,973,000	484,800	667,450	403,000	
Bank loans	1,400,000				
Intercompany payable		1,500,000			
Share capital	1,300,000	1,200,000	800,000	520,000	
Retained earnings	5,596,000	1,790,200	1,246,000	754,000	
Revaluation reserves				100,000	
Non-controlling interests					
	10,269,000	4,975,000	2,713,450	1,777,000	

	B Co	D Co	C Co
Date of acquisition by direct investor	1 Aug 20x4	1 Jan 20x5	1 July 20x3
Percentage acquired by P Co	90%	60%	(Note A)
Percentage acquired by B Co			70%
Shareholders' equity at date of acquisition by direct investor			
Share capital	1,200,000	800,000	520,000
Retained earnings	650,000	390,000	311,000
Revaluation reserves			85,000
	1,850,000	1,190,000	916,000

	B Co	C Co

Fair value of non-controlling interests at 1 Aug 20x4	226,900	305,500
Fair value of non-controlling interests at 1 July 20x3		294,800
Retained earnings of C Co at 1 Aug 20x4 (when B Co was acquired by P Co)		320,000
Revaluation reserves of C Co at 1 Aug 20x4		95,000
Additional revaluation reserves of C Co as at 31 Dec 20x6		5,000

Fair and book values of net assets of each company at date of acquisition by P Co

	B Co		D Co		C Co	
	Book value	**Fair value**	**Book value**	**Fair value**	**Book value**	**Fair value**
Intangible assets	—	150,000				
Inventory					120,000	200,000
Other net assets	1,850,000	1,850,000	1,190,000	1,190,000	815,000	815,000
Total net assets	1,850,000	2,000,000	1,190,000	1,190,000	935,000	1,015,000

Note A:

Date of acquisition of 40% interests in D (significant influence)	1 July 20x2
Date of additional investment of 20% in D (gain of control)	1 January 20x5
Fair value of consideration transferred on 1 Jan 20x5	400,000
Fair value of non-controlling interests on 1 Jan 20x5	700,000
P Co's share of post-acquisition change in equity of D Co from 1 July 20x2 to 1 Jan 20x5	280,000
Fair value of previously-held interests on 1 Jan 20x5	700,000
Initial investment of previously-held interests	320,000

Additional information:

1. Intangible assets of B Co had an infinite useful life. On 1 January 20x6, new licensing requirements resulted in a restricted useful life of 10 years from this date.
2. Ninety percent of the undervalued inventory of C Co was sold to third parties during 20x5; ten percent was sold during 20x6.
3. P provided financing to B on the self-construction of a building. The building was completed on 1 July 20x6 and had an estimated useful life of 10 years. The following transactions were recorded in P's books:

Interest income	
1 Sept 20x5 to 31 Dec 20x5	120,000
1 Jan 20x6 to 30 June 20x6	100,000
Interest expense	
1 Sept 20x5 to 31 Dec 20x5	80,000
1 Jan 20x6 to 30 June 20x6	60,000

4. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x6.
2. Analytically determine the following balances in the consolidated financial statements:
   a. Non-controlling interests
   b. Retained earnings as at 31 December 20x6.
3. Complete the consolidated totals for the income statement for the year ended 31 December 20x6 and the balance sheet as at 31 December 20x6.

SOLUTIONS

The following abbreviations are used throughout the solutions:

AC: Analytical check

Acq: Acquisition

DTA: Deferred tax assets

DTL: Deferred tax liabilities

FV: Fair value

INA: Identifiable Net Assets

NPAT: Net profit after tax

NPBT: Net profit before tax

NCI: Non-controlling interests

RE: Retained earnings

ORE: Opening retained earnings

Solution to Question 1

Income Statement for year ended 31 December 20x6						
	P Co	B Co	D Co	C Co	Consolidated	
Profit before tax	4,300,000	1,400,000	620,000	480,000	6,069,400	Note 1
Tax	(860,000)	(280,000)	(124,000)	(96,000)	(1,212,800)	Note 2
Profit after tax	3,440,000	1,120,000	496,000	384,000	4,856,600	
Income to NCI					(238,112)	Note 3
Dividends declared	(200,000)	(130,000)	(50,000)	(80,000)	(200,000)	
Profit retained	3,240,000	990,000	446,000	304,000	4,418,488	
Retained earnings, 1 Jan20x6	2,356,000	800,200	800,000	450,000	2,876,792	Note 4
Retained earnings, 31 Dec20x6	5,596,000	1,790,200	1,246,000	754,000	7,295,280	AC

Statement of Financial Position as at 31 December 20x6						
	P Co	B Co	D Co	C Co	Consolidated	
Goodwill					663,400	CJE1
Intangible assets, net book value					50,000	
Fixed assets, net book value	2,789,000	1,954,000	1,340,000	890,000	5,595,000	Note 5
Investment in B Co	2,200,000					
Investment in D Co	1,200,000				1,742,400	AC
Investment in C Co		900,000				
Inventory	790,000	600,000	450,000	247,000	1,637,000	
Intercompany receivable	1,500,000					
Other net assets	1,970,000	1,265,000	803,450	520,000	3,752,600	Note 6
Cash	300,000	256,000	120,000	120,000	676,000	
	10,749,000	4,975,000	2,713,450	1,777,000	14,116,400	
Accounts payable	2,453,000	484,800	667,450	403,000	3,340,800	
Bank loans	1,400,000				1,400,000	
Intercompany payable		1,500,000				
Share capital	1,300,000	1,200,000	800,000	520,000	1,300,000	
Retained earnings	5,596,000	1,790,200	1,246,000	754,000	7,295,280	
Revaluation reserves				100,000	3,150	
Non-controlling interests					777,170	AC
	10,749,000	4,975,000	2,713,450	1,777,000	14,116,400	

Note 1:			
Combined P and subsidiaries	6,180,000	4,300,000 + 1,400,000 + 480,000
Impairment loss of intangible asset	(100,000)	
Current cost of sales of undervalued inventory of C	(8,000)	10%*80,000
Adjustment for unrealized profit (P to B)	(8,000)	10,000 – (30,000 + 10,000)/10*6/12
Less dividend income from B Co	(117,000)	90%*130,000
from C Co	(56,000)	70%*80,000
from D Co	(20,000)	40%*50,000
Add share of profit of associate	198,400	
Consolidated profit before tax	6,069,400	

Note 2:	Combined P and subsidiaries	(1,236,000)	860,000 + 280,000 + 96,000
	Tax on:		
	Impairment loss of intangible asset	20,000	
	Current cost of sales of undervalued inventory of C	1,600	
	Adjustment for unrealized profit (P to B)	1,600	
		(1,212,800)	

Note 3:	Income to NCI of B	98,400
	Income to NCI of C	139,712
		238,112

Note 4:	P's RE at 1 Jan 20x6	2,356,000	
	P's share of B's post-acquisition RE	135,180	90%*(800,200−650,000)
	P's share of C's post-acquisition RE	81,900	63%*(450,000−320,000)
	P's share of D's post-acquisition RE	164,000	40%*(800,000−390,000)
	P's share of past cost of sales of undervalued inventory of C	(36,288)	63%*80%*90%*80,000
	P's share of unrealized construction, 1 Jan (P to B)	(24,000)	80%*(190,000−160,000)
	Remeasurement gain on loss of control of D Co	200,000	
		2,876,792	

Note 5: 2,789,000 + 1,954,000 + 8,90,000 – (40,000*9.5/10)

Note 6: 1,970,000 + 1,265,000 + 520,000 + (20%*40,000*9.5/10) – 20%*50,000

CJE1: Elimination of investment in B Co and C Co

Dr Share capital (B Co)	1,200,000	
Dr Share capital (C Co)	520,000	
Dr Retained earnings (B Co)	650,000	
Dr Retained earnings (C Co)	320,000	
Dr Revaluation reserve (C Co)	95,000	
Dr Inventory	80,000	
Dr Intangible assets	150,000	
Dr Goodwill	663,400	
Cr Deferred tax liability		46,000
Cr Investment in B Co		2,200,000
Cr Investment in C Co		900,000
Cr Non-controlling interests in B Co		226,900
Cr Non-controlling interests in C Co		305,500
	3,678,400	3,678,400

Goodwill in sub-group				
Fair value of INA of sub-group at 1 Aug 20x4				
Share capital (B Co)		1,200,000		
Retained earnings (B Co)		650,000		
Book value of B Co			1,850,000	
Less B Co's investment in C Co			(900,000)	
Add intangible assets			150,000	
less deferred tax liability			(30,000)	
Fair value of INA of B Co			1,070,000	
Share capital (C Co)		520,000		
Retained earnings (C Co)		320,000		
Revaluation reserve (C Co)		95,000		
Add undervalued inventory		80,000		
Deferred tax liability		(16,000)		
Fair value of INA of C Co			999,000	
B Co's consolidated equity or net assets			2,069,000	
Fair value of consideration transferred		2,200,000		
Fair value of non-controlling interests (B Co)		226,900		
Fair value of non-controlling interests (C Co)		305,500		
Less fair value of INA of sub-group		(2,069,000)	(see workings above)	
Goodwill			663,400	
P Co's goodwill			90%	
Fair value of consideration transferred			2,200,000	
Less share of fair value of INA of sub-group				
Share of B Co's FV of INA	963,000	90%*1,070,000		
Share of C Co's FV of INA	629,370	90%*70%*999,000	(1,592,370)	
Goodwill attributable to P Co			607,630	
		Total		
B Co's NCI			226,900	
Less fair value of INA of sub-group				
Share of B Co's FV of INA	107,000	10%*1,070,000		
Share of C Co's FV of INA	69,930	10%*70%*999,000		
B Co's consolidated equity as at 1 January 20x4			176,930	
B Co's NCI's goodwill			49,970	30%*999,000
C Co's NCI			305,500	
Less Share of C Co's FV of INA			299,700	
C Co's NCI's goodwill			5,800	
Total Goodwill			663,400	

CJE2: Loss of control of D Co

Dr Investment	200,000	
Cr ORE		200,000

Workings:

	Group	**Legal**

Sales proceeds on sale of 20%	700,000	700,000	
Fair value of retained interests (40%)	1,400,000		
Fair value of consideration transferred on 1 July 20x2	(1,800,000)	(600,000)	1,800,000/60%*20%
P Co's share of post-acquisition change in equity of D Co (1 Jul 20x2 to 1 Jan 20x5)	(280,000)		
Profit recognized on 1 Jan 20x5	20,000	100,000	

	Group profit on sale	Group remeasurement gain
Sales proceeds on sale of 20%	700,000	
Fair value of retained interests (40%)		1,400,000
Fair value of consideration transferred on 1 July 20x2	(600,000)	(1,200,000)
P Co's share of post-acquisition change in equity of D Co (1 Jul 20x2 to 1 Jan 20x5)	(93,333)	(186,667)
P&L effect	6,667	13,333

During 20x5, the following entry was passed

Dr Investment	200,000	1,400,000−1,200,000	
Dr Profit on sale	93,333	100,000−6,667	
Cr Remeasurement gain			13,333
Cr ORE			280,000
	293,333		293,333

CJE3: Impairment of intangible asset

Dr Impairment expense	100,000	
Cr Accumulated impairment		100,000

CJE4: Tax effects of CJE3

Dr Deferred tax liability	20,000	
Cr Tax expense		20,000

CJE5: Allocate share of post-acq RE of B Co to NCI of B Co

Dr Opening RE	15,020		
Cr NCI (BS)		15,020	
RE at 1 Jan 20x6		800,200	
RE at date of acquisition		650,000	
Change in RE		150,200	
NCI's share		15,020	10%*150,200

CJE6: Eliminate dividends declared by B Co

Dr Dividend income	117,000		
Dr Non-controlling interests	13,000		10%*130,000
Cr Dividend declared			130,000

CJE7: Allocate share of current income of B Co to NCI of B Co

Dr Income to NCI	98,400		
Cr NCI (BS)		98,400	
NPAT of B Co		1,120,000	
Impairment expense, after tax		(80,000)	
Less dividend received from C Co		(56,000)	
Adjusted NPAT		984,000	

CJE8: Adjustment of construction profit (transfer from P to B)

Dr ORE	30,000		
Dr Construction revenue	60,000		
Cr Construction expense		50,000	
Cr Fixed asset		40,000	

CJE9: Tax effects of CJE8

Dr DTA	8,000		
Cr Tax expense		2,000	
Cr ORE		6,000	

CJE10: Adjustment of excess depreciation on fixed assets

Dr Accumulated depreciation	2,000		6/12*40,000*1/10
Cr Depreciation expense		2,000	

CJE11: Tax effects of CJE10

Dr Tax expense	400		
Cr DTA		400	

CJE12: Adjustment of cost of sales of undervalued inventory

Dr ORE	45,360		
Dr NCI	26,640		37%*90%*80,000
Cr Inventory		72,000	

CJE13: Tax effects of CJE12

Dr DTL	14,400		
Cr ORE		9,072	
Cr NCI		5,328	

CJE14: Cost of sales of undervalued inventory

Dr Cost of sales (PL)	8,000		
Cr Inventory		8,000	

CJE15: Tax effects of CJE14

Dr DTL	1,600	
Cr Tax expense		1,600

CJE16: Allocation of post-acquisition RE to total NCI of C Co

Dr Opening RE	48,100			
Cr Non-controlling interests		48,100		
Retained earnings at 1 Jan 20x6				450,000
Retained earnings at 1 Aug 20x4				320,000
Change in retained earnings				130,000
Direct NCI			30%	39,000
Indirect NCI			7.00%	9,100
Total NCI			37%	48,100

CJE17: Allocation of current profit after tax to total NCI of C Co

Dr Income to NCI	139,712			
Cr Non-controlling Interests		139,712		
Net profit after tax of C Co			384,000	
Less cost of sale of undervalued inventory, after tax			(6,400)	10%*80%*80,000
Adjusted NPAT			377,600	
Direct NCI		30%	113,280	
Indirect NCI		7%	26,432	
Total NCI		37%	139,712	

CJE18: Elimination of dividends declared by C Co

Dr Dividend income	56,000		70%*80,000
Dr Non-controlling interests	24,000		30%*80,000
Cr Dividend declared		80,000	

CJE19: Allocation of post-acq revaluation reserves to total NCI of C Co

Dr Share of Revaluation reserves to NCI	1,850			
Cr Non-controlling interests		1,850		
Revaluation reserves at 31 Dec 20x6				100,000
Revaluation reserves at 1 Jan 20x6				95,000
Change in revaluation reserves				5,000
Direct NCI			30%	1,500
Indirect NCI			7%	350
Total NCI			37%	1,850

CJE20: Eliminate intercompany payable and receivable

Dr Intercompany payable	1,500,000	
Cr Intercompany receivable		1,500,000

Analytical Check of Non-controlling Interests

Total Non-controlling interests as at 31 December 20x6

	Total NCI	NCI of B Co and indirect NCI of C Co	Direct NCI of C Co
CJE1: Elimination of investment in B Co and C Co	532,400	226,900	305,500
CJE5: Allocate share of post-acq RE of B Co to NCI of B Co	15,020	15,020	
CJE6: Eliminate dividends declared by B Co	(13,000)	(13,000)	
CJE7: Allocate share of current income of B Co to NCI of B Co	98,400	98,400	
CJE12: Adjustment of cost of sales of undervalued inventory	(26,640)	(5,040)	(21,600)
CJE13: Tax effects of CJE12	5,328	1,008	4,320
CJE16: Allocation of post-acquisition RE to total NCI of C Co	48,100	9,100	39,000
CJE17: Allocation of current profit after tax to total NCI of C Co	139,712	26,432	113,280
CJE18: Elimination of dividends declared by C Co	(24,000)		(24,000)
CJE19: Allocation of post-acq revaluation reserves to total NCI of C Co	1,850	350	1,500
	777,170	359,170	418,000

Analytical check on non-controlling interests of B Co.		
B Co's shareholders' equity as at 31 December 20x6	2,990,200	1,200,000+1,790,200
Less investment in C Co	(900,000)	
	2,090,200	
NCI's share of book value of equity of B as at 31 Dec 20x6	209,020	10%*2,090,200
NCI's share of intangible asset, after tax as at 31 Dec 20x6	4,000	10%*80%*50,000
NCI of B Co's goodwill as at 31 Dec 20x6	49,970	
NCI of B Co and indirect NCI of C Co	262,990	

Analytical check of NCI of C Co			**Indirect NCI**	**Direct NCI**
C Co's shareholders' equity as at 31 December 20x6	1,374,000	520,000+754,000+100,000		
C Co's total NCI share of equity as at 31 December 20x6	508,380	37%*1,374,000	96,180	412,200
Goodwill attributable to C Co's NCI	5,800			5,800
Total NCI of C Co as at 31 December 20x6	514,180		96,180	418,000
Total NCI	**777,170**		359,170	418,000

EA1: Recognize share of post-acq RE of D Co

Dr Investment in D Co	164,000	
Cr ORE		164,000
RE of D as at 1 Jan 20x6		800,000

RE of D as at date of acquisition	390,000
Change in RE	410,000
Share of D's change in RE	164,000

EA2: Reclassify dividend income as a reduction of investment

Dr Dividend income	20,000	
Cr Investment in D Co		20,000

EA3: Recognize share of current profit after tax of D

Dr Investment in D Co	198,400	
Cr Share of profit of D		198,400

Workings:

NPAT	496,000
Share of NPAT of D	198,400

Analytical check of Investment in D Co:

Book value of shareholders' equity of D		2,046,000	800,000 + 1,246,000
P's share of D's identifiable net assets		818,400	
Implicit goodwill in Investment in D Co:			
Investment in D Co		1,400,000	
BV of net assets of D at acq	1,190,000		
FV-BV	0		
FV of net assets of D at acq	1,190,000		
Less Share of FV of net assets of D at acq		476,000	
Goodwill implicit in the Investment in D Co		924,000	
		1,742,400	

Investment in D Co, at cost	1,200,000
CJE2: Loss of control of D Co	200,000
EA1: Recognize share of post-acq RE of D Co	164,000
EA2: Reclassify dividend income as a reduction of investment	(20,000)
EA3: Recognize share of current profit after tax of D	198,400
Investment in D Co as at 31 Dec 20x6	**1,742,400**

Analytical check of closing retained earnings

P's RE	5,596,000
B's RE	1,790,200
C's RE	754,000
CJE1: Elimination of investment in B Co and C Co	(970,000)

CJE2: Loss of control of D Co	200,000	
CJE3: Impairment of intangible asset	(100,000)	
CJE4: Tax effects of CJE3	20,000	
CJE5: Allocate share of post-acq RE of B Co to NCI of B Co	(15,020)	
CJE6: Eliminate dividends declared by B Co	13,000	
CJE7: Allocate share of current income of B Co to NCI of B Co	(98,400)	
CJE8: Adjustment of construction profit (transfer from P to B)	(40,000)	
CJE9: Tax effects of CJE8	8,000	
CJE10: Adjustment of excess depreciation on fixed assets	2,000	
CJE11: Tax effects of CJE10	(400)	
CJE12: Adjustment of cost of sales of undervalued inventory	(45,360)	
CJE13: Tax effects of CJE12	9,072	
CJE14: Cost of sales of undervalued inventory	(8,000)	
CJE15: Tax effects of CJE14	1,600	
CJE16: Allocation of post-acquisition RE to total NCI of C Co	(48,100)	
CJE17: Allocation of current profit after tax to total NCI of C Co	(139,712)	
CJE18: Elimination of dividends declared by C Co	24,000	
EA1: Recognize share of post-acq RE of D Co	164,000	
EA2: Reclassify dividend income as a reduction of investment	(20,000)	
EA3: Recognize share of current profit after tax of D	198,400	
Consolidated RE at 31 Dec 20x6	**7,295,280**	

Analytical check

P's RE	5,596,000	
P's share of B Co's post-acquisition RE	1,026,180	90%*(1,790,200 − 650,000)
P's share of C Co's post-acquisition RE	273,420	63%*(754,000 − 320,000)
P's share of D Co's post-acquisition RE	342,400	40%*(1,246,000 − 390,000)
P's share of impairment loss of intangible asset of B Co	(72,000)	90%*80%*100,000
P's share of cost of sales of undervalued inventory of C Co	(40,320)	63%*80%*80,000
P's share of unrealized construction profit (P to B Co)	(30,400)	80%*(190,000 − 160,000 +60,000 − 50,000)*9.5/10
Remeasurement gain	200,000	
Consolidated RE at 31 Dec 20x6	**7,295,280**	

Solution to Question 2

Income Statement for year ended 31 December 20x3						
	P Co	X Co	Z Co	Y Co	Consolidated	
Profit before tax	6,000,000	2,500,000	1,000,000	500,000	9,023,400	Note 1
Tax	(1,200,000)	(500,000)	(180,000)	(100,000)	(1,804,800)	Note 2
Profit after tax	4,800,000	2,000,000	820,000	400,000	7,218,600	
Income to NCI					(831,436)	Note 3
Dividends declared	(320,000)	(240,000)	(60,000)	(65,000)	(320,000)	
Profit retained	4,480,000	1,760,000	760,000	335,000	6,067,164	
Retained earnings, 1 Jan 20x3	4,500,000	1,250,000	468,000	800,000	4,989,022	Note 4
Retained earnings, 31 Dec 20x3	8,980,000	3,010,000	1,228,000	1,135,000	11,056,186	AC

Statement of Financial Position as at 31 December 20x3						
	P Co	X Co	Z Co	Y Co	Consolidated	
Goodwill					2,868,286	CJE1
Fixed assets, net book value	3,500,000	1,934,790	1,450,000	620,000	6,054,790	
Investment in X Co	3,200,000					
Investment in Z Co	980,000				1,192,400	AC
Investment in Y Co		790,000				
Inventory	450,000	620,000	300,000	900,000	1,967,000	Note 5
Intercompany receivable		100,000				
Other net assets	2,790,000	1,290,000	1,620,000	800,000	4,880,600	Note 6
Cash	360,000	200,000	145,000	90,730	650,730	
	11,280,000	4,934,790	3,515,000	2,410,730	17,613,806	
Accounts payable	740,000	724,790	1,487,000	825,730	2,290,520	
Intercompany payable	100,000					
Share capital	1,460,000	1,200,000	800,000	350,000	1,460,000	
Retained earnings	8,980,000	3,010,000	1,228,000	1,135,000	11,056,186	
Revaluation reserves				100,000	(8,400)	
Capital reserve					37,106	
Non-controlling interests					2,778,394	AC
	11,280,000	4,934,790	3,515,000	2,410,730	17,613,806	

Note 1:	Combined P and subsidiaries	9,000,000	
	Add realized profit from transfer	24,000	
	Less dividend income from X Co	(168,000)	70%*240,000
	from Y Co	(39,000)	60%*65,000
	from Z Co	(18,000)	30%*60,000
	Add share of profit of associate	224,400	
	Consolidated profit before tax	9,023,400	

Note 2:	Combined P and subsidiaries	(1,800,000)
	Add tax on realized profit from transfer	(4,800)
		(1,804,800)

Note 3:	Income to NCI of X	588,300
	Income to NCI of Y	243,136
		831,436

Note 4: Opening RE need not be reconstructed. It can be derived as a balancing figure if the consolidated closing RE is available.
For completeness, the analytical check for opening RE is shown here.
However, for explanations of the plug below, refer to the analytical check in the consolidated closing RE.

P's RE at 1 Jan 20x3	4,500,000	
P's share of X's post-acquisition RE	385,000	70%*(1,250,000 – 700,000)
P's share of Y's post-acquisition RE	88,200	70%*60%*(800,000 – 590,000)
P's share of Z's post-acquisition RE	44,400	30%*(468,000 – 320,000)
P"s share of past expensing of claims	56,000	70%*80%*100,000
P's share of past amortization of intangible assets	(38,400)	30%*80%*400,000*2/5
P's share of unrealized profit in inventory, 1 Jan	(9,072)	70%*60%*80%*27,000
Reversal of profit on sale in P's RE	(185,714)	} (37,106)
Share of RE transferred to NCI (included in capital reserve)	148,608	
	4,989,022	

Note 5: Reduced by unrealized profit in ending inventory 3,000

Note 6: Increased by deferred tax asset on unrealized profit 600

CJE1: Elimination of investment in X Co and Y Co

Dr Share capital (X Co)	1,200,000		
Dr Share capital (Y Co)	350,000		
Dr Retained earnings (X Co)	700,000		
Dr Retained earnings (Y Co)	590,000		
Dr Revaluation reserve (Y Co)	120,000		
Dr Deferred tax asset	20,000		
Dr Goodwill	2,868,286		
Cr Provision for claim		100,000	
Cr Investment in X Co		4,114,286	(3,200,000/70%*90%)
Cr Investment in Y Co		790,000	
Cr Non-controlling interests in X Co		400,000	
Cr Non-controlling interests in Y Co		444,000	
	5,848,286	5,848,286	

Goodwill in sub-group

Fair value of INA of sub-group at 1 Jan 20x1		
Share capital (X Co)	1,200,000	
Retained earnings (X Co)	700,000	
Book value of X Co		1,900,000
Less X Co's investment in Y Co		(790,000)
Undervalued provision for claims		(100,000)
Deferred tax asset		20,000
Fair value of INA of X Co		1,030,000
Share capital (Y Co)	350,000	
Retained earnings (Y Co)	590,000	
Revaluation reserve (Y Co)	120,000	
Fair value of INA of Y Co		1,060,000
X Co's consolidated equity or net assets		2,090,000
Fair value of consideration transferred		4,114,286
Fair value of non-controlling interests (X Co)		400,000
Fair value of non-controlling interests (Y Co)		444,000
Less fair value of INA of sub-group (see workings above)		(2,090,000)
Goodwill		2,868,286

	1 Jan 20x1	Divested	Remaining
P Co's share of goodwill	90%	20%	70%
Fair value of consideration transferred	4,114,286	914,286	3,200,000
Less share of fair value of INA of sub-group			
Share of X Co's FV of INA	(927,000)	(206,000)	
Share of Y Co's FV of INA	(572,400)	(127,200)	
Goodwill	2,614,886	581,086	

X Co's NCI as at 1 January 20x1 (before divestment)	Total	10%
X Co's shareholders' equity as at 1 January 20x1	1,900,000	
Less investment in X Co	(790,000)	
Share of undervalued provision for claim, after-tax	(80,000)	
X Co's share of Y Co's shareholders'equity as at 1 January 20x1	636,000	
X Co's consolidated equity as at 1 January 20x1	1,666,000	166,600
X Co's NCI's goodwill (residual)		233,400
X Co's NCI		400,000

		Total	40%
Y Co's shareholder's equity as at 1 January 20x1		1,060,000	424,000
Share capital	350,000		
Retained earnings	590,000		
Revaluation reserves	120,000		
	1,060,000		

Y Co's undervaluation of identifiable net assets	0
Goodwill (residual)	20,000
NCI of Y Co	444,000
Total Goodwill	2,868,286

CJE2: Effects of the decrease in investment in X Co and Y Co

Dr Investment	914,286	(a)	
Dr ORE	185,714	(b)	
Cr Capital reserve (Equity)		37,106	(c)
Cr Non-controlling interests		1,062,894	(d)
	1,100,000	1,100,000	

Work out P's share of equity that is transferred to NCI through divestment of 20%

P's share of equity of the sub-group as at 31 Dec 20x2

P's share of post-acquisition RE of X Co	495,000	90%*(1,250,000 − 700,000)	
P's share of post-acquisition RE of Y Co	113,400	90%*60%*(800,000 − 590,000)	
P's share of past expensing of claims of X Co	72,000	90%*80%*100,000	
P's share of unrealized profit of Y Co	(11,664)	90%*60%*80%*90%*30,000	
P's share of sub-group's post-acquisition equity	668,736		
20% of initial investment in X Co	914,286	20/70*3,200,000	(a)
20% of P's share of post-acq change in equity	148,608	20/90*668,736	
20% of equity in X Co transferred to NCI by P Co	1,062,894	(d)	

Workings:

	Parent's PL	**Group equity**
Sales proceeds	1,100,000	1,100,000
Investment in S Co	(914,286)	(1,062,894)
Profit	185,714	37,106
	(b)	(c)

This check of NCI at 31 Dec 20x2 is optional - it is only done to show that the re-allocation results in a correct NCI balance

Analytical check of NCI on 31 Dec 20x2 (after re-allocation of 20% to NCI)

CJE1: Elimination of investment in X Co and Y Co	844,000
CJE2: Effects of the decrease in investment in X Co and Y Co	1,062,894
CJE3: Settlement of undervalued provision for claims	10,000
CJE4: Tax effects of CJE3	(2,000)
CJE5: Allocate share of post-acq RE of X Co to NCI of X Co	55,000
CJE8: Adjustment for upstream sale of inventory from Y Co to P Co	(12,420)
CJE9: Tax effects on CJE8	2,484
CJE10: Allocation of post-acquisition RE to total NCI of Y Co	96,600
Per Listings approach	**2,056,558**

Analytical approach

Book value of net assets of X Co on 31 Dec 20x2	2,450,000	1,200,000 + 1,250,000
Less investment in Y Co	(790,000)	
	1,660,000	
NCI's share of X Co (30%)	498,000	30%*1,660,000
Book value of net assets of Y Co on 31 Dec 20x2	1,270,000	350,000 + 800,000 + 120,000
Less unrealized profit on 31 Dec 20x2	(21,600)	30,000*80%*90%
	1,248,400	
NCI's share of Y Co (40%+(30%*60%))	724,072	58%*1,248,400
NCI's goodwill at acquisition	253,400	233,400 + 20,000
P Co's goodwill transferred to NCI of X Co	581,086	2,614,886*20/90
	834,486	
NCI balance as at 31 Dec 20x2	**2,056,558**	498,000 + 724,072 + 834,486

CJE3: Settlement of undervalued provision for claims

Dr Provision for claims	100,000	
Cr Opening RE		90,000
Cr Non-controlling interests		10,000

CJE4: Tax effects of CJE3

Dr Opening RE	18,000	
Dr Non-controlling interests	2,000	
Cr Deferred tax asset		20,000

CJE5: Allocate share of post-acq RE of X Co to NCI of X Co

Dr Opening RE	55,000	

Cr NCI (BS)			55,000
RE at 1 Jan 20x3			1,250,000
RE at date of acquisition			700,000
Change in RE			550,000
NCI's share (before divestment by P)			55,000

CJE6: Eliminate dividends declared by X Co

Dr Dividend income	168,000		
Dr Non-controlling interests	72,000	30%*240,000	
Cr Dividend declared			240,000

CJE7: Allocate share of current income of X Co to NCI of X Co

Dr Income to NCI	588,300	30%*1,961,000	
Cr NCI (BS)			588,300
NPAT of X Co			2,000,000
Less dividend received from Y Co			(39,000)
Adjusted NPAT			1,961,000

CJE8: Adjustment for upstream sale of inventory from Y Co to P Co

Dr Opening RE	14,580	90%*30,000*90%*60%		
Dr Non-controlling interests	12,420	90%*30,000*46%		
Cr Cost of sales (P's PL)			24,000	80%*30,000
Cr Inventory			3,000	10%*30,000

Direct NCI	40%	10,800
Indirect NCI (before divestment by P)	6%	1,620
Total NCI	46%	12,420

CJE9: Tax effects on CJE8

Dr Tax expense	4,800	
Dr Deferred tax asset	600	
Cr Opening RE		2,916
Cr Non-controlling interests		2,484

Direct NCI	40%	2,160
Indirect NCI (before divestment by P)	6%	324
Total NCI	46%	2,484

CJE10: Allocation of post-acquisition RE to total NCI of Y Co				
Dr Opening RE	96,600			
Cr Non-controlling interests		96,600		
Retained earnings at 1 Jan 20x3				800,000
Retained earnings at 1 Jan 20x1				590,000
Change in retained earnings				210,000
Direct NCI			40%	84,000
Indirect NCI (before divestment by P)			6%	12,600
Total NCI			46%	96,600

CJE11: Allocation of current profit after tax to total NCI of Y Co				
Dr Income to NCI	243,136			
Cr Non-controlling Interests		243,136		
Net profit after tax of Y Co				400,000
Add realized profit from upstream sale of inventory, after tax				19,200
Adjusted NPAT				419,200
Direct NCI			40%	167,680
Indirect NCI (after divestment by P)			18%	75,456
Total NCI			58%	243,136

CJE12: Elimination of dividends declared by Y Co

Dr Dividend income	39,000		60%*65,000
Dr Non-controlling interests	26,000		40%*65,000
Cr Dividend declared		65,000	

CJE13: Allocation of post-acq revaluation reserves to total NCI of Y Co				
Dr NCI	11,600			
Cr Share of revaluation reserves		11,600		
Revaluation reserves at 31 Dec 20x3				100,000
Revaluation reserves at 1 Jan 20x3				120,000
Change in revaluation reserves				20,000
Direct NCI			40%	8,000
Indirect NCI (after divestment by P)			18%	3,600
Total NCI			58%	11,600

CJE14: Eliminate intercompany payable and receivable

Dr Intercompany payable	100,000	
Cr Intercompany receivable		100,000

Analytical check of Non-controlling interests

Total Non-controlling interests as at 31 December 20x3

	Total NCI	NCI of X Co and indirect NCI of Y Co	Direct NCI of Y Co
CJE1: Elimination of investment in X Co and Y Co	844,000	400,000	444,000

CJE2: Effects of the decrease in investment in X Co and Y Co	1,062,894	1,062,894	
CJE3: Settlement of undervalued provision for claims	10,000	10,000	
CJE4: Tax effects of CJE3	(2,000)	(2,000)	
CJE5: Allocate share of post-acq RE of X Co to NCI of X Co	55,000	55,000	
CJE6: Eliminate dividends declared by X Co	(72,000)	(72,000)	
CJE7: Allocate share of current income of X Co to NCI of X Co	588,300	588,300	
CJE8: Adjustment for upstream sale of inventory from Y Co to P Co	(12,420)	(1,620)	(10,800)
CJE9: Tax effects on CJE8	2,484	324	2,160
CJE10: Allocation of post-acquisition RE to total NCI of Y Co	96,600	12,600	84,000
CJE11: Allocation of current profit after tax to total NCI of Y Co	243,136	75,456	167,680
CJE12: Elimination of dividends declared by Y Co	(26,000)		(26,000)
CJE13: Allocation of post-acq revaluation reserves to total NCI of Y Co	(11,600)	(3,600)	(8,000)
	2,778,394	2,125,354	653,040

Analytical check on non-controlling interests of X Co

X Co's shareholders' equity as at 31 December 20x3	4,210,000	1,200,000 + 3,010,000
Less investment in Y Co	(790,000)	
	3,420,000	
NCI's share of book value of equity as at 31 Dec 20x3	1,026,000	30%*3,420,000
NCI of X Co's goodwill as at 31 Dec 20x3	814,486	233,400 + 581,086
NCI of X Co	1,840,486	

Analytical check of NCI of Y Co

			Indirect NCI	Direct NCI
Y Co's shareholders' equity as at 31 December 20x3	1,585,000	350,000+1,135,000+100,000		
Less unrealized profit on upstream sale of inventory	(2,400)			
Adjusted shareholders' equity	1,582,600			
Y Co's total NCI share of equity as at 31 December 20x3	917,908	58%*1,582,600	284,868	633,040
Goodwill attributable to Y Co's NCI	20,000			20,000
Total NCI of Y Co as at 31 December 20x3	937,908		284,868	653,040
Total NCI	**2,778,394**		2,125,354	653,040

EA1: Recognize share of post-acquisition RE of Z

Dr Investment in Z	44,400		
Cr Opening RE		44,400	
RE of Z as at 1 Jan 20x3			468,000
RE of Z as at date of acquisition			320,000

Change in RE		148,000
Share of Z's change in RE		44,400

EA2: Reclassify dividend income as a reduction of investment

Dr Dividend income	18,000	
Cr Investment in Z		18,000

EA3: Amortization of undervalued intangible asset

Dr Opening RE	38,400	400,000/5*2*80%*30%
Cr Investment in Z	38,400	

EA4: Recognize share of current profit after tax of Z

Dr Investment in Z	224,400	
Cr Share of profit of Z		224,400

Workings:

NPBT	1,000,000	
Less amortization of FV-BV of intangible asset	(80,000)	400,000/5
Less unrealized profit on sale of fixed asset	(60,000)	Note 1
Add excess depreciation	10,000	60,000/3*1/2
Add back excess impairment loss	40,000	Note 2
Adjusted NPBT of Z	910,000	
Share of adjusted NPBT of Z	273,000	
Tax expense of Z	180,000	
Less tax on amortization of FV-BV of intangible	(16,000)	
Less on unrealized profit on sale of fixed asset	(12,000)	
Add back tax on excess depreciation and excess impairment loss	10,000	
Adjusted tax expense of Z	162,000	
Share of adjusted tax expense of Z	48,600	

Note 1: Transfer of fixed assets (from Z to P)

Profit on sale of fixed assets	60,000
Excess depreciation for half-year 20x3	10,000
Remaining unrealized profit, 31 Dec 20x3	50,000
Recoverable amount	60,000

Note 2: Excess impairment loss

	Legal entity	**Group**	**Difference**
Transfer price	120,000		

Original cost			
NBV, 31 Dec 20x3	100,000	50,000	
Recoverable amount	60,000	60,000	
Impairment loss	40,000	0	40,000
Revised balance	60,000	50,000	(10,000)

Analytical check of Investment in Z

Book value of shareholders' equity of Z		2,028,000	
Add unamortized intangible asset		128,000	400,000*2/5*80%
Less unrealized profit of fixed asset as at end of 20x3		(8,000)	10,000*80%
		2,148,000	
P's share of Z's identifiable net assets		644,400	
Implicit goodwill in investment in Z:			
Investment in Z		980,000	
BV of net assets of Z at acq	1,120,000		
Unrecognized intangible asset, after-tax	320,000		
FV of net assets of Z at acq	1,440,000		
Less Share of FV of net assets of Z at acq		432,000	
Goodwill in Z implicit in the investment in Z		548,000	
		1,192,400	
Investment in Z, at cost		980,000	
EA1: Recognize share of post-acq RE of Z		44,400	
EA2: Reclassify dividend income as a reduction of investment		(18,000)	
EA3: Amortization of undervalued intangible asset		(38,400)	
EA4: Recognize share of current profit after tax of Z		224,400	
Investment in Z as at 31 Dec 20x3		**1,192,400**	

Analytical check of closing retained earnings

P's RE	8,980,000	
X's RE	3,010,000	
Y's RE	1,135,000	
CJE1: Elimination of investment in X Co and Y Co	(1,290,000)	700,000 + 590,000
CJE2: Effects of the decrease in investment in X Co and Y Co	(185,714)	
CJE3: Settlement of undervalued provision for claims	90,000	
CJE4: Tax effects of CJE3	(18,000)	
CJE5: Allocate share of post-acq RE of X Co to NCI of X Co	(55,000)	
CJE6: Eliminate dividends declared by X Co	72,000	
CJE7: Allocate share of current income of X Co to NCI of X Co	(588,300)	
CJE8: Adjustment for upstream sale of inventory from Y Co to P Co	9,420	24,000 − 14,580

CJE9: Tax effects on CJE8	(1,884)	2,916 − 4,800
CJE10: Allocation of post-acquisition RE to total NCI of Y Co	(96,600)	
CJE11: Allocation of current profit after tax to total NCI of Y Co	(243,136)	
CJE12: Elimination of dividends declared by Y Co	26,000	
EA1: Recognize share of post-acq RE of Z	44,400	
EA2: Reclassify dividend income as a reduction of investment	(18,000)	
EA3: Amortization of undervalued intangible	(38,400)	
EA4: Recognize share of current profit after tax of Z	224,400	
Consolidated RE at 31 Dec 20x3	**11,056,186**	

Analytical check (Method 1 - show latest ownership interests and a plug that is the capital reserve adjustment)

P's RE	8,980,000	
P's share of post-acquisition RE of X Co	1,617,000	70%*(3,010,000 − 700,000)
P's share of post-acquisition RE of Y Co	228,900	70%*60%*(1,135,000 − 590,000)
P's share of post-acquisition RE of Z Co	272,400	30%*(1,228,000 − 320,000)
P's share of past expensing of claims of X Co	56,000	70%*80%*100,000
P's share of amortization of intangible asset of Z Co	(57,600)	30%*400,000*80%*3/5
P's share of unrealized profit of Y Co (inventory)	(1,008)	42%*10%*80%*30,000
P's share of unrealized profit of fixed asset transfer to Z Co	(2,400)	30%*80%*10,000
Plug—balancing figure adjusted to capital reserve	(37,106)	Note 1
Consolidated RE at 31 Dec 20x3	**11,056,186**	

Note 1: RE captures P's share at the historical ownership interests (i.e., 90% from acquisition of X to 31 Dec 20x2, 70% from 1 Jan 20x3 to 31 Dec 20x3).

To enable a more expedient check, we use the latest ownership interests in the analytical check.

The analytical check using the latest ownership interests would not agree with the compilation of CJE.

The difference is the profit on sale taken to equity (capital reserve) which is shown in the analytical check as a plug.

The plug represents the following:

Reversal of profit on divestment of 20% in P's legal entity income statement	(185,714)	
20% of P's share of post-acquisition change in equity up to divestment date	148,608	Note 2
Amount taken to capital reserve	(37,106)	

Note 2: Why is this positive? Arithmetically, the RE analytical check for simplicity, uses the latest ownership interests (70%) when in reality, the RE is made of a layering of historical profits (90% up to 31 Dec 20x2 and 70% thereafter). Refer to workings under CJE2.

Had the plug been taken to RE (and not Capital Reserve, a separate equity account), the RE reconciliation as shown with latest ownership interests would balance nicely with the listings approach. However, we are of the view that retained earnings is a historical compilation of profits and should not be adjusted retrospectively. The same approach applies to other comprehensive income.

But since the plug is taken to Capital Reserve, an imbalance arises – we use the plug here to show the difference between the listings approach (based on historical percentages) and the analytical approach using the latest ownership interests. Method 1 is a short cut method. But if that approach is confusing, use Method 2 which is a more detailed compilation to show the historical ownership interests at different points in time.

Analytical check (Method 2 - show the layering of RE using the ownership interests as applicable at that point in time)

P's RE	8,980,000	
P's share of post-acquisition RE of X Co (before divestment of 20%)	495,000	90%*(1,250,000 − 700,000)
P's share of post-acquisition RE of X Co (after divestment of 20%)	1,232,000	70%*(3,010,000 − 1,250,000)
P's share of post-acquisition RE of Y Co (before divestment of 20%)	113,400	90%*60%*(800,000 − 590,000)
P's share of post-acquisition RE of X Co (after divestment of 20%)	140,700	70%*60%*(1,135,000 − 800,000)
P's share of post-acquisition RE of Z Co	272,400	30%*(1,228,000 − 320,000)
P's share of past expensing of claims of X Co (before divestment)	72,000	90%*80%*100,000
P's share of amortization of intangible asset of Z Co	(57,600)	30%*400,000*80%*3/5
P's share of after tax unrealized profit from sale to Y Co (before divestment)	(11,664)	90%*60%*80%*27,000
P's share of after tax realized profit from sale to Y Co (after divestment) . .	8,064	70%*60%*80%*24,000
P's share of unrealized profit of fixed asset transfer to Z Co	(2,400)	30%*80%*10,000
Reversal of profit on divestment recognized in P's separate PL	(185,714)	
	11,056,186	

Solution to Question 3

Income Statement for year ended 31 December 20x3						
	P Co	X Co	Z Co	Y Co	Consolidated	
Profit before tax	5,790,000	2,234,900	1,000,000	1,200,000	9,195,500	Note 1
Tax	(1,158,000)	(446,980)	(200,000)	(240,000)	(1,844,180)	Note 2
Profit after tax	4,632,000	1,787,920	800,000	960,000	7,351,320	
Income to NCI					(611,720)	Note 3
Dividends declared	(230,000)	(180,000)	(46,000)	(120,000)	(230,000)	
Profit retained	4,402,000	1,607,920	754,000	840,000	6,509,600	
Retained earnings, 1 Jan 20x3	4,321,000	1,387,000	327,000	960,000	5,087,912	Note 4
Retained earnings, 31 Dec 20x3	8,723,000	2,994,920	1,081,000	1,800,000	11,597,512	AC

Statement of Financial Position as at 31 December 20x3						
	P Co	X Co	Z Co	Y Co	Consolidated	
Goodwill					2,719,429	CJE1
Fixed assets, net book value	4,890,000	2,371,000	1,760,000	1,325,000	8,586,000	
Investment in X Co	4,500,000					
Investment in Z Co	1,200,000				1,429,900	AC
Investment in Y Co		850,000				
Inventory	589,000	563,000	256,000	328,000	1,478,000	Note 5
Intercompany receivable	200,000					
Other net assets	3,200,000	980,000	1,769,000	732,000	4,944,400	Note 6
Cash	120,000	216,700	27,000	123,760	460,460	
	14,699,000	4,980,700	3,812,000	2,508,760	19,618,189	
Accounts payable	3,176,000	285,780	2,011,000	208,760	3,670,540	
Intercompany payable		200,000				
Share capital	2,800,000	1,500,000	720,000	300,000	2,800,000	
Retained earnings	8,723,000	2,994,920	1,081,000	1,800,000	11,597,512	AC
Revaluation reserves				200,000	43,200	Note 7
Capital reserve					(212,682)	CJE1
Non-controlling interests					1,719,619	AC
	14,699,000	4,980,700	3,812,000	2,508,760	19,618,189	

Note 1:	Combined P and subsidiaries	9,224,900	
	Less amortization of intangible assets of Y Co	(20,000)	
	Add realized profit from transfer	16,000	
	Less dividend income from X Co	(162,000)	90%*180,000
	from Y Co	(72,000)	60%*120,000
	from Z Co	(13,800)	30%*46,000
	Add share of profit of associate	222,400	
	Consolidated profit before tax	9,195,500	

Note 2:	Combined P and subsidiaries	(1,844,980)
	Less tax on amortization of intangible assets	4,000
	Add tax on realized profit from transfer	(3,200)
		(1,844,180)

Note 3:	Income to NCI of X	171,592
	Income to NCI of Y	440,128
		611,720

Note 4: Opening RE need not be reconstructed. It can be derived as a balancing figure if the consolidated closing RE is available.

For completeness, the analytical check on opening RE is shown here.

However, for explanations of the plug below, refer to the analytical check in the consolidated closing RE.

P's RE at 1 Jan 20x3	4,321,000	
P's share of X's post-acquisition RE	708,300	90%*(1,387,000 − 600,000)
P's share of Y's post-acquisition RE	286,200	90%*60%*(960,000 − 430,000)
P's share of Z's post-acquisition RE	26,100	30%*(327,000 − 240,000)
P's share of past cost of sales of undervalued inventory	(10,800)	90%*80%*15,000
P's share of past amortization of Y Co's intangible assets	(17,280)	90%*60%*80%*100,000/5*2
P's share of past amortization of Z Co's intangible assets	(4,800)	30%*80%*50,000*2/5
P's share of unrealized profit in inventory, 1 Jan	(7,776)	90%*60%*80%*18,000
Difference–NCI's share of RE taken to Capital Reserve	(213,032)	Refer explanatory note in AC on closing RE
	5,087,912	

Note 5:	Reduced by unrealized profit in ending inventory		2,000
Note 6:	Combined P and subsidiaries	4,912,000	
	Remaining balance of intangible asset of Y	40,000	100,000/5*2
	Deferred tax liability on intangible asset	(8,000)	
	Deferred tax asset on unrealized profit in inventory	400	
		4,944,400	
Note 7:	P's share of post-acquisition revaluation reserves of Y		90%*60%*80,000

CJE1: Elimination of investment in X Co and Y Co

Dr Share capital (X Co)	1,500,000	
Dr Share capital (Y Co)	300,000	
Dr Retained earnings (X Co)	600,000	
Dr Retained earnings (Y Co)	430,000	
Dr Revaluation reserve (Y Co)	120,000	
Dr Inventory (X Co)	15,000	
Dr Intangible asset (Y Co)	100,000	
Dr Goodwill	2,719,429	
Cr Deferred tax liability		23,000

Cr Investment in X Co		3,200,000
Cr Investment in Y Co		850,000
Cr Non-controlling interests in X Co		1,311,429
Cr Non-controlling interests in Y Co		400,000
	5,784,429	5,784,429

Goodwill in sub-group (this calculation is optional - suffice to show the goodwill as a residual in CJE1)

Fair value of INA of sub-group at 1 Jan 20x1		
Share capital (X Co)	1,500,000	
Retained earnings (X Co)	600,000	
Book value of X Co		2,100,000
Less X Co's investment in Y Co		(850,000)
Undervalued inventory		15,000
Deferred tax liability		(3,000)
Fair value of INA of X Co		1,262,000
Share capital (Y Co)	300,000	
Retained earnings (Y Co)	430,000	
Revaluation reserve (Y Co)	120,000	
Intangible asset	100,000	
Deferred tax liability	(20,000)	
Fair value of INA of Y Co		930,000
X Co's consolidated equity or net assets		2,192,000
Fair value of consideration transferred (4,500,000 − 1,300,000)		3,200,000
Fair value of non-controlling interests (X Co)		1,311,429
Fair value of non-controlling interests (Y Co)		400,000
Less fair value of INA of sub-group (see workings above)		(2,192,000)
Goodwill		2,719,429

Goodwill attributable to P Co	**1 Jan 20x1**
P Co's share of goodwill	70%
Fair value of consideration transferred	3,200,000
Less share of fair value of INA of sub-group	
Share of X Co's FV of INA	(883,400)
Share of Y Co's FV of INA	(390,600)
Goodwill attributable to P Co	1,926,000

X Co's NCI as at 1 January 20x1 (before additional investment)	**Total**	**30%**
X Co's shareholders' equity as at 1 January 20x1	2,100,000	
Less investment in Y Co	(850,000)	

Share of undervalued inventory, after-tax	12,000		
X Co's share of Y Co's shareholders' equity as at 1 January 20x1	558,000		60%*930,000 below
X Co's consolidated equity as at 1 January 20x1	1,820,000	546,000	30%*1,820,000
X Co's NCI's goodwill		765,429	Residual
X Co's NCI		1,311,429	

Y Co's NCI as at 1 January 20x1 (before additional divestment)		Total	40%	
Y Co's shareholder's equity as at 1 January 20x1		850,000	340,000	
Share capital	300,000			
Retained earnings	430,000			
Revaluation reserves	120,000			
	850,000			
Y Co's unrecognized intangible asset, after tax		80,000	32,000	
Goodwill			28,000	Residual
NCI of Y Co		930,000	400,000	
Total Goodwill attributable to P and NCI (1,926,000+765,429+28,000)			2,719,429	

CJE2: Effects of the increase in investment in X Co by P Co

Dr Non-controlling interests	1,087,318	
Dr Capital reserve (Equity)	212,682	
Cr Investment		1,300,000

Note 1: X's NCI's share of equity of the sub-group as at 31 Dec 20x2

NCI's share of post-acquisition RE of X Co	236,100	30%*(1,387,000 − 600,000)
NCI's share of post-acquisition RE of Y Co	95,400	18%*(960,000 − 430,000)
NCI 's share of past cost of sales of X Co	(3,600)	30%*80%*15,000
NCI 's share of past amortization of intangible asset of Y Co	(5,760)	18%*80%*100,000/5*2
NCI 's share of unrealized profit of Y Co (sale to X)	(2,592)	18%*80%*90%*20,000
NCI 's share of sub-group's post-acquisition equity	319,548	Note 2
20% of initial FV of NCI in X Co	874,286	20/30*1,311,429
20% of NCI's share of post-acq change in equity	213,032	20/30*319,548
20% of equity in X Co transferred by NCI to P Co	1,087,318	

Note 2: In this problem, the change in equity is attributable solely to retained earnings.
There was no post-acquisition change in revaluation reserves.

Workings:

	Group equity
Additional investment in X Co by P Co	1,300,000
Acquisition of equity from NCI by P Co	(1,087,318)

Loss on purchase taken to capital reserve		212,682

This check of NCI at 31 Dec 20x2 is optional–it is only done to show that the re-allocation results in a correct NCI balance

Analytical check of NCI on 31 Dec 20x2 (after re-allocation of 20% to P)

CJE1: Elimination of investment in X Co and Y Co	1,311,429	
CJE2: Effects of the increase in investment in X Co by P Co	(1,087,318)	
CJE3: Past cost of sales of undervalued inventory	(4,500)	
CJE4: Tax effects of CJE3	900	
CJE5: Allocate share of post-acq RE of X Co to NCI of X Co	236,100	
CJE8: Adjustment for upstream sale of inventory from Y Co to X Co	(3,240)	18%*90%*20,000
CJE9: Tax effects on CJE8	648	20%*3,240
CJE10: Amortization of intangible asset	(7,200)	18%*100,000/5*2
CJE11: Tax effects of CJE10	1,440	20%*7,200
CJE12: Allocation of post-acquisition RE to total NCI of Y Co	95,400	18%*(960,000 − 430,000)
	543,659	
Book value of net assets of X Co on 31 Dec 20x2	2,887,000	1,500,000 + 1,387,000
Less investment in Y Co	(850,000)	
	2,037,000	
NCI's share of X Co (after divestment)	203,700	10%*2,037,000
Book value of net assets of Y Co on 31 Dec 20x2	1,380,000	300,000 + 960,000 + 120,000
Add remaining balance of intangible asset, after tax	48,000	100,000/5*3*80%
Less unrealized profit on 31 Dec 20x2	(14,400)	90%*80%*20,000
	1,413,600	
NCI's share of Y Co (after divestment)	84,816	6%*1,413,600
NCI's goodwill at acquisition	765,429	
NCI's goodwill transferred to P on divestment	(510,286)	20/30*765,429
	255,143	
NCI balance as at 31 Dec 20x2 (203,700+84,816+255,143)	**543,659**	

CJE3: Past cost of sales of undervalued inventory

Dr Opening RE	10,500	
Dr NCI	4,500	
Cr Inventory		15,000

CJE4: Tax effects of CJE3

Dr Deferred tax liability	3,000	
Cr Opening RE		2,100
Cr NCI		900

CJE5: Allocate share of post-acq RE of X Co to NCI of X Co

Dr Opening RE	236,100		
Cr NCI (BS)		236,100	
RE at 1 Jan 20x3		1,387,000	
RE at date of acquisition		600,000	
Change in RE		787,000	
NCI's share (before divestment to P)		236,100	30%*787,000

CJE6: Eliminate dividends declared by X Co

Dr Dividend income		162,000	
Dr Non-controlling interests		18,000	10%*180,000
Cr Dividend declared			180,000

CJE7: Allocate share of current income of X Co to NCI of X Co

Dr Income to NCI	171,592		10%*1,717,920
Cr NCI (BS)			171,592
NPAT of X Co			1,787,920
Less dividend received from Y Co			(72,000)
Adjusted NPAT (after divestment to P)			1,715,920

CJE8: Adjustment for upstream sale of inventory from Y Co to X Co

Dr Opening RE	7,560	70%*60%*90%*20,000			
Dr Non-controlling interests	10,440	58%*90%*20,000			
Cr Cost of sales			16,000	80%*20,000	
Cr Inventory			2,000	10%*20,000	
Direct NCI				40%	7,200
Indirect NCI (before divestment to P)				18%	3,240
Total NCI				58%	10,440

CJE9: Tax effects on CJE8

Dr Tax expense	3,200				
Dr Deferred tax asset	400				
Cr Opening RE			1,512		
Cr Non-controlling interests			2,088		
Direct NCI				40%	1,440
Indirect NCI (before divestment to P)				18%	648
Total NCI				58%	2,088

CJE10: Amortization of intangible asset

Dr ORE	16,800	70%*60%*100,000/5*2	
Dr NCI	23,200	58%*100,000/5*2	
Dr Amortization	20,000	100,000/5	
Cr Accumulated amortization			60,000

CJE11: Tax effects of CJE10

Dr Deferred tax liability	12,000	
Cr ORE		3,360
Cr NCI		4,640
Cr Tax expense		4,000

CJE12: Allocation of post-acquisition RE to total NCI of Y Co

Dr Opening RE	307,400			
Cr Non-controlling interests		307,400		
Retained earnings at 1 Jan 20x3				960,000
Retained earnings at 1 Jan 20x1				430,000
Change in retained earnings				530,000
Direct NCI			40%	212,000
Indirect NCI (before divestment to P)			18%	95,400
Total NCI			58%	307,400

CJE13: Allocation of current profit after tax to total NCI of Y Co

Dr Income to NCI	440,128			
Cr Non-controlling Interests		440,128		
Net profit after tax of Y Co				960,000
Less amortization of intangible asset, after tax				(16,000)
Add realized profit from upstream sale of inventory, after tax				12,800
Adjusted NPAT				956,800
Direct NCI			40%	382,720
Indirect NCI (after divestment to P)			6%	57,408
Total NCI			46%	440,128

CJE14: Elimination of dividends declared by Y Co

Dr Dividend income	72,000	
Dr Non-controlling interests	48,000	40%*120,000
Cr Dividend declared		120,000

CJE15: Allocation of post-acquisition revaluation reserves to total NCI of Y Co

Dr Share of revaluation reserves	36,800			
Cr NCI		36,800		
Revaluation reserves at 31 Dec 20x3				200,000
Revaluation reserves at 1 Jan 20x3				120,000
Change in revaluation reserves				80,000
Direct NCI			40%	32,000
Indirect NCI (after divestment to P)			6%	4,800
Total NCI			46%	36,800

CJE16: Eliminate intercompany payable and receivable

Dr Intercompany payable	200,000	
Cr Intercompany receivable		200,000

Analytical check of Non-controlling interests

Total Non-controlling interests as at 31 December 20x3

	Total NCI	NCI of X Co and indirect NCI of Y Co	Direct NCI of Y Co
CJE1: Elimination of investment in X Co and Y Co	1,711,429	1,311,429	400,000
CJE2: Effects of the increase in investment in X Co by P Co	(1,087,318)	(1,087,318)	
CJE3: Past cost of sales of undervalued inventory	(4,500)	(4,500)	
CJE4: Tax effects of CJE3	900	900	
CJE5: Allocate share of post-acq RE of X Co to NCI of X Co	236,100	236,100	
CJE6: Eliminate dividends declared by X Co	(18,000)	(18,000)	
CJE7: Allocate share of current income of X Co to NCI of X Co	171,592	171,592	
CJE8: Adjustment for upstream sale of inventory from Y Co to X Co	(10,440)	(3,240)	(7,200)
CJE9: Tax effects on CJE8	2,088	648	1,440
CJE10: Amortization of intangible asset	(23,200)	(7,200)	(16,000)
CJE11: Tax effects of CJE10	4,640	1,440	3,200
CJE12: Allocation of post-acquisition RE to total NCI of Y Co	307,400	95,400	212,000
CJE13: Allocation of current profit after tax to total NCI of Y Co	440,128	57,408	382,720
CJE14: Elimination of dividends declared by Y Co	(48,000)		(48,000)
CJE15: Allocation of post-acq revaluation reserves to total NCI of Y Co	36,800	4,800	32,000
	1,719,619	759,459	960,160

Analytical check on non-controlling interests of X Co

X Co's shareholders' equity as at 31 December 20x3	4,494,920	1,500,000 + 2,994,920
Less investment in Y Co	(850,000)	
	3,644,920	
NCI's share of book value of equity as at 31 Dec 20x3	364,492	10%*3,644,920
X Co's NCI's goodwill as at 31 Dec 20x3	255,143	765,429*10/30
	619,635	

Analytical Check of NCI of Y Co

			Indirect NCI of Y	Direct NCI of Y
Y Co's shareholders' equity as at 31 December 20x3	2,300,000	300,000+1,800,000+200,000		
Add remaining balance of intangible asset, after tax	32,000	100,000*2/5*80%		
Less unrealized profit on upstream sale of inventory	(1,600)	10%*80%*20,000		
Adjusted shareholders' equity	2,330,400			
Y Co's total NCI share of equity as at 31 December 20x3	1,071,984	46%*2,330,400	139,824	932,160
Goodwill attributable to Y Co's NCI	28,000			28,000
NCI of Y Co as at 31 December 20x3	1,099,984		139,824	960,160
Total NCI	**1,719,619**		759,459	960,160

EA1: Recognize share of post-acq RE of Z

Dr Investment in Z	26,100		
Cr Opening RE		26,100	
RE of Z as at 1 Jan 20x3			327,000
RE of Z as at date of acquisition			240,000
Change in RE			87,000
Share of Z's change in RE			26,100

EA2: Reclassify dividend income as a reduction of investment

Dr Dividend income	13,800	
Cr Investment in Z		13,800

EA3: Amortization of undervalued intangible

Dr Opening RE	4,800	50,000/5*2*80%*30%	
Cr Investment in Z			4,800

EA4: Recognize share of current profit after tax of Z

Dr Investment in Z	222,400		
Cr Share of profit of Z			222,400

Workings:

NPBT	1,000,000	
Less amortization of FV-BV of intangible	(10,000)	50,000/5
Less unrealized profit on sale of fixed asset	(76,000)	Note 1
Add excess depreciation	12,667	(130,000-54,000)/3*1/2
Adjusted NPBT of Z	926,667	

Share of adjusted NPBT of Z	278,000
Tax expense of Z	200,000
Less tax on amortization of FV-BV of intangible	(2,000)
Less on unrealized profit on sale of fixed asset	(15,200)
Add tax on excess depreciation	2,533
Adjusted tax expense of Z	185,333
Share of adjusted tax expense of Z	55,600

Note 1: Transfer of fixed assets (from Z to P)

Profit on sale of fixed assets	76,000
Excess depreciation for half-year 20x3	12,667
Remaining unrealized profit, 31 Dec 20x3 (Note 2)	63,333

Note 2: Difference in carrying amounts

	Legal entity	Group	Difference
Transfer price	130,000		
Original cost		180,000	
NBV, 31 Dec 20x3	108,333	45,000	(63,333)

Analytical check of Investment in Z

Book value of shareholders' equity of Z		1,801,000	
Add unamortized intangible		16,000	50,000*2/5*80%
Less unrealized profit of fixed asset as at end of 20x3		(50,667)	63,333*80%
		1,766,333	
P's share of Z's identifiable net assets		529,900	
Implicit goodwill in investment in Z:			
Investment in Z		1,200,000	
BV of net assets of Z at acq	960,000		
Unrecognized intangible, after-tax	40,000		
FV of net assets of Z at acq	1,000,000		
Less Share of FV of net assets of Z at acq		300,000	
Goodwill in Z implicit in the investment in Z		900,000	
		1,429,900	
Investment in Z, at cost		1,200,000	
EA1: Recognize share of post-acq RE of Z		26,100	
EA2: Reclassify dividend income as a reduction of investment		(13,800)	
EA3: Amortization of undervalued intangible		(4,800)	

EA4: Recognize share of current profit after tax of Z	222,400
Investment in Z as at 31 Dec 20x6	**1,429,900**

Analytical check of closing retained earnings

P's RE	8,723,000	
X's RE	2,994,920	
Y's RE	1,800,000	
CJE1: Elimination of investment in X Co and Y Co	(1,030,000)	600,000 + 430,000
CJE3: Past cost of sales of undervalued inventory	(10,500)	
CJE4: Tax effects of CJE3	2,100	
CJE5: Allocate share of post-acq RE of X Co to NCI of X Co	(236,100)	
CJE6: Eliminate dividends declared by X Co	18,000	
CJE7: Allocate share of current income of X Co to NCI of X Co	(171,592)	
CJE8: Adjustment for upstream sale of inventory from Y Co to X Co	8,440	16,000 − 7,560
CJE9: Tax effects on CJE8	(1,688)	1,512 − 3,200
CJE10: Amortization of intangible asset	(36,800)	16,800 + 20,000
CJE11: Tax effects of CJE10	7,360	3,360 + 4,000
CJE12: Allocation of post-acquisition RE to total NCI of Y Co	(307,400)	
CJE13: Allocation of current profit after tax to total NCI of Y Co	(440,128)	
CJE14: Elimination of dividends declared by Y Co	48,000	
EA1: Recognize share of post-acq RE of Z	26,100	
EA2: Reclassify dividend income as a reduction of investment	(13,800)	
EA3: Amortization of undervalued intangible	(4,800)	
EA4: Recognize share of current profit after tax of Z	222,400	
Consolidated RE at 31 Dec 20x3	**11,597,512**	

Analytical check (Method 1 - show latest ownership interests and a plug that is transfer from NCI's equity that is taken to capital reserve)

P's RE	8,723,000	
P's share of post-acquisition RE of X Co	2,155,428	90%*(2,994,920 − 600,000)
P's share of post-acquisition RE of Y Co	739,800	90%*60%*(1,800,000 − 430,000)
P's share of post-acquisition RE of Z Co	252,300	30%*(1,081,000 − 240,000)
P's share of past cost of sales of X Co	(10,800)	90%*80%*15,000
P's share of amortization of intangible asset of Y Co	(25,920)	90%*60%*80%*100,000/5*3
P's share of amortization of intangible asset of Z Co	(7,200)	30%*50,000*80%*3/5
P's share of unrealized profit of Y Co (inventory)	(864)	90%*60%*80%*2,000
P's share of unrealized profit of fixed asset transfer from Z Co	(15,200)	30%*80%*63,333
Plug - balancing figure adjusted to capital reserve	(213,032)	Note 1

Consolidated RE at 31 Dec 20x3 **11,597,512**

Note 1:

Consolidated retained earnings captures P's share of subsidiaries profits at the historical ownership interests (i.e., 70% from acquisition of X to 31 Dec 20x2, 90% from 1 Jan 20x3 to 31 Dec 20x3).

To enable a more expedient check, we use the latest ownership interests in the analytical check rather than a layering of historical profit figures.

The analytical check using the latest ownership interests would not agree with the listings approach.

The difference is the share of post-acquisition change in RE taken over from NCI (the 20% share from acquisition date to 31 Dec 20x2).

In this example, the difference is:

20% of P's share of post-acq change in equity up to divestment date 213,032 Note 2

As there is no change in post-acq RR in this question, the entire change in post-acquisition equity transferred from NCI is due to post-acq change in RE.

Note 2: Why is this negative? Arithmetically, the RE analytical check, for simplicity, uses the latest ownership interests (90%) when in reality, the RE is made of a layering of historical profits (70% up to 31 Dec 20x2 and 90% thereafter). So the negative figure indicates that the RE should be lower than the short-cut analytical check. Refer to workings under CJE2.

Had the plug been taken to RE (and not Capital Reserve, a separate equity account), the RE reconciliation as shown with the latest ownership interests would balance nicely with the listings approach. But since the plug is taken to Capital Reserve, an imbalance arises - we use the plug here to show the difference between the listings approach (based on historical percentages) and the analytical approach using the latest ownership interests. However, we are of the view that retained earnings is a historical compilation of profits and should not be adjusted retrospectively. The same approach applies to other comprehensive income. Method 1 is a short-cut method. But if that approach is confusing, use Method 2 which is a more detailed compilation to show the historical ownership interests at different points in time.

The plug is not the same amount as the Capital Reserve entry of $212,682 (CJE2). CJE2 is the loss on purchase or the excess payment over the carrying amount of the NCI.

This scenario is different from Question 2 where the plug is taken directly from Capital Reserve. The Capital Reserve in that situation comprises purely the profit on sale at group level (a retained earnings item).

Analytical check (Method 2 - show the layering of RE using the ownership interests as applicable at that point in time)

P's RE	8,723,000	
P's share of post-acquisition RE of X Co (before investment of 20%)	550,900	70%*(1,387,000 – 600,000)
P's share of post-acquisition RE of X Co (after investment of 20%)	1,447,128	90%*(2,994,920 – 1,387,000)
P's share of post-acquisition RE of Y Co (before investment of 20%)	222,600	70%*60%*(960,000 – 430,000)
P's share of post-acquisition RE of Y Co (after investment of 20%)	453,600	90%*60%*(1,800,000 – 960,000)
P's share of post-acquisition RE of Z Co	252,300	30%*(1,081,000 – 240,000)
P's share of past cost of sales of X Co (before investment of 20%)	(8,400)	70%*80%*15,000
P's share of amortization of intangible asset of Y Co (before investment)	(13,440)	70%*60%*80%*100,000/5*2
P's share of amortization of intangible asset of Y Co (after investment)	(8,640)	90%*60%*80%*100,000/5
P's share of amortization of intangible asset of Z Co	(7,200)	30%*50,000*80%*3/5
P's share of after tax unrealized profit from sale of Y Co (before investment)	(6,048)	70%*60%*80%*90%*20,000
P's share of after tax realized profit from sale of Y Co (after investment)	6,912	90%*60%*80%*16,000
P's share of unrealized profit of fixed asset transfer from Z Co	(15,200)	30%*80%*63,333
	11,597,512	

Solution to Question 4

Income Statement for year ended 31 December 20x6	P Co	B Co	D Co	C Co	Consolidated	
Profit before tax	4,300,000	1,400,000	620,000	480,000	6,538,000	Note 1
Tax	(860,000)	(280,000)	(124,000)	(96,000)	(1,348,200)	Note 2
Profit after tax	3,440,000	1,120,000	496,000	384,000	5,189,800	
Income to NCI					(443,312)	Note 3
Dividends declared	(200,000)	(130,000)	(50,000)	(80,000)	(200,000)	
Profit retained	3,240,000	990,000	446,000	304,000	4,546,488	
Retained earnings, 1 Jan 20x6	2,356,000	800,200	800,000	450,000	3,130,792	Note 4
Retained earnings, 31 Dec 20x6	5,596,000	1,790,200	1,246,000	754,000	7,677,280	AC

Statement of Financial Position as at 31 December 20x6	P Co	B Co	D Co	C Co	Consolidated	
Goodwill					1,273,400	CJE1
Intangible assets, net book value					135,000	
Fixed assets, net book value	2,789,000	1,954,000	1,340,000	890,000	6,897,000	Note 5
Investment in B Co	2,200,000					
Investment in D Co	720,000					
Investment in C Co		900,000				
Inventory	790,000	600,000	450,000	247,000	2,087,000	
Intercompany receivable	1,500,000					
Other net assets	1,970,000	1,265,000	803,450	520,000	4,546,650	Note 6
Cash	300,000	256,000	120,000	120,000	796,000	
	10,269,000	4,975,000	2,713,450	1,777,000	15,735,050	
Accounts payable	1,973,000	484,800	667,450	403,000	3,528,250	
Bank loans	1,400,000				1,400,000	
Intercompany payable		1,500,000				
Share capital	1,300,000	1,200,000	800,000	520,000	1,300,000	
Retained earnings	5,596,000	1,790,200	1,246,000	754,000	7,677,280	AC
Revaluation reserves				100,000	3,150	
Non-controlling interests					1,826,370	Note 7
	10,269,000	4,975,000	2,713,450	1,777,000	15,735,050	

Note 1:			
Combined P and subsidiaries	6,800,000	4,300,000+1,400,000+620,000+480,000	
Amortization of intangible asset	(15,000)		
Current cost of sales of undervalued inventory of C	(8,000)	10%*80,000	
Adjustment for unrealized profit (P to B)	(36,000)	40,000-(80,000/10*6/12)	
Less dividend income from B Co	(117,000)	90%*130,000	
from C Co	(56,000)	70%*80,000	
from D Co	(30,000)	60%*50,000	
Consolidated profit before tax	6,538,000		

Note 2:			
Combined P and subsidiaries	(1,360,000)	860,000 + 280,000 + 124,000 + 96,000	
Tax on: Amortization of intangible asset	3,000		
Current cost of sales of undervalued inventory of C	1,600		
Adjustment for unrealized profit (P to B)	7,200		

		(1,348,200)

Note 3:	Income to NCI of B	105,200
	Income to NCI of C	139,712
	Income to NCI of D	198,400
		443,312

Note 4:	P's RE at 1 Jan 20x6	2,356,000	
	P's share of B's post-acquisition RE	135,180	90%*(800,200 − 650,000)
	P's share of C's post-acquisition RE	81,900	63%*(450,000 − 320,000)
	P's share of D's post-acquisition RE	246,000	60%*(800,000 − 390,000)
	P's share of past cost of sales of undervalued inventory of C	(36,288)	63%*80%*90%*80,000
	P's share of unrealized interest income, 1 Jan (P to B)	(32,000)	80%*(120,000-80,000)
	Effects from gain of control of D Co	380,000	
		3,130,792	

Note 5: 2,789,000 + 1,954,000 + 1,340,000 + 890,000−(80,000*9.5/10)

Note 6: 1,970,000 + 1,265,000+803,450 + 520,000 + (20%*80,000*9.5/10)−(20%*150,000*9/10)

Note 7:	NCI of B	365,970	AC
	NCI of C	418,000	AC
	NCI of D	1,042,400	AC
		1,826,370	

CJE1: Elimination of investment in B Co, C Co and D Co

Dr Share capital (B Co)	1,200,000		
Dr Share capital (C Co)	520,000		
Dr Share capital (D Co)	800,000		
Dr Retained earnings (B Co)	650,000		
Dr Retained earnings (C Co)	320,000		
Dr Retained earnings (D Co)	390,000		
Dr Revaluation reserve (C Co)	95,000		
Dr Inventory (C Co)	80,000		
Dr Intangible assets	150,000		
Dr Goodwill	1,273,400		
Cr Deferred tax liability		46,000	
Cr Investment in B Co		2,200,000	
Cr Investment in C Co		900,000	
Cr Investment in D Co		1,100,000	400,000 + 700,000
Cr Non-controlling interests in B Co		226,900	

Cr Non-controlling interests in C Co		305,500
Cr Non-controlling interests in D Co		700,000
	5,478,400	5,478,400

Goodwill in sub-group

Fair value of INA of sub-group at 1 Aug 20x4			
Share capital (B Co)	1,200,000		
Retained earnings (B Co)	650,000		
Book value of B Co		1,850,000	
Less B Co's investment in C Co		(900,000)	
Add intangible assets		150,000	
less deferred tax liability		(30,000)	
Fair value of INA of B Co		1,070,000	
Share capital (C Co)	520,000		
Retained earnings (C Co)	320,000		
Revaluation reserve (C Co)	95,000		
Add undervalued inventory	80,000		
Deferred tax liability	(16,000)		
Fair value of INA of C Co		999,000	
B Co's consolidated equity or net assets		2,069,000	
Fair value of consideration transferred	2,200,000		
Fair value of non-controlling interests (B Co)	226,900		
Fair value of non-controlling interests (C Co)	305,500		
Less fair value of INA of sub-group	(2,069,000)	(see workings above)	
Goodwill in B Co and C Co		663,400	

P Co's share of B			90%	
Fair value of consideration transferred			2,200,000	
Less share of fair value of INA of sub-group				
Share of B Co's FV of INA	963,000	90%*1,070,000		
Share of C Co's FV of INA	629,370	90%*70%*999,000	(1,592,370)	
Goodwill of B Co attributable to P Co			607,630	
B Co's NCI			226,900	
Less fair value of INA of sub-group				
Share of B Co's FV of INA	107,000	10%*1,070,000		
Share of C Co's FV of INA	69,930	10%*70%*999,000		
B Co's consolidated equity as at 1 January 20x4			176,930	
B Co's NCI's goodwill			49,970	
C Co's NCI			305,500	
Less Share of C Co's FV of INA			299,700	30%*999,000
C Co's NCI's goodwill			5,800	
Goodwill of B Co and C Co			663,400	

Goodwill of D Co

Fair value of consideration transferred	400,000
Fair value of previously-held interests	700,000
Fair value of NCI	700,000
Less Share of D Co's FV of INA	(1,190,000)
Goodwill of D Co	610,000

Goodwill of D Co attributable to NCI	
Fair value of NCI	700,000
Less Share of D Co's FV of INA	(476,000)
Goodwill of D Co attributable to NCI	224,000
Total goodwill (663,400 + 610,000)	**1,273,400**

CJE2: Remeasurement gain in previously held interests of D Co

Dr Investment	380,000	700,000 − 320,000
Cr ORE		380,000

Workings:

	Group
Fair value of previously held interests (40%)	700,000
Initial investment in 40% of D Co	(320,000)
P Co's share of post-acquisition change in equity of D Co (1 Jul 20x2 to 1 Jan 20x5)	(280,000)
Remeasurement gain on 1 Jan 20x5	100,000

During 20x5, the following entry was passed

Dr Investment	380,000		
Cr Remeasurement gain		100,000	
Cr ORE		280,000	Re-enact the post-acquisition change in RE

CJE3: Amortization of intangible asset

Dr Amortization		15,000	
Cr Accumulated amortization			15,000

CJE4: Tax effects of CJE3

Dr Deferred tax liability		3,000	
Cr Tax expense			3,000

CJE5: Allocate share of post-acq RE of B Co to NCI of B Co

Dr Opening RE	15,020		
Cr NCI (BS)		15,020	
RE at 1 Jan 20x6		800,200	
RE at date of acquisition		650,000	
Change in RE		150,200	
NCI's share		15,020	10%*150,200

CJE6: Eliminate dividends declared by B Co

Dr Dividend income		117,000	
Dr Non-controlling interests		13,000	10%*130,000
Cr Dividend declared			130,000

CJE7: Allocate share of current income of B Co to NCI of B Co

Dr Income to NCI		105,200	
Cr NCI (BS)			105,200
NPAT of B Co			1,120,000
Amortization of intangible asset, after tax			(12,000)
Less dividend received from C Co			(56,000)
Adjusted NPAT			1,052,000

CJE8: Adjustment of interest profit (transfer from P to B)

Dr ORE		40,000	
Dr Interest income		100,000	
Cr Interest expense			60,000

Cr Fixed asset			80,000

CJE9: Tax effects of CJE8

Dr DTA	16,000		
Cr Tax expense			8,000
Cr ORE			8,000

CJE10: Adjustment of excess depreciation on fixed assets

Dr Accumulated depreciation	4,000	6/12*80,000*1/10	
Cr Depreciation expense			4,000

CJE11: Tax effects of CJE10

Dr Tax expense	800		
Cr DTA			800

CJE12: Adjustment of cost of sales of undervalued inventory

Dr ORE	45,360		
Dr NCI	26,640	37%*90%*80,000	
Cr Inventory			72,000

CJE13: Tax effects of CJE12

Dr DTL	14,400		
Cr ORE			9,072
Cr NCI			5,328

CJE14: Cost of sales of undervalued inventory

Dr Cost of sales	8,000		
Cr Inventory			8,000

CJE15: Tax effects of CJE14

Dr DTL	1,600		
Cr Tax expense			1,600

CJE16: Allocation of post-acquisition RE to total NCI of C Co

Dr Opening RE	48,100			
Cr Non-controlling interests		48,100		
Retained earnings at 1 Jan 20x6				450,000
Retained earnings at 1 Aug 20x4				320,000
Change in retained earnings				130,000
Direct NCI			30%	39,000
Indirect NCI			7%	9,100
Total NCI			37%	48,100

CJE17: Allocation of current profit after tax to total NCI of C Co					
Dr Income to NCI	139,712				
Cr Non-controlling Interests		139,712			
Net profit after tax of C Co				384,000	
Less cost of sale of undervalued inventory, after tax				(6,400)	10%*80%*80,000
Adjusted NPAT				377,600	
Direct NCI			30%	113,280	
Indirect NCI			7%	26,432	
Total NCI			37%	139,712	

CJE18: Elimination of dividends declared by C Co

Dr Dividend income	56,000		70%*80,000
Dr Non-controlling interests	24,000		30%*80,000
Cr Dividend declared		80,000	

CJE19: Allocation of post-acq revaluation reserves to total NCI of C Co					
Dr Share of Revaluation reserves to NCI	1,850				
Cr Non-controlling interests		1,850			
Revaluation reserves at 31 Dec 20x6					100,000
Revaluation reserves at 1 Aug 20x4					95,000
Change in revaluation reserves					5,000
Direct NCI				30%	1,500
Indirect NCI				7%	350
Total NCI				37%	1,850

CJE20: Eliminate intercompany payable and receivable

Dr Intercompany payable	1,500,000	
Cr Intercompany receivable		1,500,000

Analytical check of Non-controlling interests

Total Non-controlling interests as at 31 December 20x6	**Total NCI**	**NCI of B Co and indirect NCI of C Co**	**Direct NCI of C Co**
CJE1: Elimination of investment in B Co, C Co and D Co	532,400	226,900	305,500
CJE5: Allocate share of post-acq RE of B Co to NCI of B Co	15,020	15,020	
CJE6: Eliminate dividends declared by B Co	(13,000)	(13,000)	
CJE7: Allocate share of current income of B Co to NCI of B Co	105,200	105,200	
CJE12: Adjustment of cost of sales of undervalued inventory	(26,640)	(5,040)	(21,600)
CJE13: Tax effects of CJE12	5,328	1,008	4,320
CJE16: Allocation of post-acquisition RE to total NCI of C Co	48,100	9,100	39,000
CJE17: Allocation of current profit after tax to total NCI of C Co	139,712	26,432	113,280
CJE18: Elimination of dividends declared by C Co	(24,000)		(24,000)
CJE19: Allocation of post-acq revaluation reserves to total NCI of	1,850	350	1,500

C Co			
	783,970	365,970	418,000

Analytical check on non-controlling interests of B Co

B Co's shareholders' equity as at 31 December 20x6	2,990,200	1,200,000 + 1,790,200
Less investment in C Co	(900,000)	
	2,090,200	
NCI's share of book value of equity of B as at 31 Dec 20x6	209,020	10%*2,090,200
NCI's share of intangible asset, after tax as at 31 Dec 20x6	10,800	10%*9/10*80%*150,000
NCI of B Co's goodwill as at 31 Dec 20x6	49,970	
NCI of B Co	269,790	

Analytical check of NCI of C Co

		Indirect NCI	**Direct NCI**
C Co's shareholders' equity as at 31 December 20x6	1,374,000	520,000 + 754,000	+ 100,000
C Co's total NCI share of equity as at 31 December 20x6	508,380	96,180	412,200
Goodwill attributable to C Co's NCI	5,800		5,800
Total NCI of C Co as at 31 December 20x6	514,180	96,180	418,000
NCI of B Co and C Co	**783,970**	365,970	418,000

CJE21: Allocate share of post-acquisition RE of D Co to NCI

Dr ORE	164,000	
Cr NCI		164,000
RE of D as at 1 Jan 20x6		800,000
RE of D as at date of acquisition		390,000
Change in RE		410,000
Share of D's change in RE		164,000

CJE22: Elimination of dividends declared by D Co

Dr Dividend income	30,000	
Dr NCI	20,000	
Cr Dividend declared		50,000

CJE23: Share of current income to NCI

Dr Share of current income to NCI	198,400	
Cr NCI		198,400

Workings:

NPAT	496,000
Share of adjusted NPAT of D	198,400

Analytical check of NCI in D Co:

Book value of shareholders' equity of D	2,046,000	800,000+1,246,000
NCI's share of D's identifiable net assets	818,400	
NCI's goodwill	224,000	
	1,042,400	
CJE1: Elimination of investment in B Co, C Co and D Co	700,000	
CJE21: Allocate share of post-acq RE of D Co to NCI	164,000	
CJE22: Elimination of dividends declared by D Co	(20,000)	
CJE23: Share of current income to NCI	198,400	
NCI in D Co as at 31 Dec 20x6	**1,042,400**	-

Analytical check of closing retained earnings

P's RE	5,596,000
B's RE	1,790,200
C's RE	754,000
D's RE	1,246,000
CJE1: Elimination of investment in B Co, C Co and D Co	(1,360,000)
CJE2: Remeasurement gain in previously held interests of D Co	380,000
CJE3: Amortization of intangible asset	(15,000)
CJE4: Tax effects of CJE3	3,000
CJE5: Allocate share of post-acq RE of B Co to NCI of B Co	(15,020)
CJE6: Eliminate dividends declared by B Co	13,000
CJE7: Allocate share of current income of B Co to NCI of B Co	(105,200)
CJE8: Adjustment of interest profit (transfer from P to B)	(80,000)
CJE9: Tax effects of CJE8	16,000
CJE10: Adjustment of excess depreciation on fixed assets	4,000
CJE11: Tax effects of CJE10	(800)
CJE12: Adjustment of cost of sales of undervalued inventory	(45,360)
CJE13: Tax effects of CJE12	9,072
CJE14: Cost of sales of undervalued inventory	(8,000)
CJE15: Tax effects of CJE14	1,600
CJE16: Allocation of post-acquisition RE to total NCI of C Co	(48,100)
CJE17: Allocation of current profit after tax to total NCI of C Co	(139,712)
CJE18: Elimination of dividends declared by C Co	24,000
CJE21: Allocate share of post-acq RE of D Co to NCI	(164,000)
CJE22: Elimination of dividends declared by D Co	20,000
CJE23: Share of current income to NCI	(198,400)
Consolidated RE at 31 Dec 20x6	**7,677,280**

Analytical check

P's RE	5,596,000	
P's share of B Co's post-acquisition RE	1,026,180	90%*(1,790,200 − 650,000)
P's share of C Co's post-acquisition RE	273,420	63%*(754,000 − 320,000)
P's share of D Co's post-acquisition RE	513,600	60%*(1,246,000 − 390,000)
P's share of cumulative amortization of intangible asset of B Co	(10,800)	90%*80%*150,000/10
P's share of cost of sales of undervalued inventory of C Co	(40,320)	63%*80%*80,000
P's share of unrealized interest income (P to B Co)	(60,800)	80%*(120,000 − 80,000+ 100,000-60,000)*9.5/10
Remeasurement gain in D Co	380,000	
Consolidated RE at 31 Dec 20x6	**7,677,280**	

APPENDIX 7B

Change in Significant Influence

ACQUISITION OF AN ASSOCIATE IN STAGES

Just as an acquirer may obtain control of an acquiree in stages as discussed in Chapter 7, an investor may also obtain significant influence over an associate in stages.[7] This can be achieved either by the investor acquiring additional equity interests or it could be due to circumstantial changes that result in the investor obtaining significant influence. Such changes in circumstances will be further discussed in the section below.

While IFRS 3 provides detailed guidance on how the acquirer accounts for business combination achieved in stages, IAS 28 is silent on how piecemeal acquisition of associates[8] should be accounted for by the investor. Paragraph 10 of IAS 28 requires the investment in associate to be recognized at cost on initial recognition when applying the equity method. However, neither the IFRS Standard nor other IFRS Standards define cost and accordingly how cost is to be measured for associates acquired in stages.

In our view, an entity has an accounting policy choice to account for a step acquisition of an associate using either the cost approach or the fair value approach. The entity will have to apply the accounting policy consistently for similar transactions, other events and conditions as required under paragraph 13 of IAS 8 *Accounting policies, Changes in Accounting Estimates and Errors*.

Cost approach

In applying the cost approach in accounting for acquisition of associates in stages, an entity has to determine the measurement for three components in the investment in associate. They are namely:

1. Cost of the investment in associate
2. Share of post-acquisition results and other comprehensive income for the previously held tranche of equity interests – specifically whether the investor should recognize the share of post-acquisition results and other comprehensive

income for the initial tranche held when it first applies equity accounting after obtaining significant influence in the investee

3. Goodwill in the investment (or conversely gain on bargain purchase)

Insofar as the cost of investment of the associate is concerned, it is generally accepted that the cost of investments in both the consolidated and separate financial statements[9] of the investor is the aggregate of the considerations given in exchange for the various tranches of equity interests plus any acquisition-related costs. To the extent that the initial tranche of investment is accounted for as a fair value through other comprehensive instrument (under IFRS 9) for which fair value changes are taken to other comprehensive income, the cumulative changes in fair value recognized in other comprehensive income is reversed through profit or loss to restate the carrying value of the initial tranche of investment back to cost when significant influence is obtained with the acquisition of the subsequent tranche.

page 575

Conversely, if the initial tranche of investment is measured at fair value through profit or loss, the fair value changes previously recognized in retained earnings are reversed through profit or loss[10] to restate the initial investment back to cost when significant influence is obtained with the acquisition of the subsequent tranche of equity interest.

In determining the second and third components above, there is diversity in practice. The diversity mainly stems from how the requirements of IAS 28 are interpreted in the context of step acquisition of associates. In particular,

1. Paragraph 32 of IAS 28 requires an investment to be accounted for using the equity method from the date significant influence is attained. The question is, in the case where an associate is acquired in stages, is a catch-up adjustment required in respect of the initial tranche of investment to reflect the application of the equity method when the investor obtains significant influence on acquiring the subsequent tranche of equity interests, that is, should the investor recognize the share of post-acquisition results and other comprehensive income for the initial tranche of equity interests at the point where significant influence is attained.
2. Paragraph 32 of IAS 28 further requires the difference between the cost of investment and the investor's share of the net fair value of the investee's identifiable assets and liabilities to be accounted for as (a) goodwill relating to an associate or a joint venture which is included in the carrying amount of the investment or (b) as income in the determination of the investor's share of the associate or joint venture's profit or loss in the period in which the investment is acquired, any excess of the investor's share of the net fair value of the investee's identifiable assets and liabilities over the cost of the investment. However, the standard is silent as to which date the fair value of the identifiable assets and liabilities should be determined in the case of a step acquisition. Should it be determined only at the date when the investment becomes an associate or should the fair value be determined at every date for which consideration was given that is, fair value of the identifiable assets should be determined for every tranche of investment until significant influence is attained. This question similarly extends to the calculation of the investor's share of the fair value adjustments in respect of its investment in the associate.

The interplay between the various interpretations of the responses to the questions above results in different variations of the cost approach. One of the acceptable approaches is shown in Illustration 7B.1. In this approach, the cost of the investment in associate acquired on a piecemeal basis is the aggregate of the considerations paid for each tranche and a catch-up adjustment of the share of investee's profit or loss as well as other comprehensive income for the first tranche is recorded. Changes in fair value of the net assets are also accounted for the first tranche.[11] Goodwill and the investor's share of any fair value adjustments are calculated at each stage of the acquisition.[12] Acquisition related costs are capitalized as part of the investment in associate.

page 576

ILLUSTRATION 7B.1 Applying the cost approach in step acquisition of associate

On 1 January 20x3, Entity X acquired a 10% interest in Entity Y for $100,000. The investment was designated and accounted for as a fair value through other comprehensive income financial instrument for which fair value changes are taken to other comprehensive income. On 1 January 20x5, Entity X purchased an additional 30% interest for $750,000 and obtained significant influence in Entity Y. Transaction costs associated with the purchase of the second tranche amounted to $15,000. The summarized financial information of Entity Y from 20x3 to 20x5 is set out below.

Changes in net assets of Entity Y		$
1 Jan 20x3	Net assets at book value	800,000
	Net assets at fair value	*820,000*
	Profit for the year	200,000
	Dividends paid	(50,000)
	Asset revaluation for the year — OCI	30,000
	Fair value changes of financial instruments for the year	8,000
31 Dec 20x3/1 Jan 20x4	Net assets at book value	988,000
31 Dec 20x4	Profit for the year	180,000
	Dividends paid	(10,000)
	Fair value changes of financial instruments for the year	5,000
31 Dec 20x4/1 Jan 20x5	Net assets at book value	1,163,000
	Net assets at fair value	*2,000,000*
31 Dec 20x5	Profit for the year	300,000
	Dividends paid	(20,000)
	Asset revaluation for the year — OCI	2,000
	Fair value changes of financial instruments for the year	3,000
31 Dec 20x5	Net assets at book value	1,448,000

The fair values of the 10% shareholdings in Entity Y as at 31 December 20x3 and 31 December 20x4 are $120,000 and $160,000, respectively. Assume that Entity X accounts for the investment in associate at cost in the separate financial statements. The effects of taxes are ignored in this illustration.

Calculate the financial impact of the step acquisition of associate and prepare the accounting entries for the transaction.

Analysis

Calculate the goodwill arising from the acquisition for each tranche

	$	
1st Tranche (Acquisition of 10% interest)		
Consideration paid	100,000	
Less: Fair value of net identifiable assets	(82,000)	(10%*820,000)
Goodwill	18,000	
2nd Tranche (Acquisition of 30% interest)		
Consideration paid	750,000	
Less: Fair value of net identifiable assets	(600,000)	(30%*2,000,000)

Goodwill	150,000	
Total goodwill	168,000	

In this variant of the cost approach, goodwill is calculated for each tranche of acquisition as the difference between the fair value of the consideration paid and the proportionate share of the fair value of the net identifiable assets of Entity Y at the date of each purchase. In other variations, goodwill is calculated only at the acquisition where significant influence is attained.

Calculate the fair value adjustments arising from acquisition for each tranche

	$	
1st Tranche (Acquisition of 10% interest)		
Proportionate share of fair value of net assets	82,000	(10%*820,000)
Proportionate share of book value of net assets	(80,000)	(10%*800,000)
Excess of fair value over net book value (Note 1)	2,000	
Amortization per year	1,000	
2nd Tranche (Acquisition of 30% interest)		
Proportionate share of fair value of net assets	600,000	(30%*2,000,000)
Proportionate share of book value of net assets	(348,900)	(30%*1,163,000)
Excess of fair value over net book value (Note 2)	251,100	
Amortization per year	25,110	

Note 1: Excess of fair value of net book value relates to sales order book. This intangible asset is amortized over two years.
Note 2: Excess of fair value of net book value relates to trademark. This intangible asset is amortized over ten years.

Calculation of the share of profits and other comprehensive income to be recognized for first tranche

	$	
FY2013		
Share of associate's profits for the year	20,000	(10%*200,000)
Less: Amortization of intangible asset – sales order book	(1,000)	
	19,000	
Share of other comprehensive income		
– asset revaluation for the year	3,000	(10%*30,000)
– fair value changes for the year	800	(10%*8,000)
	3,800	
FY2014		
Share of associate's profits for the year	18,000	(10%*180,000)

Less: Amortization of intangible asset – sales order book	(1,000)	
	17,000	
Share of other comprehensive income		
– fair value changes for the year	500	(10%*5,000)

In this variant of the cost approach, the investor will account for its share of associate's results and other comprehensive income based on its shareholdings interest for the first tranche. In other variants, the investor does not account for its share of the associate's results and other comprehensive income for the initial tranche of investment.

Calculation of the share of profits and other comprehensive income for FY2015

	$	
FY2015		
Share of associate's profits for the year	120,000	(40%*300,000)
Less: Amortization of intangible asset – trademark	(25,110)	
	94,890	
Share of other comprehensive income		
– asset revaluation for the year	800	(40%*2,000)
– fair value changes for the year	1,200	(40%*3,000)
	2,000	

Prepare accounting entries

In the separate financial statements

1 Jan 20x3	Dr Investment in FVOCI asset	100,000	
	Cr Cash		100,000
	Being cash paid for 10% investment		
31 Dec 20x3	Dr Investment in FVOCI asset	20,000	
	Cr Fair value reserves		20,000
	Being fair value changes for the year		
	Dr Cash	5,000	
	Cr Dividend income		5,000
	Being dividend income received		
31 Dec 20x4	Dr Investment in FVOCI asset	40,000	
	Cr Fair value reserves		40,000
	Being fair value changes for the year		

	Dr Cash	1,000	
	Cr Dividend income		1,000
	Being dividend income received		
1 Jan 20x5	Dr Profit or loss	60,000	
	Cr Investment in FVOCI asset		60,000
	Being reinstatement of FVOCI at fair value back to cost – Note 3		
	Dr Investment in associate	100,000	
	Cr Investment in FVOCI asset		100,000
	Being reclassification of investment in FVOCI asset to investment in associate		
	Dr Investment in associate	750,000	
	Cr Cash		750,000
	Being payment for 2nd tranche of investment in associate		
	Dr Investment in associate	15,000	
	Cr Cash		15,000
	Being capitalization of transaction costs		
31 Dec 20x5	Dr Cash	8,000	
	Cr Dividend income		8,000
	Being dividend income received		
	Dr Fair value reserves	60,000	
	Cr Retained earnings		60,000
	Being reclassification of fair value reserves to retained earnings		

Note 3: The cumulative changes in fair value recognized in other comprehensive income is reversed through profit or loss to restate the carrying value of the initial tranche of 10% investment back to cost when significant influence is obtained with the acquisition of the subsequent 30% interest.

In the consolidated financial statements

1 Jan 20x5	Dr Investment in associate	40,300		
	Cr Opening retained earnings		36,000	(19,000 + 17,000)
	Cr Share of associate's OCI		4,300	
	Being equity accounting for 1st tranche of investment			
	Dr Opening retained earnings	6,000		
	Cr Investment in associate		6,000	
	Being dividend income received from associate for FY2013 and FY2014			
31 Dec 20x5	Dr Investment in associate	96,890		
	Cr Share of associate's profits		94,890	
	Cr Share of associate's OCI		2,000	
	Being equity accounting for the year			
	Dr Dividend income	8,000		
	Cr Investment in associate		8,000	
	Being dividend income received from associate			

Compute the balance in the investment in associate account

Investment in associate account		$
1 Jan 20x3	Payment for 1st tranche of investment	100,000
31 Dec 20x3	Fair value changes for FY2013	20,000
31 Dec 20x4	Fair value changes for FY2014	40,000
1 Jan 20x5	Reversal of fair value changes on attainment of significant influence	(60,000)
1 Jan 20x5	Payment for 2nd tranche of investment	750,000
1 Jan 20x5	Transaction costs capitalized	15,000
1 Jan 20x5	Equity accounting for 1st tranche up to FY2014	40,300
1 Jan 20x5	Dividend income from associate for FY2013 and FY2014	(6,000)
31 Dec 20x5	Equity accounting for FY2015	96,890
31 Dec 20x5	Dividend income from associate	(8,000)
31 Dec 20x5	Balance as at end	988,190

Analytical check on the investment in associate account

Investment in associate account	$	$	
Book value of net assets of associate at 31 December 20x5			
– 1st tranche	144,840		(10%*1,448,000)
– 2nd tranche	434,400		(30%*1,448,000)
		579,200	
Goodwill			
– 1st tranche	18,000		
– 2nd tranche	150,000		

		168,000	
Unamortized fair value adjustments			
– 1st tranche	–		(2,000 – (2*1,000))
– 2nd tranche	225,990		(251,100 – 25,110)
		225,990	
Transaction costs capitalized		15,000	
		988,190	

Fair Value Approach

Under the fair value approach, the cost of the investment in associate is measured as the sum of the fair value of the previously held interest determined at the date when significant influence is obtained and the fair value of the consideration transferred in exchange for additional equity interests at the date when the investment becomes an associate.

The conceptual underpinning for the fair value approach is predicated on paragraph 26 in IAS 28 which explains that many of the consolidation procedures and the concepts used in accounting for the acquisition of a subsidiary (in IFRS 3) are also appropriate in the accounting for the acquisition of an investment in an associate or a joint venture and the application of the equity method. Since IFRS 3 requires previously held interests, in the case of a business combination achieved in stages, to be remeasured to fair value at the date where control is obtained with the resulting gain or loss recognized in profit or loss, this requirement can be applied by analogy to the previously held interests in cases where the associate is acquired in stages.

Hence, at the date where significant influence is attained, previously held interests are measured at fair value. As this initial investment should either be accounted for at fair value through profit or loss or fair value through other comprehensive income under IFRS 9, there would be no further changes to the carrying value. If the initial investment was accounted for at fair value through profit or loss, the gain or loss on fair value measurement would have been accounted for at profit or loss which is consistent with the requirement of IFRS 3. Hence, no other adjustment is required. Conversely, if the initial investment was accounted for as fair value through other comprehensive income under IFRS 9, the investor would reclassify the cumulative fair value changes that were recognized in other comprehensive income to profit or loss as if the investor had disposed of the initial investment directly.

In the case of goodwill determination, consistent with the approach in IFRS 3, goodwill (or gain on bargain purchase) is calculated only at the date when significant influence is achieved by comparing the cost of investment (which is the sum of the fair value of previously held interest and the fair value of the consideration transferred for the additional equity interests) with the investor's share of the fair value of the identifiable assets and liabilities at the date where significant influence is achieved.

ILLUSTRATION 7B.2 Applying the fair value approach in step acquisition of associate

Assume the same facts as Illustration 7B.1. Instead of using the cost approach, Entity X adopts the fair value approach to account for the step acquisition of associate – Entity Y.

Analysis

Calculate the goodwill on acquisition of associate

Goodwill	=	[Fair value of consideration transferred	+	Fair value of previously held interest at date where significant influence is attained]	−	Investor's share of fair value of net identifiable assets of associate at date where significant influence is attained
	=	(750,000	+	160,000)	−	(40%*2,000,000)
	=	910,000	−	800,000		
	=	110,000				

Calculate the fair value adjustments arising from acquisition of associate

	$	
Proportionate share of fair value of net assets	800,000	(40%*2,000,000)
Proportionate share of book value of net assets	(465,200)	(40%*1,163,000)
Excess of fair value over net book value (Note 1)	334,800	
Amortization per year	33,480	

Note 1: Excess of fair value of net book value relates to trademark. This intangible asset is amortized over 10 years.

Calculation of the share of profits and other comprehensive income for FY2015

	$	
FY2015		
Share of associate's profits for the year	120,000	(40%*300,000)
Less: Amortization of intangible asset – trademark	(33,480)	
	86,520	
Share of associate's other comprehensive income		
– asset revaluation for the year	800	(40%*2,000)
– fair value changes for the year	1,200	(40%*3,000)
	2,000	

Prepare accounting entries

In the separate financial statements

The accounting entries in the separate financial statements are the same as the entries passed in the cost approach.

In the consolidated financial statements

1 Jan 20x5	Dr Fair value reserves	60,000		
	Cr Other income–Profit or loss			60,000
	Being reclassification of amounts accumulated in fair value reserves to profit or loss			

	Dr Transaction costs–profit or loss	15,000	
	Cr Investment in associate		15,000
	Being transaction costs expensed in the consolidated financial statements		
31 Dec 20x5	Dr Investment in associate	88,520	
	Cr Share of associate's profits		86,520
	Cr Share of associate's OCI		2,000
	Being equity accounting for the year		
	Dr Opening retained earnings	8,000	
	Cr Investment in associate		8,000
	Being dividend income received from associate		

Under the fair value approach, equity accounting for the first tranche of investment is not performed and transaction costs are expensed instead of being capitalized in the investment in associate.

Compute the balance in the investment in associate account

Investment in associate account		$
1 Jan 20x3	Payment for 1st tranche of investment	100,000
31 Dec 20x3	Fair value changes for FY2013	20,000
31 Dec 20x4	Fair value changes for FY2014	40,000
1 Jan 20x5	Payment for 2nd tranche of investment	750,000
31 Dec 20x5	Equity accounting for FY2015	88,520
31 Dec 20x5	Dividend income from associate	(8,000)
31 Dec 20x5	Balance as at end	990,520

Analytical check on the investment in associate account

Investment in associate account	$	
Book value of net assets of associate at 31 December 20x5	579,200	(40%*1,448,000)
Goodwill	110,000	
Unamortized fair value adjustments	301,320	(334,800–33,480)
	990,520	

ACQUISITION OF ADDITIONAL INTERESTS IN AN ASSOCIATE

After an investor has obtained significant influence in an associate, that investor may acquire additional equity interests in that associate without gaining control, that is, the investor continues to have significant influence after the acquisition of the additional interests.

Similarly, IAS 28 does not provide guidance on such transactions. However, in this case, we believe that the transaction should be accounted for as follows:

1. Fair value of the consideration paid for the additional equity interests is added to the carrying value of the cost of investment in the associate.
2. Goodwill and the investor's share of any new fair value adjustments arising from the acquisition of this additional interest is calculated based on the fair value of the consideration given in exchange for the additional interests and the investor's incremental share of the fair value of identifiable assets and liabilities at the date of the additional purchase. The goodwill and unamortized portion of the fair value adjustments for this purchase of additional interests is aggregated with the goodwill and unamortized portion of the fair value adjustments for the existing tranche at the end of the financial period.
3. No remeasurement of the previously held interest in the associate to fair value is performed. Instead, the investor will continue to apply equity accounting in respect of the previously held interests by recognizing its share of profits and other comprehensive income to the extent of its previously held interests up to the date where the additional interests are acquired. Appropriate adjustments to the investor's share of the associate's profit or loss after acquisition should continue to be made in respect of the investor's share of the fair value adjustments recognized at the date where the associate was first acquired (for example additional depreciation based on the fair value of the assets at the date of acquisition of associate).
4. Subsequent to the acquisition to additional interests, the investor will recognize its share of results and other comprehensive income based on its new shareholding interests in the associate. Adjustments pertaining to the amortization of the fair value adjustments related to both the initial acquisition and subsequent purchase of additional interests should continue to be made.

This accounting treatment is appropriate regardless of which accounting policy the investor elects in accounting for the acquisition of associates in stages as discussed above.

The rationale for the accounting treatment described above is attributable to the fact that there is no change in the nature of the investee post-acquisition of the additional interests. The investee continues to be an associate for which the investor has significant influence. As control is not obtained with the purchase of the additional interests, the transaction does not constitute a significant economic event which warrants a change in the classification and measurement of the investment as set out in IFRS 3. Hence, no remeasurement of the previously held interests to fair value is carried out and the cost accumulation approach where the fair value of the consideration paid for the additional interest is "accumulated" in the cost of investment in associate is the most appropriate method of accounting.

ILLUSTRATION 7B.3 Acquisition of additional interests in associate while maintaining significant influence

Assume the base facts as set out in Illustration 7B.1. On 1 July 20x6, Entity X acquired an additional 5% interest in Entity Y for $120,000. This is in addition to the 40% it already holds. Entity X determines that it continues to have significant influence after the additional acquisition of 5% interest. Transaction costs amounted to $8,000. The summarized financial information of Entity Y from 20x5 to 20x6 is given below. The effects of taxes are ignored in this illustration.

page 584

Changes in net assets of Entity Y		$
31 Dec 20x5/1 Jan 20x6	Net assets at book value	1,448,000
	Profit for the period from 1 Jan to 30 Jun 20x6 .	200,000
	Fair value changes of financial instruments for the period from 1 Jan to 30 Jun 20x6	1,500

30 Jun 20x6/1 Jul 20x6	Net assets at book value	1,649,500
	Net assets at fair value	*1,800,000*
	Profit for period from 1 Jul to 31 Dec 20x6	250,000
	Dividends paid	(10,000)
	Fair value changes of financial instruments from 1 Jul to 31 Dec 20x6	2,000
31 Dec 20x6	Net assets at book value	1,891,500

Calculate the financial impact of the acquisition of additional interests and prepare the accounting entries for the transaction.

Analysis

Calculate the goodwill arising from the additional acquisition of 5% interest

	$	
Acquisition of additional 5% interest		
Consideration paid	120,000	
Less: Fair value of net identifiable assets	(90,000)	(5%*1,800,000)
Goodwill	30,000	
Goodwill from 1st and 2nd tranches	168,000	(From Illustration 7B.1)
Total goodwill	198,000	

Calculate the fair value adjustments arising from the acquisition of additional 5% interest

	$	
Acquisition of additional 5% interest		
Proportionate share of fair value of net assets on 1 Jul 20x6	90,000	(5%*1,800,000)
Proportionate share of book value of net assets on 1 Jul 20x6	(82,475)	(5%*1,649,500)
Excess of fair value over net book value (Note 1)	7,525	
Amortization per year	1,505	

Note 1: Excess of fair value of net book value relates to patented technology. This intangible asset is amortized over 5 years.

Calculation of the share of profits and other comprehensive income for the year

	$	
FY2016		
Share of associate's profits for the year (Note 2)	192,500	((40%*450,000) + (5%*250,000))
Less: Amortization of intangible asset – trademark	(25,110)	(From Illustration 7B.1)
Less: Amortization of intangible asset – patented	(753)	(1,505/2) – Amortization for half year

technology			
		166,637	
Share of associate's other comprehensive income			
– fair value changes for the year (Note 2)		1,500	((40%*(1,500 + 2,000)) + (5%*2,000))

Note 2: This relates to Entity X's 40% share of profits and other comprehensive income in Entity Y from 1 January 20x6 to 31 December 20x6 + 5% of profits and other comprehensive income from 1 July 20x6 to 31 December 20x6.

Prepare accounting entries

In the separate financial statements

1 Jul 20x6	Dr Investment in associate	120,000	
	Cr Cash		120,000
	Being payment for additional 5% interest in associate		
	Dr Investment in associate	8,000	
	Cr Cash		8,000
	Being capitalization of transaction costs		
31 Dec 20x6	Dr Cash	4,500	
	Cr Dividend income		4,500
	Being dividend income received		

In the consolidated financial statements

31 Dec 20x6	Dr Investment in associate	168,137	
	Cr Share of associate's profits		166,637
	Cr Share of associate's OCI		1,500
	Being equity accounting for the year		
	Dr Dividend income	4,500	
	Cr Investment in associate		4,500
	Being dividend income received from associate		

Compute the balance in the investment in associate account

Investment in associate account		$
31 Dec 20x5/1 Jan 20x6	Balance as at beginning (From Illustration 7B.1)	988,190
1 Jul 20x6	Payment for additional 5% interests	120,000
1 Jul 20x6	Transaction costs capitalized	8,000
31 Dec 20x6	Equity accounting for FY2016	168,137
31 Dec 20x6	Dividend income from associate	(4,500)
31 Dec 20x6	Balance as at end	1,279,827

Analytical check on the investment in associate account

Investment in associate account	$	$	
Book value of net assets of associate at 31 December 20x6			
– Initial shareholdings (40%)	756,600		(40%*1,891,500)
– Additional shareholdings (5%)	94,575		(5%*1,891,500)
		851,175	
Goodwill			
– Initial shareholdings (40%)	168,000		(From Illustration 7B.1)
– Additional shareholdings (5%)	30,000		(From Illustration 7B.1)
		198,000	
Unamortized fair value adjustments			
– Initial shareholdings (40%)	200,880		(251,100 - (2*25,110))
– Additional shareholdings (5%)	6,772		(7,525 - (1,505/2))
		207,652	
Transaction costs capitalized		23,000	(15,000 + 8,000)
		1,279,827	

LOSS OF SIGNIFICANT INFLUENCE

Paragraph 22 of IAS 28 requires the equity method to be discontinued from the date when the investment ceases to be an associate, that is, when the investor loses significant influence. The situations in which this could happen would include the following scenarios:

1. When the investment becomes a subsidiary, i.e. control is obtained.
2. When the interests in the investment is disposed of and the investor retains a remaining interest which is a financial asset in the former associate.
3. When the interests in the investment is fully disposed.

INVESTMENT IN ASSOCIATE BECOMES SUBSIDIARY

As discussed above, an investor may obtain control over its existing associate through the acquisition of additional interests such that the associate becomes a subsidiary. In this case, the investor has effectively acquired a subsidiary in stages. Paragraph 22(a) of IAS 28 specifically requires the investor to discontinue the use of equity method and account for the investment in accordance with IFRS 3 and IFRS 10. Refer to Chapter 7 for a more detailed discussion of the accounting treatment for business combination achieved in stages.

PARTIAL DISPOSAL OF ASSOCIATE WHILE MAINTAINING SIGNIFICANT INFLUENCE

An investor may dispose its equity interests in an associate partially and continue to maintain significant influence based on its remaining shareholding interest, that is, the investee remains as an associate. Conversely, the decrease in interest in the associate may also be brought about by changes in circumstances. Such changes in circumstances will be discussed further in the section below.

IAS 28 is silent as to how the cost of the investment partially disposed should be measured and whether a gain or loss on disposal should be recognized in such transactions. While IFRS 10 requires a partial disposal of a subsidiary in which the parent does not lose control to be accounted for as an equity transaction, we believe that this principle cannot be extended to that of a partial disposal of an associate where the investor does not loss significant influence. This is because the associate is not part of the group as defined in IFRS 10. Therefore, the partial disposal of the associate is not a transaction with equity owners. Instead, it is a transaction (i.e., disposal) with third parties. Accordingly, the proportionate cost of investment of the associate disposed would be derecognized with the gain or loss on disposal recognized in the profit or loss. This argument is further augmented by the paragraph 25 of IAS 28 which requires the investor to "reclassify to profit or loss, the proportion of the gain or loss that had been previously recognized in other comprehensive income relating to the reduction in the ownership interests if that gain or loss would be required to be reclassified to profit or loss on the disposal of the related assets or liabilities" in transactions when the investor's ownership interests in an associate is reduced but the investor continues to apply the equity method.

Similarly, paragraph 48C of IAS 21 also requires the proportionate share of the cumulative amount of exchange differences recognized in other comprehensive income and accumulated in equity to be reclassified to profit or loss in the case of partial disposals of foreign operations. Partial disposal of foreign operations in this case would include partial disposal of interests in a foreign associate or joint arrangement. Accordingly, we believe that a gain or loss on disposal should be recognized in the profit or loss when an investor makes a partial disposal of its investment in the associate.

Specifically, the investor should:

1. Derecognize the cost of investment in the associate on a proportionate basis on the basis of the percentage of shareholdings disposed. The cost of investment derecognized would include the proportionate share of goodwill and the investor's share of unamortized portion of the fair value adjustments at the date of disposal.
2. Recognize the fair value of consideration received from the transaction, event, or circumstance that result in the partial disposal.
3. Reclassify on a proportionate basis to profit or loss[13] or transfer directly to retained earnings[14] if required by other IFRS Standards, the amounts recognized in other comprehensive income in relation to the disposed interests.
4. Recognize any resulting difference as a gain or loss in profit or loss.
5. Account for the remaining interests in the associate in accordance with IAS 28.

ILLUSTRATION 7B.4 Partial disposal of associate while maintaining significant influence

Entity I has 45% interest in Entity A. The shareholdings were previously acquired on 31 December 20x2 for consideration amounting to $65,000. Entity I's share of the fair value of the net identifiable assets and the book value of the net assets of Entity A at the date of acquisition were $55,000 and $49,500, respectively.

On 1 January 20x5, Entity I disposed 10% of its interest in Entity A at $65,000. Entity I has assessed that it continues to maintain significant influence over Entity A subsequent to the disposal. The carrying value of the net assets in Entity A at the date of acquisition and disposal is set out below.

Statement of Financial Position	$	$

	1 Jan 20x5	31 Dec 20x2
Other assets	700,000	310,000
Other liabilities	(150,000)	(200,000)
	550,000	110,000
Represented by:		
Share capital	10,000	10,000
Retained earnings	500,000	100,000
Asset revaluation reserves	25,000	–
Fair value reserves	15,000	–
	550,000	110,000

Calculate the financial impact of the partial disposal of associate and prepare the accounting entries for the transaction. The effects of taxes are ignored in this illustration.

Analysis

Calculate the goodwill and fair value adjustments on acquisition of the associate

	$	
Consideration paid	65,000	
Less: Fair value of net identifiable assets	(55,000)	
Goodwill	10,000	
Proportionate share of fair value of net assets	55,000	
Proportionate share of book value of net assets	(49,500)	(45%*110,000)
Excess of fair value over net book value (Note 1)	5,500	
Amortization per year	1,100	

Note 1: Excess of fair value of net book value relates to patented technology. This intangible asset is amortized over 5 years.

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements

	$
Sales proceeds	65,000
Less: Cost of investment in separate financial statements (Note 2)	(14,444)
Gain on disposal	50,556

Note 2: Derived as (10%/45%)* initial cost of US$65,000.

In the consolidated financial statements

	$
Sales proceeds	65,000
Less: Carrying value of net assets (Note 3)	(57,956)
Gain on disposal (Note 4)	7,044

Note 3: The carrying value of net assets is derived as:

Investment in associate before disposal	$	
Cost	65,000	
Share of post-acquisition profits	177,800	(45%*(500,000 − 100,000) − (1,100*2))
Share of associate's OCI	18,000	(45%*(25,000 + 15,000))
	260,800	
Analytical check:		
Book value of net assets of associate	247,500	(45%*550,000)
Goodwill	10,000	
Unamortized intangible asset	3,300	(5,500 − (1,100*2))
	260,800	
Therefore:		
10% of carrying value disposed	57,956	(10%/45%*260,800)

Note 4: Gain on disposal at the consolidated financial statements level is effectively as follows:

Gain on disposal at consolidated financial statements level	=	Gain on disposal in separate financial statements	-	Entity I's disposed share of post-acquisition profits and OCI of Entity A
	=	50,556	-	(10%*(500,000 − 100,000)) − ((10%/45%)*(2*1,100))
	=	50,556	-	43,512
	=	7,044		

Prepare the accounting entries

In the separate financial statements

1 Jan 20x5	Dr Cash	65,000	
	Cr Cost of investment		14,444
	Cr Gain on disposal		50,556
	Being gain on disposal of investment in the separate financial statements		

In the consolidated financial statements

1 Jan 20x5	Dr Gain on disposal	43,512	

	Cr Beginning retained profits	43,512

Being gain on disposal of investment in the consolidated financial statements

Calculate the balance in the investment in the associate in the consolidated financial statements post-disposal and perform an analytical check

Investment in associate account		$
1 Jan 20x5	Balance as at beginning	260,800
1 Jan 20x5	Disposal of 10% interest	(57,955)
31 Dec 20x6	Balance as at end	202,845

Analytical check on the investment in associate account

Investment in associate account	$	
Book value of net assets of associate at 1 January 20x5	192,500	(35%*550,000)
Goodwill	7,778	((35%/45%)*10,000)
Unamortized fair value adjustments	2,567	((35%/45%)*3,300)
	202,845	

RETAINED INTEREST IN FORMER ASSOCIATE IS A FINANCIAL ASSET

An entity may dispose a significant portion of its interests in the investment in the associate such that it loses significant influence but continues to retain some interest in the former associate.

In this situation, paragraph 22 of IAS 28 requires the equity method to be discontinued from the date when the investment ceases to be an associate. If the retained interest in the former associate is a financial asset, that retained interest shall be measured at fair value at the date where significant influence is lost. This fair value of the retained interest is regarded as its fair value on initial recognition as a financial asset in accordance with IFRS 9. The entity will recognize in profit or loss any difference between (1) the fair value of any retained interest and any proceeds received from disposing part of the interest in the associate and (2) the carrying amount of the investment at the date the equity method was discontinued.

Paragraph 22(c) of IAS 28 further requires the entity to account for all amounts previously recognized in other comprehensive income in relation to that investment on the same basis as would have been required if the investee had directly disposed of the related assets or liabilities when an entity discontinues the use of the equity method.

ILLUSTRATION 7B.5 Disposal of interest while retaining financial asset

Assume the same fact pattern in Illustration 7B.4. Instead of disposing 10% interest, Entity I sold off 35% shareholding interests in the associate to a third party for $250,000 while retaining 10% interest in Entity A on 1 January 20x5. As a result of the disposal, Entity I assessed that it lost significant influence over Entity A. The fair value of the remaining 10% interest at the date of disposal is $25,000.

Analysis

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements

	$
Sales proceeds	250,000
Less: Cost of investment in separate financial statements (Note 1)	(50,556)
Gain on disposal	199,444

Note 1: In the separate financial statements, the carrying value of the investment derecognized is based on the proportionate share of interests disposed. This is derived as (35%/45%)* initial cost of US$65,000.

In the consolidated financial statements

	$
Sales proceeds	250,000
Add: Fair value of 10% interest retained	25,000
Add: Share of associate's OCI reclassified to profit or loss – fair value changes (Note 2)	6,750
Less: Carrying value of net assets (Note 3)	(260,800)
Gain on disposal (Note 4)	20,950

Note 2: The cumulative balance in the fair value reserve is reclassified from equity to profit or loss upon disposal of the associate for which significant influence is lost in accordance with paragraph 22(c) of IAS 28.

Note 3: As Entity I has lost significant influence with the disposal of the 35% interest, the entire carrying amount of investment in associate is derecognized. The carrying value of net assets is derived as:

Investment in associate before disposal	$	
Cost	65,000	
Share of post-acquisition profits	177,800	(45%*(500,000 − 100,000) − (1,100*2))
Share of associate's OCI	18,000	(45%*(25,000 + 15,000))
	260,800	

Note 4: Gain on disposal at the consolidated financial statements level is effectively as follows:

Gain on disposal at consolidated financial statements level	=	Gain on disposal in separate financial statements	−	Entity I's disposed share of post-acquisition profits and OCI of Entity A	+	Fair value uplift of retained interest at date of disposal
	=	199,444	−	(45%*(500,000 − 100,000) (1,100*2)) + (45%*25,000)+	+	(25,000 − 14,444)
	=	199,444	−	(177,800 + 11,250)	+	10,556
	=	20,950				

+Only Entity I's share of asset revaluation reserve is included here as paragraph 41 of IAS 16 stipulates that the revaluation surplus may be transferred directly to retained earnings when the asset is derecognized and such transfers are not made through profit or loss. Entity I's share of fair value reserves were already included in the computation of gain or loss on disposal as explained in Note 2 above.

Prepare the accounting entries

In the separate financial statements

1 Jan 20x5	Dr Cash	250,000	
	Cr Cost of investment		50,556
	Cr Gain on disposal		199,444
	Being gain on disposal of investment in the separate financial statements		
	Dr Investment in FVOCI equity investment	10,556	
	Cr Profit or loss		10,556
	Being difference between cost and fair value of FVOCI instrument taken to profit or loss		

In the consolidated financial statements

1 Jan 20x5	Dr Investment in FVOCI equity investment	10,556	
	Dr Gain on disposal	178,494	
	Cr Opening retained earnings − post acquisition profits (Note 5)		177,800
	Cr Opening retained earnings − reclassification of asset revaluation reserves to beginning retained profit (Note 5)		11,250
	Being gain on disposal of investment in the consolidated financial statements		
	Dr Profit or loss	10,556	
	Cr Investment in FVOCI equity investment		10,556
	Being reversal of accounting entry passed in the separate financial statements		

Note 5: In practice, these two entries are aggregated together. We have separated the entries here for purposes of demonstrating the reclassification of the asset revaluation reserves to the beginning retained profits without recycling through profit or loss.

FULL DISPOSAL OF ASSOCIATE

When the shareholdings in an associate is fully disposed, the entity will discontinue the use of the equity method from the date when its investment ceases to be an associate in accordance with paragraph 22 of IAS 28. The carrying value of the associate at the date of disposal will be derecognized and the entity will recognize in profit or loss any difference between (1) the fair value of the consideration received from the disposal of the associate and (2) the carrying amount of the investment at the date of disposal. Furthermore, all amounts previously recognized in other comprehensive income in respect of that investment in associate will be accounted for on the same basis as it would have been required had the investee disposed of the related assets or liabilities directly in accordance with paragraph 22(c) of IAS 28.

DEEMED ACQUISITION OR DISPOSAL OF ASSOCIATES

As discussed above, apart from a direct acquisition or disposal of equity interests, an investor's interest in an associate can also be increased or reduced by way of changes in circumstances. Such changes in ownership interests due to circumstantial changes are commonly known as deemed acquisitions or deemed disposals in practice.

Deemed acquisitions and disposals may arise due to a number of reasons. Set out in the Table 7B.1 are some situations that could give rise to such transactions.

TABLE 7B.1 Scenarios on deemed acquisitions and deemed disposals

Deemed acquisitions	Deemed disposals
• Associate repurchases its ordinary shares held by other parties resulting in the investor increasing its relative shareholdings • Rights issue by associate is subscribed in full by investor but not the rest of the shareholders • Changes in composition of board of directors such that investor attains significant influence or control • Capitalization of amounts and loans due to the investor by the associate	• Investor does not subscribe or subscribes partially the rights issue undertaken by the associate • Associate issues ordinary shares upon the exercise of options held by parties other than the investor (e.g., employees on exercise of the vested employee share options) • Associate issues additional ordinary shares to Third parties other than the investor to raise funding • Changes in composition of board of directors such that investor loses significant influence • Conversion of convertible loans issued by associate into ordinary shares by debt holders

In order to identify and correctly account for these transactions, the entity must analyze the circumstances that lead to the deemed acquisitions or disposals carefully. As evident from the table above, consideration may or may not be transferred and the investor's absolute shareholding in the associate may or may not change after the transaction. We will discuss the accounting implications of deemed acquisitions and disposals below.

DEEMED ACQUISITIONS

An associate may undertake a share buy-back exercise in which ordinary shares held by other shareholders are repurchased. Subsequent to the exercise, there is an overall reduction in the shares in issue for the associate. In this case, there is no change to the investor's absolute shareholdings as the shares bought back are those of the other shareholders and not that of the investor. However, given the smaller share capital base after the share buy-back exercise, this results in an increase in the investor's shareholding interests relative to other shareholders. In substance, there has been an acquisition of "additional" interests in the associate, albeit with no consideration paid by the investor in this case. In this scenario, the consideration paid for the acquisition effectively came from the associate as the associate is the party that bought back the shares.

Conversely, consideration may also be transferred by the investor in another scenario. For instance, the associate may increase its paid up capital by undertaking a rights issue exercise to its existing shareholders. The investor subscribes for the rights in full in exchange for cash consideration paid. However, the rest of the shareholders may not take up their proportionate share of the rights. In this case, the investor's absolute shareholdings (in terms of the actual number of shares held in the associate) and its relative shareholdings to other shareholders increases, thereby resulting in an effective acquisition.

In all cases, the investor must analyze the nature of its shareholdings subsequent to the deemed acquisition of additional interests in the associate. The investor may continue to exert significant influence over the associate post-transaction. In this situation, the transaction will be an acquisition of additional interest in an associate while significant influence is still maintained. Conversely, the investor may gain control as a result of the deemed acquisition such that the associate becomes a subsidiary. In this case, the transaction will be accounted for as a business combination achieved in stages or business combination achieved without the transfer of consideration[15] under IFRS 3.

ILLUSTRATION 7B.6 Share-buyback by associate

On 1 January 20x3, Entity I acquired 30,000 shares which represents 30% interest in Entity A at consideration of $200,000. The book and fair value of the net assets of Entity A at the date of acquisition was $500,000 and $620,000, respectively.

On 1 July 20x4, Entity A embarked on a share buy-back exercise in which 25,000 of the shares held by the other investors are repurchased by Entity A at consideration of $250,000. The shares bought back are cancelled. Entity A assessed and concluded that it continues to have significant influence in Entity A after the share buy-back.

The following table shows the movement of net assets of Entity A from 20x3 to 20x4.

Changes in net assets of Entity A		$
1 Jan 20x3	Net assets at book value	500,000
	Net assets at fair value	*620,000*
	Profit for the year	200,000
	Asset revaluation for the year	50,000
	Fair value changes of financial instruments for the year	9,000
31 Dec 20x3/1 Jan 20x4	Net assets at book value	759,000
	Profit for period from 1 Jan 20x4 to 30 Jun 20x4	120,000
	Fair value changes of financial instruments from 1 Jan 20x4 to 30 Jun 20x4	5,000
30 Jun 20x4	Net assets at book value	884,000
	Less: Cash paid to repurchase shares	(250,000)
	Net assets at book value after share buyback	634,000
	Net assets at fair value	*700,000*
31 Dec 20x4	Profit for period from 1 Jul 20x4 to 31 Dec 20x4	300,000
	Fair value changes of financial instruments from 1 Jul 20x4 to 31 Dec 20x4	(2,000)
	Net assets at book value	932,000

Calculate the financial impact of the share-buyback and prepare the accounting entries in both the consolidated and separate financial statements.

Analysis

Calculate the changes in the effective shareholding interest subsequent to the share buy-back by Entity A and analyze the impact of the transaction

	Before transaction	After transaction
Shares held by Entity I	30,000	30,000
Shares in issue by Entity A	100,000	75,000
Percentage shareholdings	30%	40%

Subsequent to the share buyback, Entity I's shareholding interest in Entity A relative to other shareholders increases from 30% to 40%, that is, effectively there was a deemed acquisition. This is notwithstanding that there was no increase in terms of the absolute shareholdings held by Entity I, that is, it continues to hold 30,000 shares before and after the transaction.

In essence, it can be argued that Entity I's cost of the deemed acquisition of the 10% is essentially it share of the consideration paid by Entity A for the shares repurchased, that is, $75,000 which is derived as 30%*$250,000. Effectively, Entity I has exchanged it share of cash of $75,000 in Entity A in exchange for the additional 10% relative interest in the net assets of the associate.

Therefore, the deemed cost of the acquisition to be added to the investment in Entity A in Entity I's consolidated financial statements is the amount that Entity I has "paid" (via Entity A) to acquire the additional shareholding interest in Entity A of $75,000 (i.e., 30%*$250,000).

At the same time, Entity I will reduce the carrying value of the investment in Entity A in the consolidated financial statements by its share of the decrease in the net assets of Entity A following the cash consideration paid to the other shareholders of $75,000 (i.e., 30%*$250,000). Therefore, on a net basis, there is no change to the carrying value of the investment in Entity A at the point of the deemed acquisition.

In this case, as Entity I continues to have significant influence post transaction, Entity I will account for the deemed acquisition in accordance with the guidance discussed in the section on acquisition of additional interests in associate.

In Entity I's separate financial statements, there is no impact to the carrying value of investment in Entity A as there is no change to Entity I's absolute shareholding interest in Entity A. Accordingly, no accounting entries are effected in the separate financial statements.

Calculate the goodwill on acquisition of the separate tranches

	$	
1 st Tranche (Acquisition of 30% interest)		
Consideration paid	200,000	
Less: Fair value of net identifiable assets	(186,000)	(30%*620,000)
Goodwill	14,000	
2nd Tranche (Deemed acquisition of 10% interest)		
Deemed consideration paid	75,000	See explanation above.
Less: Fair value of net identifiable assets	(70,000)	(10%*700,000)
Goodwill	5,000	
Total goodwill	19,000	

Calculate the fair value adjustments arising from the transaction

$

1st Tranche (Acquisition of 30% interest)		
Proportionate share of fair value of net assets	186,000	(30%*620,000)
Proportionate share of book value of net assets	(150,000)	(30%*500,000)
Excess of fair value over net book value (Note 1)	36,000	
Amortization per year	7,200	
2nd Tranche (Deemed acquisition of 10% interest)		
Proportionate share of fair value of net assets	70,000	(10%*700,000)
Proportionate share of book value of net assets	(63,400)	(10%*634,000)
Excess of fair value over net book value (Note 2)	6,600	
Amortization per year	660	

Note 1: Excess of fair value of net book value relates to patented technology. This intangible asset is amortized over five years.

Note 2: Excess of fair value of net book value relates to trademark. This intangible asset is amortized over ten years.

Calculation of the share of results and other comprehensive income for FY2013 and FY2014

	$	
FY2013		
Share of associate's profits for the year	60,000	(30%*200,000)
Less: Amortization of intangible asset – patented technology	(7,200)	
	52,800	
Share of other comprehensive income		
– asset revaluation for the year	15,000	(30%*50,000)
– fair value changes for the year	2,700	(30%*9,000)
	17,700	
FY2014 – 1 Jan 20x4 up to 30 June 20x4		
Share of associate's profits for the period	36,000	(30%*120,000)
Less: Amortization of intangible asset – patented technology	(3,600)	(7,200/2)
	32,400	
Share of other comprehensive income		
– fair value changes for the period	1,500	(30%*5,000)
FY2014 – 1 Jul 20x4 to 31 Dec 20x4		
Share of associate's profits for the period	120,000	(40%*300,000)
Less: Amortization of intangible asset – patented technology	(3,600)	(7,200/2)
Less: Amortization of intangible asset – trademark	(330)	(660/2)
	116,070	

Share of other comprehensive income		
– fair value changes for the period	800	(40%*2,000)

Prepare accounting entries

In the separate financial statements

1 Jan 20x3	Dr Investment in associate	200,000	
	Cr Cash		200,000
	Being payment for 30% interest in associate		

In the consolidated financial statements

31 Dec 20x3	Dr Investment in associate	70,500	
	Cr Share of associate's profits		52,800
	Cr Share of associate's OCI		17,700
	Being equity accounting for the year		
30 June 20x4	Dr Investment in associate	33,900	
	Cr Share of associate's profits		32,400
	Cr Share of associate's OCI		1,500
	Being equity accounting for the period from 1 Jan 20x4 to 30 June 20x4		
	Dr Investment in associate (Note 3)	75,000	
	Cr Investment in associate (Note 3)		75,000
	Being deemed acquisition of additional interest in associate		
31 Dec 20x4	Dr Investment in associate	115,270	
	Dr Share of associate's OCI	800	
	Cr Share of associate's profits		116,070
	Being equity accounting for the period from 1 Jul 20x4 to 31 Dec 20x4		

Note 3: This is a set of memorandum accounting entries passed to reflect the deemed acquisition. There is no net impact to the carrying value of the investment in associate account.

Compute the balance in the investment in associate account

Investment in associate account		$
1 Jan 20x3	Payment for 30% interest in associate	200,000
31 Dec 20x3	Equity accounting for FY2013	70,500
30 Jun 20x4	Equity accounting for FY2014 – 1 Jan to 30 Jun 20x4	33,900

31 Dec 20x4	Equity accounting for FY2014 – 1 Jul to 31 Dec 20x4	115,270
31 Dec 20x4	Balance as at end	419,670

Analytical check on the investment in associate account

Investment in associate account	$	$	
Book value of net assets of associate as at 31 December 20x4			
– 30% interest	279,600		(30%*932,000)
– 10% deemed interest	93,200		(10%*932,000)
		372,800	
Goodwill			
– 30% interest	14,000		
– 10% deemed interest	5,000		
		19,000	
Unamortized fair value adjustments			
– 30% interest	21,600		(36,000 − (2*7,200))
– 10% deemed interest	6,270		(6,600 − 330)
		27,870	
		419,670	

ILLUSTRATION 7B.7 Participation of rights issue by investor resulting in control being obtained

On 1 January 20x5, Entity I acquired 25,000 shares which represents 25% interest in Entity A at consideration of $150,000. The book and fair value of the net assets of Entity A at the date of acquisition were $350,000 and $450,000, respectively.

On 31 December 20x5, Entity A issued additional shares with the consent of other shareholders to Entity I to raise additional financing for an impending acquisition. Specifically, 55,000 new shares were issued to Entity I in exchange for consideration of $200,000. Entity I assessed and concluded that it has obtained control in Entity A subsequent to the transaction.

The following table shows the movement of net assets of Entity A from 1 January 20x5 to 31 December 20x5.

Changes in net assets of Entity A		$
1 Jan 20x5	Net assets at book value	350,000
	Net assets at fair value	*450,000*
31 Dec 20x5	Profit for the year	150,000
	Effective portion of hedging instrument taken to OCI for the year	60,000
	Net assets at book value	560,000

Net assets at fair value	*600,000*
Additional cash injection	200,000
Net assets at book value	760,000
Net assets at fair value	*800,000*

The fair value of Entity A as at 31 December 20x5 is $920,000.

The extract of the financial statements as at 31 December 20x5 subsequent to the transaction is as follows:

	$
Assets	900,000
Less: Liabilities	*(140,000)*
Net assets	760,000
This is represented by:	
Share capital	425,000
Retained earnings	275,000
Hedging reserve	60,000
Net assets at book value	760,000

Calculate the financial impact of the issuance of additional shares on Entity I's shareholding interests and prepare the accounting entries in both the consolidated and separate financial statements. Ignore tax effects. Assume that non-controlling interests is carried at fair value at the date of acquisition in the financial statements of Entity I.

Analysis

Calculate the changes in the effective shareholding interest subsequent to the issuance of additional shares by Entity A and analyze the impact of the transaction

	Before transaction	After transaction
Shares held by Entity I	25,000	80,000
Shares in issue by Entity A	100,000	155,000
Percentage shareholdings	25%	52%

Subsequent to the issuance of the additional shares, Entity I's shareholding interests in Entity A increases from 25% to 52%. Entity I assessed that it has obtained control with 52%, that is, effectively there was an acquisition. As Entity I had 25% interest previously, this transaction is therefore accounted for as a step acquisition in accordance with IFRS 3. Non-controlling interests at the date of acquisition is 48%.

Calculate the goodwill on acquisition

	$	
Consideration paid	200,000	
Fair value of previously held interests	230,000	(25%*920,000)

Non-controlling interests at fair value	445,161	(48%*920,000)
	875,161	
Less: Fair value of net identifiable assets	(800,000)	
Goodwill	75,161	

Calculate the fair value adjustment arising from the transaction

	$
Fair value of net identifiable assets at date of acquisition	800,000
Less: Book value of net assets at date of acquisition	(760,000)
Excess of fair value over net book value (Note 1)	40,000

Note 1: Excess of fair value of net book value relates to patented technology. This intangible asset is amortized over 5 years.

Calculate the remeasurement gain on previously held interests

	$	
Fair value of previously held interests at the date of acquisition	230,000	(25%*920,000)
Add: Share of associate's OCI reclassified to profit or loss	15,000	(Note 2)
Less: Carrying value of previously held interests of 25% at date of acquisition	(197,500)	(Note 3)
Remeasurement gain (charged to profit or loss)	47,500	

Note 2: The share of Entity A's other comprehensive income that was recognized in Entity I's other comprehensive income is reclassified to profit or loss in accordance with paragraph 42 of IFRS 3. This is calculated as 25%*carrying value of $60,000 in the hedging reserves as at 31 December 20x5.

Note 3: This is derived as:

Investment in Entity A		$	
1 Jan 20x5	Balance as at beginning	150,000	
31 Dec 20x5	Equity accounting for FY2015	47,500	(See computation below)
31 Dec 20x5	Balance as at end	197,500	

Calculation of the share of profit and other comprehensive income for FY2015

	$	
FY2015		
Share of associate's profits for the year	37,500	(25%*150,000)
Less: Amortization of intangible asset – patented technology	(5,000)	((25%*(450,000-350,000))/5^)
	32,500	
Share of associate's OCI	15,000	(25%*60,000)

^ The excess of fair value of net book value which was determined on acquisition of the Entity A on 1 January 20x5 relates to patented technology and the estimated useful life was previously determined to be five years.

Prepare accounting entries

In the separate financial statements

1 Jan 20x5	Dr Investment in associate	150,000	
	Cr Cash		150,000
	Being payment for 25% interest in associate – Entity A		
31 Dec 20x5	Dr Investment in associate	200,000	
	Cr Cash		200,000
	Being payment for additional shares issued in Entity A		
	Dr Investment in subsidiary	350,000	
	Cr Investment in associate		350,000
	Being reclassification of investment in associate to investment in subsidiary with control being obtained		

In the consolidated financial statements

31 Dec 20x5	Dr Investment in associate	47,500	
	Cr Share of profit in associate		32,500
	Cr Share of OCI in associate		15,000
	Being equity accounting for the year		
31 Dec 20x5	Dr Share capital	425,000	
	Dr Retained earnings	275,000	
	Dr Hedging reserve	60,000	
	Dr Goodwill	75,161	
	Dr Intangible asset – patented technology	40,000	
	Dr Share of Entity A's OCI	15,000	
	Cr Investment in subsidiary (Note 3)		397,500
	Cr Remeasurement gain (profit or loss)		47,500
	Cr Non-controlling interests (Note 4)		445,161
	Being elimination of share capital and pre-acquisition reserves with control being obtained over Entity A		

Note 3: The carrying value of investment in subsidiary which is eliminated on preparation of the consolidated financial is derived as the sum of the cost of investment of $350,000 in the separate financial statement and the equity accounted share of profits and OCI of Entity A of $47,500 prior to it becoming a subsidiary.

Note 4: Non-controlling interests are recognized at fair value. They are computed by applying the proportionate interest of non-controlling interest to the fair value of Entity A as an entity, that is, 48%*$920,000.

DEEMED DISPOSALS

Conversely, an associate may issue additional shares to other shareholders or even new investors apart from the investor itself. This results in a dilution of the investor's relative interests in the associate as compared to other shareholders notwithstanding that its absolute shareholdings (in the number of shares held in the associate) has not changed. In substance, this is effectively a disposal of the investor's interest in the associate. Subsequent to the issuance of the additional shares, the investor may assess that it continues to have significant influence and the associate remains as an associate of the investor. In this case, the transaction constitutes a partial disposal of associate while significant influence is maintained. Conversely, the additional shares issued by associate may severely dilute the investor's interest such that significant influence is lost. In this case, the investor will have to account for this transaction as a disposal with a retained interest in a financial asset as described in the section above.

Inevitably, deemed disposals which result in a reduction in stake in the associate will give rise to gains or losses which are referred to in practice as "dilution gains or losses" or "gains or losses on deemed disposals." Consistent with the arguments set out under the section on partial disposal of associate while maintaining significant influence, by virtue of the fact that the associate is not part of the group (as defined in IFRS 10), when an investor reduces its stake in an associate indirectly other than direct disposal of the shareholdings interests, it is not a transaction with owners. Rather, it is a transaction (i.e., disposal) with third parties. Accordingly, similar to gains or losses on disposal, we believe gains or losses on deemed disposal should also be accounted for in the profit or loss.

Additionally, the requirement in paragraph 25 of IAS 28 also applies in deemed disposal transactions. Specifically, the investor will have to "reclassify to profit or loss, the proportion of the gain or loss relating to the reduction in the ownership interests that had been previously recognized in other comprehensive income if that gain or loss would be required to be reclassified to profit or loss on the disposal of the related assets or liabilities". This was specifically discussed by the IFRIC in its May 2009 discussions. In the IFRIC Update, the IFRIC noted that there is no specific guidance on the recognition of a gain or loss resulting from a reduction in the investor's ownership interest resulting from the issue of shares by the associate. However, the IFRIC also noted that reclassification of amounts to profit or loss from other comprehensive income is generally required as part of determining the gain or loss on a disposal. Paragraph 19A of IAS 28 (now paragraph 25 of IAS 28 (2011)) applies to all reductions in the investor's ownership interest, regardless of the cause.

ILLUSTRATION 7B.8 Non-participation of associate's rights issue by investor

On 1 January 20x6, Entity I acquired 25,000 shares which represents 25% interest in Entity A at consideration of $75,000. The book value and fair value of the net assets of Entity A at the date of acquisition were $150,000 and $200,000, respectively.

On 31 December 20x6, Entity A embarked on a 2 for 5 rights issue exercise to raise additional funds for expansion. Entity I did not participate in the exercise but other shareholders did. A total of 20,000 new shares were issued in exchange for cash consideration of $100,000. Entity I's effective interest in Entity A was diluted after the transaction. Subsequent to assessment, Entity I concluded that it continues to have significant influence in Entity A after the rights issue.

The following table shows the movement of net asset position of Entity A from 1 January 20x6 to 31 December 20x6.

Changes in net assets of Entity A		$
1 Jan 20x6	Net assets at book value	150,000

	Net assets at fair value	*250,000*
31 Dec 20x6	Profit for the year	80,000
	Net assets at book value	230,000
	Net assets at fair value	*300,000*
	Additional cash injection	100,000
	Net assets at book value	330,000

Calculate the financial impact of the rights issue on the Entity I's shareholding interests and prepare the accounting entries in both the consolidated and separate financial statements. Ignore tax effects.

Analysis

Calculate the changes in the effective shareholding interest subsequent to the rights issue by Entity A and analyze the financial impact of the share buyback on Entity I

	Before transaction	After transaction
Shares held by Entity I	25,000	25,000
Shares in issue by Entity A	100,000	120,000
Percentage shareholdings	25%	21%

Subsequent to the rights issue, Entity I's relative shareholding interests in Entity A decreases from 25% to 21%, that is, effectively there was a disposal of 4% shareholding interests. This is notwithstanding that its absolute shareholding interests remains unchanged at 25,000 shares. As mentioned in the fact pattern, Entity I assessed that it continues to have significant influence after the transaction. Consequently, the transaction is accounted for as a disposal while significant influence is maintained.

In analyzing this transaction, there are, in essence two offsetting financial impacts to Entity I's shareholding interests in Entity A with the rights issue.

First, with the dilution of relative interests in Entity A from 25% to 21%, Entity I's effective share in the net assets of Entity A also reduces by 4%, that is, $14,800 which is derived as (25%-21%)/25%*the carrying value of the Entity A in the consolidated financial statements of Entity I at the date of deemed disposal of $92,500. Refer to the computation below for the carrying value of Entity A.

Second, with the increase in the net assets of Entity A from the consideration of $100,000 received from the rights issue, Entity I is entitled to 21% interest of the increase in the net assets, that is, $21,000 which is derived as 21%*$100,000.

The net impact of the above is a gain of $6,200 which is referred to as a gain on deemed disposal in practice.

Calculate the goodwill and fair value adjustments on acquisition of the associate

	$	
Consideration paid	75,000	
Less: Fair value of net identifiable assets	(50,000)	(25%*200,000)
Goodwill	25,000	
Proportionate share of fair value of net assets	50,000	

Proportionate share of book value of net assets	(37,500)	(25%*150,000)
Excess of fair value over net book value (Note 1)	12,500	
Amortization per year	2,500	

Note 1: Excess of fair value of net book value relates to patented technology. This intangible asset is amortized over 5 years.

Calculation of the Entity I's share of profit in Entity A for FY2016 prior to rights issue

	$	
FY2016		
Share of associate's profits for the year	20,000	(25%*80,000)
Less: Amortization of intangible asset – patented technology	(2,500)	
	17,500	

Calculation of investment in Entity A prior to the rights issue

Investment in Entity A		$
1 Jan 20x6	Cost of investment	75,000
31 Dec 20x6	Equity accounting for FY2016	17,500
31 Dec 20x6	Balance as at end	92,500

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements

From the perspective of the separate financial statements, there is no disposal as Entity I's absolute shareholdings interest in Entity A has not changed.

In the consolidated financial statements

	$	
Sales proceeds	–	
Less: Share of associate derecognized	(14,800)	((25%-21%)/25%*92,500)
Add: Share of proceeds from rights issue	21,000	(21%*100,000)
Gain on deemed disposal	6,200	

Prepare the accounting entries

In the separate financial statements

No entry required.

In the consolidated financial statements

31 Dec 20x6	Dr Investment in associate	6,200

	Cr Gain on deemed disposal	6,200
	Being gain on deemed disposal of investment in the consolidated financial statements	

Calculate the balance in the investment in associate in the consolidated financial statements post-deemed disposal and perform an analytical check

Investment in associate account		$
31 Dec 20x6	Balance prior to deemed disposal	92,500
31 Dec 20x6	Gain on deemed disposal	6,200
31 Dec 20x6	Balance as at end	98,700

Analytical check on the investment in associate account

Investment in associate account	$	
Book value of net assets of associate at 31 Dec 20x6	69,300	(21%*330,000)
Goodwill	21,000	((21%/25%)*25,000)
Unamortized fair value adjustments	8,400	((21%/25%)*(12,500 − 2,500))
	98,700	

However, if the fact pattern were to be amended such that a total of 30,000 new shares were issued at $150,000 instead of 20,000 new shares being issued for cash consideration of $100,000, Entity I's relative shareholding interests will be diluted to 19% from 25% and Entity I assessed that it had lost significant influence in Entity A as a result of the rights issue.

In this case, the operation of paragraph 22 of IAS 28 would require Entity I to discontinue the use of the equity method and recognize the retained interest of 19% in Entity A at fair value on 31 December 20x6 when significant influence is lost. Entity I will recognize in profit or loss any difference between the fair value of any retained interest and the carrying amount of the Entity A on 31 December 20x6 where the equity method was discontinued as shown below.

In the consolidated financial statements

	$
Sales proceeds	−
Less: Share of associate derecognized	(92,500)
Add: Fair value of 19% interest in Entity A*	80,000
Loss on deemed disposal	(12,500)

* Assume that the fair value of the financial asset of 19% interest in Entity A is valued at $80,000.

The accounting entry to be passed in the consolidated financial statements of Entity I would be:

31 Dec 20x6	Dr Investment in FVOCI asset	80,000	
	Cr Loss on deemed disposal		12,500
	Cr Investment in associate		92,500
	Being deemed disposal of interest in Entity A in the consolidated financial statements		

ACCOUNTING FOR ACQUISITION OF ADDITIONAL OR PARTIAL DISPOSAL OF INTERESTS IN THE SEPARATE FINANCIAL STATEMENTS

The discussions in the preceding sections have centered around the financial reporting effects of changes in ownership interests in the associates in the consolidated financial statements or stand-alone financial statements[16] of the investor. In this section, we will discuss the impact of such transactions on the separate financial statements of the investor.

Paragraph 10 of IAS 27 *Separate Financial Statements* allows an entity to account for its investments in subsidiaries, joint ventures and associates either (a) at cost, (b) in accordance IFRS 9; or (c) using the equity method as described in IAS 28 when it prepares separate financial statements.

In accordance with IFRS 9

When an associate or joint venture is acquired in stages or additional interests are procured, if the accounting policy of the investor is to account for the investment in accordance with IFRS 9, the accounting is straight-forward as any amounts paid for as consideration for additional interests is capitalized in the investment account and the entire investment is measured at fair value at each reporting period.

Cost Method

However, the question arises as to how the carrying value should be measured if the accounting policy for the measurement of these investments in the separate financial statements is the cost method.

As discussed in Chapter 8, cost is neither defined in IAS 27 nor in other IFRS Standards. However, the glossary[17] to IFRS Standards explains cost as "the amount of cash or cash equivalent paid or the fair value of the other consideration given to acquire an asset at the time of its acquisition or construction." The IFRIC in its May and July 2009 discussion specifically discussed how the initial carrying value of an equity method investment should be determined. As set out in the July 2009 IFRIC Update, "the IFRIC noted that IFRSs consistently require assets not measured at fair value through profit or loss to be measured at initial recognition at cost. Generally stated, cost includes the purchase price and other costs directly attributable to the acquisition or issuance of the asset such as professional fees for legal services, transfer taxes, and other transaction costs. Therefore, the cost of an investment in an associate determined in accordance with paragraph 11 of IAS 28 (now paragraph 10 in IAS 28 (2011)) comprises its purchase price and any directly attributable expenditures necessary to obtain it."

Accordingly, we are of the view that when the cost method is adopted, in cases where an associate or joint venture is acquired in stages or additional interests are procured, the cost of investment in the associate or joint venture is accounted for as the aggregate amount of consideration given in exchange for the various tranches of equity interests plus any acquisition-related costs.

To the extent that the initial tranche of investment is accounted for as fair value through other comprehensive income financial asset for which fair value changes are taken to other comprehensive income, the cumulative changes in fair value recognized in other comprehensive income is reversed through profit or loss to restate the initial tranche of investment back to cost when significant influence is obtained with the acquisition of the subsequent tranche in the separate financial statements.

Conversely, if the initial tranche of investment is measured at fair value through profit and loss account, the fair value changes previously recognized in retained earnings are reversed through profit or loss to restate the initial investment back to cost when significant influence is obtained with the acquisition of the subsequent tranche.

The rationale for reversing the fair value adjustments through either other comprehensive income or retained earnings to reinstate the accounting for the investment back to original cost is because such adjustments are neither part of

consideration given in exchange for the investment nor acquisition costs as envisaged by the IFRIC discussion. Accordingly, these adjustments will have to be unwound to restate the carrying value of the underlying investment back to its "true" cost, that is, the fair value of the consideration given up before the amount paid for the subsequent tranche is added to it.

In the case of partial disposal of the investment in associate and joint venture, IAS 27 is also silent on the accounting treatment for the derecognition of the interests disposed. Consistent with the arguments set out in the sections above, we believe that symmetrical accounting treatment should be accorded in the separate financial statements that is, the proportionate cost of investment of the associate disposed recognized in the separate financial statements should be derecognized with the gain or loss on disposal recognized in the profit or loss. In case the investor loses significant influence, the entire carrying value of the investment in the associate or joint venture should be derecognized.

Equity Method

As discussed above, IAS 28 is silent on the accounting treatment for piecemeal acquisition of associates and acquisition of additional interests in associate while maintaining significant influence consequently; this has resulted in different acceptable variants of accounting treatment in piecemeal acquisition of associate.

However, if the investor elects to account for the investment in associate and joint venture using the equity method as described in IAS 28 in its separate financial statements, it is our view that the investor should apply the accounting treatment that it had elected in the consolidated financial statements to its separate financial statements.

The discussions above would apply to direct acquisition or disposal of additional interests. In the case of indirect or deemed acquisitions or disposals of interests, care must be taken to analyze the transactions to determine if there is any accounting impact in the separate financial statements. Generally, if there is no change to the absolute interests held by the investor, there should be no corresponding accounting impact in the separate financial statements.

Refer to the accounting entries in the illustrations above for the demonstration of the accounting impact in the separate financial statements.

APPENDIX 7C

Changes in Ownership Interests for Joint Arrangements

Paragraphs 13 and 19 of IFRS 11 require an entity to make a reassessment in 2 specific aspects when facts and circumstances change. They are namely:

1. Whether the entity continues to have joint control over the joint arrangement
2. Whether the type of joint arrangement in which the entity is involved in (either joint operation or joint venture) has changed

Therefore, when the ownership interests in the joint arrangement changes, the entity have to re-evaluate the nature of its involvement in the joint arrangement post-transaction. In the following section, the accounting treatment when ownership interest in joint arrangements changes is discussed.

CHANGES IN OWNERSHIP INTERESTS IN JOINT OPERATIONS

Acquisition of Interests in Joint Operations

Instead of establishing a joint operation with other joint operators from inception, an entity may elect to obtain joint control by acquiring an interest in an existing joint operation. For instance, an entity may acquire a stake in the joint operation from its existing joint operators. As part of this transaction, the contractual agreement is amended to require unanimous consent from all parties including the entity on decisions over the relevant activities pertaining to the joint operation.

When the activities of the joint operation constitutes a business as defined in IFRS 3, paragraph B33A of IFRS 11 requires an entity that acquires an interest in the joint operation to apply all the principles on accounting for business combinations set out in IFRS 3 and other IFRS[18] to the extent of its share in the joint operation. In other words, the entity is required to apply acquisition accounting in its financial statements based on its share of assets and liabilities in the joint operation[19].

Acquisition of an interest in a joint operation does not meet the definition of a business combination in IFRS 3 as the entity purchasing the interest does not obtain control of the joint operation. However, the Board is persuaded that acquisition accounting is the most appropriate method to account for such transactions when the underlying joint operation meets the definition of business under IFRS 3. This is because the Board is of the view that goodwill, when present, should be separately recognized and the accounting requirements set out in IFRS 3 and other IFRSs provide a comprehensive and consistent basis for accounting for acquisitions of businesses.

Paragraph B33A of IFRS 11 further sets out a list of non-exhaustive principles in IFRS 3 that applies for acquisition of interests in joint operations. They are:

(a) measuring identifiable assets and liabilities at fair value, other than items for which exceptions are given in IFRS 3 and other IFRSs;

(b) recognizing acquisition-related costs as expenses in the periods in which the costs are incurred and the services are received, with the exception that the costs to issue debt or equity securities are recognized in accordance with IAS 32 *Financial Instruments: Presentation* and IFRS 9;

(c) recognizing deferred tax assets and deferred tax liabilities that arise from the initial recognition of assets or liabilities, except for deferred tax liabilities that arise from the initial recognition of goodwill, as required by IFRS 3 and IAS 12 *Income Taxes* for business combinations;

(d) recognizing the excess of the consideration transferred over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed, if any, as goodwill; and

(e) testing for impairment a cash-generating unit to which goodwill has been allocated at least annually, and whenever there is an indication that the unit may be impaired, as required by IAS 36 *Impairment of Assets* for goodwill acquired in a business combination.

Illustration 7C.1, which is adapted from IE 53 that accompanies IFRS 11, demonstrates the application of the principles above.

ILLUSTRATION 7C.1 Acquisition of interests in a joint operation

Three companies, Alpha, Bravo and Charlie exercise joint control over Joint Operation Delta. Their ownership interests in Joint Operation Delta are 40%, 30% and 20% respectively. The remaining interest of 10% is held by Company Golf. The activity of Joint Operation Delta constitutes a business, as defined in IFRS 3 *Business Combinations*.

On 1 January 20x7, Company Echo acquires Company Alpha's 40% ownership interest in Joint Operation Delta at cash consideration of $300,000. Acquisition-related costs amounted to $50,000. Subsequent to the transaction, Company Alpha ceased to be and Company Echo became a joint operator.

The contractual arrangement between the parties establishes that Company Echo's shares in several assets and liabilities differ from its 40% ownership interest in Joint Operation Delta.

The following table sets out Company Echo's share in the assets and liabilities related to Joint Operation Delta as stipulated in the contractual arrangement between the parties. Company Echo's share of the net carrying value of the assets and liabilities on 1 January 20x7 amounted to approximately $132,000.

A valuation was performed and the fair values of the respective assets and liabilities of the Joint Operation Delta as at the date of acquisition on 1 Jan 20x7 are included in the table below. Corporate tax rate is 20%.

Assets/liabilities	Company Echo's share in contractual agreement	Fair value (100%) at 1 Jan 20x7 ($'000)
Property, plant and equipment	48%	288
Intangible assets (excluding goodwill)	90%	80
Accounts receivable	40%	210
Inventory	40%	175
Retirement benefit obligations	15%	(80)
Accounts payable	40%	(120)
Contingent liabilities	56%	(93)
		460

Company Echo has subsidiaries and prepares both consolidated and separate financial statements.

Calculate the financial impact of the acquisition of interest in Joint Operation Delta on Company Echo's consolidated and separate financial statements and prepare the accounting entries for the transaction.

Analysis

Company Echo will recognize its share of the assets and liabilities in Joint Operation Delta resulting from the contractual arrangement in both its separate and consolidated financial statements. Specifically, on the acquisition of the interest in Joint Operation Delta, Company Echo applies the principles on business combination accounting in IFRS 3 and other IFRSs for identifying, recognizing, measuring and classifying the assets acquired, and the liabilities assumed. However, in doing so, Company Echo does not apply principles in those IFRS Standards that conflict with the guidance in IFRS 11. Therefore, Company Echo recognizes, and measures only its share in each of the assets that are jointly held and its share in each of the liabilities that are incurred jointly, as stated in the contractual arrangement. The share of assets and liabilities of the other parties in Joint Operation Delta are not included in both the consolidated and separate financial statements of Company Echo.

Calculate Company Echo's share of the fair value of assets and liabilities in Joint Operation Delta on 1 January 20x7

Assets/liabilities	Company Echo's contractual share	Fair value (100%) at 1 Jan 20x7 ($'000)	Company Echo's share ($'000)
Property, plant and equipment	48%	288	138
Intangible assets (excluding goodwill)	90%	80	72

Accounts receivable	40%	210	84
Inventory	40%	175	70
Retirement benefit obligations	15%	(80)	(12)
Accounts payable	40%	(120)	(48)
Contingent liabilities	56%	(93)	(52)
			252
Deferred tax liability (Note 1)			(24)
			228

Note 1: Deferred tax liability is derived as follows:

	$'000
Fair value of identifiable assets and liabilities	252
Less: Carrying value of assets and liabilities	(132)
Excess of fair value over carrying value	120
Tax rate	20%
Deferred tax liability	24

Calculate the goodwill on acquisition of interest in the joint operation

	$'000
Consideration paid	300
Less: Fair value of net identifiable assets	(228)
Goodwill	72

Prepare the accounting entries

In the separate and consolidated financial statements of Company Echo

		$'000	$'000
1 Jan 20x7	Dr Property, plant and equipment	138	
	Dr Intangible asset	72	
	Dr Goodwill	72	
	Dr Accounts receivable	84	
	Dr Inventory	70	
	Cr Retirement benefit obligation		12
	Cr Accounts payable		48

Cr Contingent liabilities		52
Cr Deferred tax liability		24
Cr Cash at bank		300

Being acquisition of interest in joint operation

Dr Transaction costs – profit or loss	50	
Cr Cash at bank		50

Payment for transaction costs

However, IFRS 11 sets out an exception to the principle above. If the joint operators including the entity that acquires the interest in the joint operation are under the common control of the same ultimate controlling parties or parties both before and after the acquisition and that control is not transitory, the accounting treatment set out above will not apply.

Acquisition of Additional Interests in Joint Operations

After joint control has been obtained, a joint operator may acquire additional interests in that joint operation without gaining control. In other words, the joint operator continues to exercise joint control with other joint operators after the acquisition of the additional interests.

If the joint operation meets the definition of business under IFRS 3, the joint operator is required to apply acquisition accounting in respect of the additional interests acquired in accordance with paragraph 21A of IFRS 11. Consistent with the approach in accounting for initial acquisition of interests in joint operations as discussed above, the joint operator applies the accounting guidance in IFRS 3 and other IFRSs pertaining to business combinations that does not conflict with the requirements of IFRS 11. Paragraph B33C of IFRS 11 further stipulates that previously held interests in such cases are not remeasured.

The rationale behind this accounting treatment for the previously held interests is because the Board is of the view that acquisition of additional interests in a joint operation (that is a business) that is already jointly controlled by its joint operators is analogous to an acquisition of additional interests in a business that is already controlled by its acquirer. Specifically, preexisting interests in equity transactions under paragraph 23 of IFRS 10 are not remeasured. Accordingly, the Board is of the view that paragraph 23 of IFRS 10 which sets out the accounting treatment for changes in ownership interests in which the parent maintains control should be applied by analogy to acquisitions of additional interests in joint operations for which joint control is maintained.

ILLUSTRATION 7C.2 Acquisition of additional interests in a joint operation after joint control is obtained

Assume the same base facts as set out in Illustration 7C.2. On 1 June 20x8, Company Echo acquired an additional 10% interest in Joint Operation Delta from Company Bravo for $50,000. This is in addition to the 40% it already holds. As a result of the acquisition of the additional interest, the contractual agreement amongst the other joint operators was revised and Company Echo's share in the assets and liabilities in Joint Operation Delta was increased as set out in the table below. Included in the table below are also the fair values of the respective assets and liabilities of the Joint Operation Delta as at 1 June 20x8. Company Echo continues to have joint control with Company Bravo and Charlie.

Assets/liabilities	Company Echo's original share	Company Echo's revised share	Fair value (100%) at 1 Jun 20x8 ($'000)
Property, plant and equipment	48%	50%	350
Intangible assets (excluding goodwill)	90%	90%	85

Accounts receivable	40%	55%	300
Inventory	40%	45%	275
Retirement benefit obligations	15%	30%	(120)
Accounts payable	40%	45%	(250)
Contingent liabilities	56%	56%	(93)
			547

Company Echo's incremental share of the net carrying value of the assets and liabilities on 1 June 20x8 amounted to approximately $20,000. Acquisition-related transaction costs amounted to approximately $12,000.

Calculate the financial impact of the acquisition of additional interest in Joint Operation Delta on Company Echo and prepare the accounting entries for the transaction.

Analysis

Company Echo applies acquisition accounting under IFRS 3 in respect of the additional interests acquired in accordance with paragraph 21A of IFRS 11. In particular, Company Echo recognizes in both its separate and consolidated financial statements on 1 June 20x8, the incremental increase in its share of the assets and liabilities in Joint Operation Delta in line with the revised contractual agreement. Similarly in this case, Company Echo's additional ownership interest of 10% does not correspond with its incremental share of assets and liabilities in Joint Operation Delta. Its previously held interests in the form of assets and liabilities previously recognized in its separate and consolidated financial statements arising from the first acquisition are not remeasured with this additional acquisition of interests.

Calculate Company Echo's incremental share of the fair value of the assets and liabilities in Joint Operation Delta on 1 June 20x8

Assets/liabilities	Co Echo's incremental share (%)	Fair value at 1 Jun 20x8 ($'000)	Co Echo's incremental share ($'000)
Property, plant and equipment	2%	350	7
Intangible assets (excluding goodwill)	–	85	–
Accounts receivable	15%	300	45
Inventory	5%	275	14
Retirement benefit obligations	15%	(120)	(18)
Accounts payable	5%	(250)	(13)
Contingent liabilities	–	(93)	–
			35
Deferred tax liability (Note 1)			(3)
			32

Note 1: Deferred tax is derived as follows:

$'000

Incremental share of fair value of identifiable assets and liabilities	35
Less: Incremental share of carrying value of assets and liabilities	(20)
Excess of fair value over carrying value	15
Tax rate	20%
Deferred tax liability	3

Calculate the goodwill on acquisition of additional interest in the joint operation

	$'000
Consideration paid	50
Less: Fair value of net identifiable assets	(32)
Goodwill	18

Prepare the accounting entries

In the separate and consolidated financial statements of Company Echo

		$'000	$'000
1 Jun 20x8	Dr Property, plant and equipment	7	
	Dr Goodwill	18	
	Dr Accounts receivable	45	
	Dr Inventory	14	
	Cr Retirement benefit obligation		18
	Cr Accounts payable		13
	Cr Deferred tax liability		3
	Cr Cash at bank		50
	Being acquisition of additional interest in joint operation		
	Dr Transaction costs – profit or loss	12	
	Cr Cash		12
	Payment for transaction costs		

Similarly, the exception described above will apply to acquisition of additional interests in joint operations if the joint operators including the entity that acquires the additional interest are under the common control of the same ultimate controlling parties or parties both before and after the acquisition and that control is not transitory.

Obtaining Control over a Joint Operation whose Activity constitutes Business

A joint operator may acquire additional interests in the joint operation that is a business such that it obtains control over the joint operation. In such a case, it is effectively a business combination achieved in stages. The transaction gives rise

to a significant change in the nature of and economic circumstances of the interest in joint operations such that the joint operator-joint operation relationship is replaced by a parent-subsidiary relationship. The joint operator has given up joint control in exchange for full control over the joint operation. The same treatment will apply when a party to the joint arrangement that has rights to the assets and obligations for the liabilities immediately before the acquisition obtains control over the joint operation (Paragraph 42A of IFRS 11).

Accordingly, such transaction is accounted for as a business combination achieved in stages as discussed in Chapter 7. As set out in paragraph 42A of IFRS 11, the entire previously held interests in the form of the share of assets and liabilities in the joint operation recognized in the joint operator's financial statements immediately before control is obtained is remeasured to fair value[20] at the date where control is obtained. The resulting gain or losses is recognized in profit or loss. Similarly, any amount that was previously recognized in other comprehensive income in respect of the joint operator is recognized on the same basis as would be required if the joint operator had disposed directly of the previously held equity interests. Goodwill is calculated based on the fair value of the remeasured previously held interests and any additional net identifiable asset that is recognized at the date where control is obtained. Refer to Chapter 7 for a more detailed explanation of the accounting treatment and Illustration 7C.3 for the financial reporting impact.

page 616

ILLUSTRATION 7C.3 Obtaining control of a joint operation whose activity constitutes a business

Company X and Y are joint operators in a joint operation set up to mine for oil and gas in Country A. Each company has 50% rights to all the assets, liabilities, revenue generated by and expenses incurred in the joint operation. The joint operation meets the definition of business under IFRS 3.

During the financial year, owing to a change in the laws and legislation in Country A, Company Y had to dispose its interests in the joint operation as it can no longer operate in the country as a joint operator. After evaluating the financial feasibility of the oilfield, Company X decided to purchase 50% ownership interest from Company Y at cash consideration $25 million. With the purchase and sale of ownership interests, the contractual agreement between Company X and Company Y was terminated and Company X obtained control of the joint operation.

The carrying values and fair values of the identifiable assets and liabilities of the joint operation as at the date of acquisition on 1 September 20x8 is set out in the following table. The fair value of the joint operation on 1 September 20x8 as a business is $50 million.

Assets/liabilities	Carrying value of assets/liabilities in joint operation ($'000)	Company X's share of carrying values (50%) ($'000)	Fair value (100%) at date of acquisition ($'000)
Property, plant and equipment	20,000	10,000	35,000
Intangible asset – concession rights	1,500	750	4,000
Inventory	800	400	1,200
Trade and other receivables	400	200	400
Trade and other payables	(250)	(125)	(250)
Provisions (including provision for restoration costs)	(100)	(50)	(230)
Loans payable	(2,000)	(1,000)	(2,000)
Contingent liabilities	–	–	(550)
	20,350	10,175	37,570
Unrecognized goodwill	–	–	12,430
	20,350	10,175	50,000

Assume that Company X has subsidiaries and prepares both separate and consolidated financial statements.

Calculate the financial impact of the step acquisition on Company X and prepare the accounting entries for the transaction. Ignore tax effects.

Analysis

Calculate the financial effect of the remeasurement of the previously-held interests

	$'000	
Fair value of business at the date of acquisition (100%)	50,000	**Note 1**
Co X's share of fair value of business	25,000	
Less: Co X's share of carrying value of assets in joint operation	(10,175)	
Goodwill on acquisition	14,825	

Note 1: The fair value of the business at the date of acquisition includes contingent liabilities and goodwill. This is because in the remeasurement of the previously held interests to fair value at the date where control is obtained, paragraph 41 of IFRS 3 requires the entire previously held interests in the joint operation to be remeasured to fair value.

Calculate the goodwill on acquisition

	$'000
Consideration paid	25,000
Fair value of previously held interests	25,000
	50,000
Less: Fair value of net identifiable assets	(37,570)
Goodwill on acquisition	12,430

Prepare the accounting entries

In the separate financial statements of Company X

		$'000	$'000
1 Sep 20x8	Dr Investment in subsidiary	35,175	
	Dr Trade and other payables	125	
	Dr Provisions	50	
	Dr Loans payable	1,000	
	Cr Property, plant and equipment		10,000
	Cr Intangible asset – concession rights		750
	Cr Inventory		400

	Cr Trade and other receivables		200
	Cr Cash at bank		25,000
	Being derecognition of share of assets and liabilities in joint operation and recognition of investment in subsidiary		

In the consolidated financial statements of Company X

		$'000	$'000
1 Sep 20x8	Dr Property, plant and equipment	35,000	
	Dr Intangible asset – concession rights	4,000	
	Dr Goodwill	12,430	
	Dr Inventory	1,200	
	Dr Trade and other receivables	400	
	Cr Trade and other payables		250
	Cr Provisions		230
	Cr Loans payable		2,000
	Cr Contingent liabilities		550
	Cr Investment in subsidiary		35,175
	Cr Remeasurement gain (profit or loss)		14,825
	Being accounting for step acquisition arising from control obtained over a joint operation whose activity constitutes business		

Note 1: Essentially, the remeasurement gain in the consolidated financial statements comprises of:

	$'000
Fair value uplift of previously held interests on assets and liabilities	8,885
Fair value uplift of previously held interests on unrecognized identifiable assets and liabilities	(275)
Fair value uplift of previously held interests on unrecognized goodwill	6,215
Net remeasurement gain in profit or loss	14,825

Losing Control with Retained Interest in Joint Operation

A parent may sell its interests in its subsidiary (that is a business) to another party such that it loses control. Simultaneously, the selling parent enters into a contractual agreement with that same party to control the business jointly. The other party may also contribute additional assets to the joint arrangement. The contractual agreement is amended to require unanimous consent from both parties in all decisions pertaining to the relevant activities of the business and both parties have rights to the assets and obligations to the liabilities in the joint operation after the transaction. In this scenario, the parent has lost control but obtained joint control over the business post-transaction.

In accounting for this type of transaction, a perceived conflict exists between the requirements of IFRS 10 relating to the accounting for loss of control of a subsidiary and the requirements of IFRS 11 pertaining to the accounting for contribution of assets to a joint operation.

IFRS 10 requires an entity that loses control of a subsidiary but retains an interest in the former subsidiary to account for that retained interest at fair value on the date where control is lost. The re-measurement of that retained interest to fair

value is included in calculating the gain or loss associated with the loss of control of the subsidiary. However, paragraph B34 of IFRS 11 stipulates that an entity that enters into a transaction with a joint operation such as a contribution of assets to a joint operation, in which that entity is a joint operator, is required to recognize gains or losses resulting from the transaction only to the extent of the other parties' interests in the joint operation. The rationale behind this is because such transaction is in essence conducted with the other parties in the joint operation. Accordingly, only the portion of the gains or losses pertaining to the other parties' interests should be recognized in the financial statements of the joint operator. This requirement runs counter to the requirement in IFRS 10 where no restriction is required of the gain or loss to the extent of other parties' interest.

page 619

This conflict is similar to that in IFRS 10 and IAS 28 of which the Board had issued amendments[21] to address the issue in September 2014. Pre-amended IAS 28 similarly requires an investor or joint venturer to restrict the recognition of the gain or loss arising from the contribution or sale of non-monetary assets to the associate or joint venture to the extent of unrelated interests. To address that conflict, the amendments require the entity to recognize full gains or losses with the retained interest remeasured at fair value when the assets contributed to the associate or joint venture meet the definition of business under IFRS 3. If the assets contributed do not qualify as business, partial gains or losses (i.e. restricted to the extent of unrelated interests) are recognized by the investor. The remaining gains or losses are eliminated against the carrying value of the investment in associate or joint venture recognized in the financial statements of the investor or joint venturer. Subsequent to the issuance of these amendments, the Board deliberated on issuing further amendments to address certain unintended consequences[22] arising from applying the amendments. However, the Board subsequently decided to consider all those issues comprehensively as part of a wider research project on the equity method of accounting. At the same time, they also deferred the effective date of the amendments so that entities would not need to change the way in which they apply IAS 28 twice in a short period.

Similarly, the Interpretations Committee also discussed on the accounting treatment for a parent losing control and obtaining joint control in the joint operation. However, the Interpretation Committee decided not to address the issue but instead, recommend to the Board to address this issue concurrently with the issue discussed in the preceding paragraph given the similarities between the two types of transactions.

Pending the Board addressing this conflict on a comprehensive basis, we believe that a similar approach to that of the Amendments to IFRS 10 and IAS 28 should be adopted for transactions in which the parent lost control but obtained joint control in the investee. Specifically, if the joint operation meets the definition of a business under IFRS 3, the entity should recognize the full gain or loss calculated in accordance with B98 to B99 of IFRS 10. The interest retained in this former subsidiary which now takes the form of the entity's interests in the rights to the assets and obligations for liabilities is recognized at fair value in full in the entity's financial statements. This approach is also consistent with the views of a number of the members in the Interpretations Committee as discussed in the March 2016 staff paper on remeasurement of previously held interests—loss of control for the IFRS Interpretations Committee Meeting.

A question arises in the measurement of the retained interest in the joint operation which now takes the form of individual lines of assets and liabilities recognized in the financial statements of the joint operator. Should IFRS 3 be applied in the measurement of the retained interest? Based on the current syntax of IFRS 3 and IFRS 11, it is not clear as to whether that Standard should be applied. In the absence of more specific guidance from the Board, it is our view that entities have an accounting policy choice whether IFRS 3 is applied. Illustration 7C.4 assumes that IFRS 3 is not applied.

ILLUSTRATION 7C.4 Losing control of subsidiary with retained interest in a joint operation

Company Zafron has a wholly-owned subsidiary, Company Sufron whose principal business is in coal exploration, development and production activities in Country Coal. On incorporation of the subsidiary back in 20x4, Company Zafron invested $20 million as initial investment.

page 620

On 1 January 20x9, Company Zafron sold 50% ownership interest in Company Sufron to Company Xena for cash consideration of $30 million. A joint operating agreement was drawn up between the Company Zafron and Company Xena. Specifically, all budgets and work programs going forward will require the unanimous consent of both companies. All the output produced by Company Sufron will be purchased by both companies on a predetermined ratio and both parties will share all costs incurred on the work programmes on an equal basis.

As part of the acquisition of interests in the joint operation, Company Xena is entitled to a share of assets and liabilities in the joint operation as set out in the table below. Also presented in the table are the carrying values and fair values of Company Sufron's assets and liabilities at the date of acquisition.

Assets/liabilities	Co Zafron's share after transaction	Co Xena's share after transaction	Carrying value in Co's Sufron's books ($'000)	Fair value as at date of acquisition ($'000)
Property, plant and equipment	65%	35%	55,000	70,000
Intangible asset (excluding goodwill)	50%	50%	20,000	35,000
Accounts receivable	60%	40%	850	850
Inventory	60%	40%	1,500	2,000
Retirement benefit obligations	75%	25%	(250)	(300)
Accounts payable	55%	45%	(400)	(400)
Provisions (including provision for restoration costs)	50%	50%	(2,000)	(2,500)
			74,700	104,650

Calculate the financial impact of the transaction on Company Zafron and prepare the accounting entries for the transaction. The effects of taxes are ignored for this illustration. Assume that Company Zafron continues to prepare consolidated financial statements after the disposal of Company Sufron.

Analysis

Calculate Company Zafron's share of fair value of assets and liabilities in Company Sufron subsequent to the disposal

Assets/liabilities	Co Zafron's share after transaction	Fair value as at date of acquisition ($'000)	Co Zafron's share of fair value as at date of acquisition ($'000)
Property, plant and equipment	65%	70,000	45,500
Intangible asset (excluding goodwill)	50%	35,000	17,500
Accounts receivable	60%	850	510
Inventory	60%	2,000	1,200
Retirement benefit obligations	75%	(300)	(225)
Accounts payable	55%	(400)	(220)
Provisions (including provision for restoration costs)	50%	(2,500)	(1,250)
		104,650	63,015

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements of Company Zafron

	$'000
Sales proceeds	30,000
Less: Cost of investment in separate financial statements (Note 1)	(10,000)
Gain on disposal	20,000

Note 1: In the separate financial statements, the carrying value of the investment derecognized is based on the proportionate share of interests disposed. This is derived as 50%*initial cost of $20 million.

In the consolidated financial statements of Company Zafron

	$'000
Sales proceeds	30,000
Add: Fair value of share of assets and liabilities retained (From above)	63,015
Less: Carrying value of net assets derecognized	(74,700)
Gain on disposal	18,135

Prepare the accounting entries

In the separate financial statements of Company Zafron

		$'000	$'000
1 Jan 20x9	Dr Cash at bank	30,000	
	Cr Investment in subsidiary		10,000
	Cr Gain on disposal# (Note 1)		20,000
	Being gain on partial disposal of subsidiary		
	Dr Property, plant and equipment	45,500	
	Dr Intangible asset	17,500	
	Dr Accounts receivable	510	
	Dr Inventory	1,200	
	Dr Gain on disposal# (Note 1)	1,685	
	Cr Retirement benefit obligations		225
	Cr Accounts payable		220
	Cr Provisions		1,250
	Cr Investment in subsidiary		10,000
	Cr Beginning retained earnings (Note 2)		54,700
	Being accounting for share of assets and liabilities in joint operation		

Note 1: Sum of #= Gain on disposal of $18,135.
Note 2: This is derived as:

	$'000
Initial investment	20,000
Carrying value of net assets at 1 Jan 20x9	74,700
Post investment reserves from date of incorporation	54,700

In the consolidated financial statements of Company Zafron

No accounting entry required.

Note 1: No accounting entry is required as Company Zafron has already recognized its share of the fair value assets and liabilities in Company Sufron at 1 January 20x9 in its separate financial statements. These assets and liabilities will be included when the consolidated financial statements are being prepared.

Partial Disposal of Interests in Joint Operations Whilst Maintaining Joint Control

An existing joint operator may partially sell its interests in a joint operation to another party while continuing to maintain joint control. The purchaser may become a joint operator if the contractual agreement is amended to require unanimous consent from all parties including the purchaser on decisions relating to the relevant activities of the joint operation. Conversely, the purchaser may become a party to the joint operation in which it merely participates in the joint operation without having joint control.

IFRS 11 is silent as to how such partial disposal of interests to the rights to assets and obligations to liabilities in the joint operation whilst joint control is maintained should be accounted for and whether a gain or loss on disposal should be recognized in this type of transaction.

Whilst a partial disposal of a subsidiary that does not result in the parent losing control is accounted for as an equity transaction under IFRS 10, consistent with the scenario in which an investor partially disposes its interests in an associate, we do not believe that the principles in IFRS 10 can be extended to that of a partial disposal of interests in a joint operation where the joint operator does not lose joint control. The rationale is because like an associate, the joint operation is not part of the group as defined in IFRS 10. Therefore, the partial disposal of interests in the joint operation is not a transaction with equity owners. Instead, it is a transaction with 3rd parties. Accordingly, the proportionate share of the assets and liabilities disposed should be derecognized with the gain or loss on disposal recognized in the profit or loss. This argument is further augmented by paragraph 48C of IAS 21 which requires the proportionate share of the cumulative amount of exchange differences recognized in other comprehensive income and accumulated in equity to be reclassified to profit or loss in the case of partial disposal of foreign operations. Partial disposal of foreign operations in this case would include partial disposal of interests in a foreign associate or joint arrangement (which includes joint operation). Accordingly, we believe that a gain or loss on disposal should be recognized in the profit or loss when a joint operator makes a partial disposal of its interests in a joint operation.

Specifically, the joint operator should:

1. Derecognize the rights to assets and obligations to liabilities in the joint operation on the basis of the percentage disposed. The assets derecognized would include the share of goodwill and the joint operator's share of unamortized portion of the fair value adjustments at the date of disposal.
2. Recognize the fair value of consideration received from the transaction, event or circumstance that result in the partial disposal of interests in the joint operation.
3. Reclassify to profit or loss[23] or transfer directly to retained earnings[24] if required by other IFRS, the amounts recognized in other comprehensive income in relation to the disposed interests.
4. Recognize any resulting difference as a gain or loss in profit or loss.
5. Account for the remaining interests in the joint operation in accordance with IFRS 11.

page 623

ILLUSTRATION 7C.5 Partial disposal of interests in joint operation whilst maintaining joint control

Companies Class, Gold and Kiss are joint operators in a joint operation. Company Class and Gold holds 33% equity interest each in the joint operation except Company Kiss which holds 34%. On 1 January 20x10, Company Class sold 10% interest in joint operation to Company Symphony for cash consideration of $90,000. In exchange for the cash consideration, Company Symphony is entitled to a share of the assets and liabilities in the joint operation. As a result of the transaction, Company Symphony becomes a party to the joint operation, i.e. it does not have joint control over joint operation with the other companies. Company Class continues to maintain joint control with the rest of the joint operators.

The table below sets out Company Symphony's interests in the assets and liabilities of the joint operation after the acquisition of the interests. Included in the table are also the carrying values of Company Class's share of the respective assets and liabilities of the joint operation as at 1 January 20x10 prior to the transaction.

Assets/liabilities	Co Class's share prior to sale of interests	Co Symphony's share after purchase of interests	Carrying value in Co Class's books at 1 January 20x10 before the transaction ($'000)
Property, plant and equipment	50%	15%	118
Intangible assets	90%	20%	70
Goodwill (Note 1)	100%	-	90
Accounts receivable	55%	18%	60
Inventory	45%	18%	80
Provisions	30%	20%	(14)
Accounts payable	45%	14%	(60)
			344

Note 1: The goodwill arose from the acquisition of the initial interest in the joint operation by Company Class in the past. As this goodwill is recorded in the financial statements of Company Class, Company Class is entitled to 100% of the goodwill recorded.

Calculate the financial impact of the partial disposal of interest in joint operation on Company Class and prepare the accounting entries for the transaction. Ignore tax effects. Assume that Company Class prepares both separate and consolidated financial statements.

Analysis

Calculate the share of assets and liabilities to be derecognized from the separate and consolidated financial statements of Company Class

Assets/liabilities	Co Class's share prior to sale of interests (a)	Co Symphony's share after purchase of interests (b)	Carrying value in Co Class's books at 1 January 20x10 ($'000) (c)	Carrying value of assets/liabilities to be derecognized ($'000) (d)=(b)/(a)*(c)
Property, plant and equipment	50%	15%	118	35
Intangible assets	90%	20%	70	16
Goodwill	100%	-	90	–
Accounts receivable	55%	18%	60	20
Inventory	45%	18%	80	32
Provisions	30%	20%	(14)	(9)
Accounts payable	45%	14%	(60)	(19)
			344	75

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate and consolidated financial statements of Company Class

	$'000
Sales proceeds	90
Less: Carrying value of net assets derecognized	(75)

	Gain on disposal		15

Prepare the accounting entries

In the separate financial statements of Company Class

1 Jan 20x10	Dr Cash at bank	90,000	
	Dr Provisions	9,000	
	Dr Accounts payable	19,000	
	Cr Property, plant and equipment		35,000
	Cr Intangible asset		16,000
	Cr Accounts receivable		20,000
	Cr Inventory		32,000
	Cr Gain on disposal (P/L)		15,000

Being accounting for partial disposal of interests in joint operation

In the consolidated financial statements of Company Class

No accounting entry required.

Note 1: No accounting entry is required as Company Class has derecognized the proportionate share of the assets and liabilities disposed in the joint operation in its separate financial statements. The effects of this entry will be included when the consolidated financial statements are being prepared.

Loss of Joint Control in Joint Operation with Retained Interest in Associate

An existing joint operator may sell its ownership interest partially as well as lose joint control of the joint operation by relinquishing its rights to jointly control the relevant activities of the joint operation with other joint operators. Joint control can also be lost when the contractual agreement between the joint operators is amended in a way such that the entity no longer has joint control. When the contractual agreement that gives rise to joint control is terminated, joint control ceases as well. Subsequent to the sale and losing joint control, the entity reassesses and may conclude that it has significant influence in the former joint operation. For instance, the entity continues to have a seat in the board of directors by virtue of its remaining shareholdings but its consent over decisions on the relevant activities of the joint operation is not required.

Similarly, IFRS 11 does not address how such situations should be accounted for in the financial statements of the selling entity. If the joint operation meets the definition of a business under IFRS 3, given that the joint operator has lost joint control over the joint operation but retained significant influence, we believe that an analogy can be drawn to the scenario where the parent lost control of its subsidiary but retained significant influence.

Although the composition of the group has not change in this case[25] after the transaction (as compared to the scenario where control over a subsidiary ceases), the entity no longer has joint control, i.e. its rights to assets and obligations for liabilities in the joint operation have ceased. Therefore, if the activities of the joint operation constitutes a business under IFRS 3, consistent with the spirit of IFRS 10, it follows accordingly that the carrying values of the entire assets and liabilities associated with the joint operation should be derecognized. A full gain or loss arising from the loss of joint control should be recognized in the profit or loss. The retained interest in the form of an investment in associate should be remeasured at fair value at the date where joint control is lost. This fair value is regarded as the cost on initial recognition of an investment in an associate for which equity accounting in accordance with IAS 28 will apply for purposes of subsequent measurement.

ILLUSTRATION 7C.6 Losing joint control in joint operation with retained interest in associate

Company X and Y are 50:50 joint operators in a joint operation that was established to mine for gold in Country Gold. Although the joint operation is structured through a separate vehicle, the terms of the contractual agreement stipulates specifically that each company has equal rights to the assets, liabilities, revenue generated and expenses incurred in the joint operation.

page 626

As a result of changes in laws and regulations in Country Gold, Company X decided that it was no longer economically viable to continue with the joint operation. Consequently, on 30 June 20x6, it sold 30% of its ownership interest in the joint operation to a third party, Company Z for cash consideration of $170 million.

As part of the transaction, Company Z will take over Company X's entire share of assets and liabilities in the joint operation. The contractual agreement was subsequently amended to exclude Company X from and include Company Z in having joint control with Company Y over the joint operation. Given Company X's expertise in gold mining, it continues to provide inputs on the operational aspect of the joint operation but does not have decision-making rights. Company X assessed that it retains significant influence based on its remaining 20% ownership interest after losing joint control.

As at 30 June 20x6, prior to the transaction, Company X has recognized its share of assets and liabilities in the joint operation in its separate and consolidated financial statements as set out in the table below.

Assets/liabilities	Carrying value at 30 June 20x6 ($'000)
Property, plant and equipment	280,000
Intangible assets – concession rights	25,000
Accounts receivable	800
Inventory	1,200
Other assets	400
Provisions	(750)
Accounts payable	(250)
Loans payable	(30,000)
Tax payable	(1,800)
	274,600

The fair value of Company X's retained interests of 20% amounted to $120 million as at 30 June 20x6.

Calculate the financial impact of the transaction on Company X and prepare the accounting entries for the transaction. Ignore tax effects. Assume that Company X prepares both separate and consolidated financial statements.

Analysis

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate and consolidated financial statements of Company X

	$'000
Sales proceeds	170,000
Add: Fair value of retained interest	120,000
Less: Carrying value of net assets derecognized	(274,600)
Gain on disposal	15,400

page 627

Prepare the accounting entries

In the separate financial statements of Company X

30 Jun 20x6	Dr Investment in associate	120,000	
	Dr Cash at bank	170,000	
	Dr Provisions	750	
	Dr Accounts payable	250	
	Dr Loans payable	30,000	
	Dr Tax payable	1,800	
	Cr Property, plant and equipment		280,000
	Cr Intangible asset – concession rights		25,000
	Cr Accounts receivable		800
	Cr Inventory		1,200
	Cr Other assets		400
	Cr Gain on disposal		15,400
	Being accounting for loss of joint control whilst retaining significant influence		

In the consolidated financial statements of Company X

No accounting entry required.

Note 1: No accounting entry is required as Company X has derecognized its share of the assets and liabilities of joint operation disposed and recognized the fair value of its retained interest in its separate financial statements. The effects of this entry will be included when the consolidated financial statements are being prepared.

Loss of Joint Control in Joint Operation with Retained Interest in Financial Asset

An entity may dispose a significant portion of its interests in the assets and liabilities in a joint operation and lose joint control by relinquishing its rights to jointly control the relevant activities of the joint operation with other joint operators. Following the disposal, it continues to retain some interest in the former joint operation.

Similarly, the entity derecognizes entirely its share of the assets and liabilities in the joint operation as it has lost joint control. If the retained interest in the former joint operation is a financial asset, the retained interest will be remeasured at fair value at the date where joint control is lost. This fair value of the retained interest is regarded as its fair value on initial recognition as a financial asset in accordance with IFRS 9. A gain or loss in respect of the difference between (1) the fair value of any retained interest and any proceeds received from disposing part of the interest in the joint operation and (2) the carrying amount of the assets and liabilities derecognized at the date when joint control was lost is recognized in the profit or loss.

The accounting principles set out above is similar to the scenario described in the preceding section where the joint operator loses joint control but retained significant influence in the former joint operation. Refer to the illustrative example above for the accounting treatment.

CHANGES IN OWNERSHIP INTERESTS FOR JOINT VENTURES

Just like a joint operator, a joint venturer may increase or decrease its ownership interests in its joint venture. As discussed in the preceding sections, a joint venturer accounts for its interests in a joint venture using the equity method in accordance with IAS 28 as it has rights to the net assets of the joint venture. Accordingly, accounting for changes in ownership interests in joint ventures will largely be similar to the accounting for changes in ownership interests in associates as discussed in Chapter 7.

Acquisition of Additional Interests in Joint Venture whilst Maintaining Joint Control

After obtaining joint control in a joint venture, the joint venturer may acquire additional equity interests in that joint venture without gaining control. In other words, the joint venturer continues to have joint control after the acquisition of the additional interests.

As discussed in Chapter 7, IAS 28 does not provide guidance on the accounting for such transactions. However, we believe that the transaction should be accounted for as follows:

1. Fair value of the consideration paid for the additional equity interests is added to the carrying value of the cost of investment in the joint venture.
2. Goodwill and the joint venturer's share of any new fair value adjustments arising from the acquisition of the additional interest is calculated based on the fair value of the consideration given in exchange for the additional interests and the joint venturer's incremental share of the fair value of identifiable assets and liabilities at the date of the additional purchase. The goodwill and unamortized portion of the fair value adjustments for the purchase of additional interests is aggregated with the goodwill and unamortized portion of the fair value adjustments for the existing investment at the end of the financial period.
3. No remeasurement of the previously held interest in the joint venture to fair value is performed. Instead, the joint venturer will continue to apply equity accounting in respect of the previously held interests by recognizing its share of profits and other comprehensive income to the extent of its previously held interests up to the date where the additional interests are acquired. Appropriate adjustments to the joint venturer's share of the profit or loss after acquisition of the additional interest should continue to be made in respect of the joint venturer's share of the fair value adjustments recognized at the date where the joint venture was first acquired (for example additional depreciation based on the fair value of the assets at the date of acquisition of the joint venture).
4. Subsequent to the acquisition of the additional interests, the joint venturer will recognize its share of results and other comprehensive income on the basis of its new shareholding interests in the joint venture. Adjustments pertaining to the amortization of the fair value adjustments related to both the initial acquisition and subsequent purchase of additional interests should continue to be made.

The rationale for the accounting treatment described above is attributable to the fact that there is no change in the nature of the underlying investment after the acquisition of the additional interests. The underlying investment continues to be a joint venture for which the joint venturer has joint control. As control was not obtained with the purchase of the additional interests, the transaction does not constitute a significant economic event that warrants a change in the classification and measurement of the investment as set out in IFRS 3. Hence, no remeasurement of the previously held interests to fair value is carried out and the cost accumulation approach where the fair value of the consideration paid for the additional interest is "accumulated" in the cost of investment in joint venture is most appropriate.

Illustration 7B.3 provides an example on the accounting for an acquisition of additional interest in an associate. This illustration will apply similarly to the acquisition of additional interests in a joint venture.

Obtaining Control of a Business that is a Joint Venture

A joint venturer may obtain control over its existing joint venture through the acquisition of additional interests such that the joint venture becomes a subsidiary. In this case, the joint venturer has effectively acquired a subsidiary in stages.

Paragraph 22(a) of IAS 28 specifically requires the joint venturer to discontinue the use of equity method and account for the investment in accordance with IFRS 3 and IFRS 10. Refer to Chapter 7 for a more detailed discussion of the accounting treatment for business combination achieved in stages.

Partial Disposal of Interests in Joint Ventures Whilst Maintaining Joint Control

A joint venturer may dispose partially its equity interests in a joint venture and continue to have joint control over the joint venture with the other joint venturers.

As discussed in Chapter 7, IAS 28 is silent as to how the cost of the partially disposed investment in joint venture should be measured and whether a gain or loss on disposal should be recognized in such transactions. Whilst IFRS 10 requires a partial disposal of a subsidiary that does not result in the parent losing control to be accounted for as an equity transaction, we believe that this principle cannot be extended to that of a partial disposal of a joint venture where joint control is not lost. The rationale is because the joint venture, as with an associate, is not part of the group as defined in IFRS 10. Therefore, a partial disposal of the joint venture is not a transaction with equity owners. Instead, it is a transaction (i.e. disposal transaction) with third parties. Accordingly, the proportionate cost of investment of the joint venture disposed should be derecognized with the gain or loss on disposal recognized in the profit or loss. This argument is further augmented by paragraph 25 of IAS 28 which provides guidance for transactions in which the joint venturer's ownership interests in a joint venture is reduced but the joint venturer continues to apply the equity method. Specifically, that paragraph requires the joint venturer to reclassify the proportion of the gain or loss (relating to the reduction in the ownership interests) that was previously recognized in other comprehensive income to profit or loss, if that gain or loss would be required to be reclassified to profit or loss on the disposal of the related assets or liabilities. Similarly, paragraph 48C of IAS 21 also requires the proportionate share of the cumulative amount of exchange differences recognized in other comprehensive income and accumulated in equity to be reclassified to profit or loss in the case of partial disposals of foreign operations. Partial disposal of foreign operations in this case would include partial disposal of interests in a foreign associate or joint arrangement (which includes joint venture). Therefore, we believe that a gain or loss on disposal should be recognized in the profit or loss when a joint venturer disposes its investment in the joint venture partially.

Specifically, the joint venturer should:

1. Derecognize the cost of investment in the joint venture on a proportionate basis on the basis of the percentage of shareholdings disposed. The cost of investment derecognized would include the proportionate share of goodwill and the joint venturer's share of unamortized portion of the fair value adjustments at the date of disposal.
2. Recognize the fair value of consideration received from the transaction, event or circumstance that result in the partial disposal.
3. Reclassify on a proportionate basis to profit or loss[26] or transfer directly to retained earnings[27] if page 630 required by other IFRS, the amounts recognized in other comprehensive income in relation to the disposed interests.
4. Recognize any resulting difference as a gain or loss in profit or loss.
5. Account for the remaining interests in the joint venture in accordance with IAS 28.

Illustration 7B.4 provides an example on the accounting for a partial disposal of interest in an associate whilst maintaining significant influence. This illustration will similarly apply to the partial disposal of interests in a joint venture whilst maintaining joint control.

Loss of Joint Control in Joint Venture with Retained Interest in Associate

A joint venturer may lose joint control over its joint venture but retains significant influence in that former joint venture. For instance, the contractual agreement for a joint venture for which the entity is a joint venturer lapses.

In this scenario, paragraph 24 of IAS 28 requires the entity to continue to apply the equity method subsequent to joint control being lost. The retained interest will not be remeasured.

The rationale for this accounting treatment is set out in paragraph 28 of the Basis to Conclusion to IAS 28. Although both the relationship between the investor and investee and the nature of the investment change in this scenario, both type of investments (i.e. investment in associate and investment in joint venture) continues to be accounted for using the equity method. As there is no change in the group boundaries (as associates and joint ventures are not part of the group within the definition of IFRS 10) and no change in the measurement requirement, the Board concluded that losing joint control and retaining significant influence in a former joint venture is not an event that warrants a remeasurement of the retained interest at fair value at the date when joint control is lost.

Paragraph 24 of IAS 28 further stipulates that the same accounting treatment also applies when the reverse happens, i.e. when an investment in an associate becomes an investment in joint venture.

When the loss of joint control is accompanied by an acquisition of additional interests or partial disposal of interests in the previous joint venture, the same accounting principles set out in Chapter 7 in respect of these areas will apply.

The financial reporting effects in this type of transaction will be similar to that set out in Illustration 7B.4 which explains the accounting treatment in a scenario where an investor disposes of its interests in its associate partially whilst maintaining significant influence.

Loss of Joint Control in Joint Venture with Retained Interest in Financial Asset

A joint venturer may dispose a significant portion of its interests in the investment in the joint venture such that it loses joint control but continues to retain some interest in the former joint venture.

As the investment ceases to be a joint venture, paragraph 22 of IAS 28 requires the entity to discontinue the use of the equity method from the date it loses joint control. If the retained interest in the former joint venture is a financial asset, the retained interest is remeasured at fair value at the date where joint control is lost. This fair value of the retained interest is regarded as its fair value on initial recognition as a financial asset in accordance with IFRS 9. The entity will recognize in profit or loss any difference between (1) the fair value of the retained interest and any proceeds received from disposing part of the interest in the joint venture and (2) the carrying value of the investment in the former joint venture at the date the equity method was discontinued.

page 631

Paragraph 22(c) of IAS 28 further requires the entity to account for all amounts previously recognized in other comprehensive income in relation to that investment on the same basis as would have been required if the entity had directly disposed of the related assets or liabilities when the entity discontinues the use of the equity method.

Illustration 7B.5 provides an example on the accounting in the scenario where an investor loses significant influence and retained an interest in the form of a financial asset. This illustration will similarly apply when a joint venturer loses joint control and retained an interest in the form of a financial asset.

page 632

APPENDIX 7D

Deemed Acquisitions and Business Combinations Achieved Without the Transfer of Consideration

Apart from direct acquisitions of equity interests in the acquiree, it is possible for an acquirer to gain control in an acquiree via changes in circumstances. Generally, no consideration is transferred in these transactions. Such form of changes in ownership interests is commonly known as deemed acquisitions in practice. IFRS 3 describes this as a business combination achieved without the transfer of consideration.

Deemed acquisitions may take place due to a number of reasons. Table 7D.1 sets out some scenarios that could give rise to such transactions.

Table 7D.1 Scenarios giving rise to deemed acquisitions

Deemed acquisitions

- Acquiree repurchasing its ordinary shares held by other shareholders in a sufficient quantity for an existing investor (the acquirer) to gain control
- Changes in composition of board of directors such that investor attains control
- Lapsing of minority veto rights that prevented the acquirer from controlling the acquiree previously
- Consensus between the acquirer and acquiree to combine their business solely via contractual agreement. The acquirer in this case neither holds equity interest in the acquiree nor transfers consideration in exchange for control in the acquiree[28].

Paragraph 43 of IFRS 3 requires such transactions to be accounted for using the acquisition method of accounting for business combinations. However, as no consideration is transferred in such cases (i.e. consideration transferred is nil), for the purpose of measuring goodwill or a gain on bargain purchase, paragraph B46 of IFRS 3 requires the acquirer to use the fair value of the acquirer's interest in the acquiree at acquisition date[29] in lieu of the acquisition-date fair value of the consideration.

Notwithstanding the requirement above, it should be noted that in deemed acquisitions transactions for which the acquirer has previously held interests, care should be taken not to double-count the fair value of the acquirer's interest in the acquiree. This is because the fair value of the acquirer's interest in the acquiree would have included the fair value of the acquirer's previously held equity interests in the acquiree at the date of acquisition. Hence, in the measurement of goodwill or gain on bargain purchase in the case of business combination achieved without the transfer of consideration, the fair value of the acquirer's interest in the acquiree is included only once. Therefore, the formula for measuring goodwill will evolve as follows:

page 633

Measurement of goodwill for general business combinations transactions

Goodwill as at acquisition date	=	Consideration transferred	+	Fair value of acquirer's previously held interests at acquisition date	+	Non-controlling interests in the acquiree	–	Fair value of net identifiable assets of acquiree at the date of acquisition

Measurement of goodwill for business combinations achieved without transfer of consideration

Goodwill as at acquisition date	=	Fair value of acquirer's interest in the acquiree at the date of acquisition	+	Non-controlling interests in the acquiree	–	Fair value of net identifiable assets of acquiree at the date of acquisition

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ILLUSTRATION 7D.1 Share buyback by associate resulting in deemed acquisition by investor

On 1 January 20x3, Entity X acquired 40,000 shares which represents 40% interest in Entity Y at cash consideration of $500,000. The book and fair values of Entity X's share of net assets of Entity Y as at 1 January 20x3 was $500,000.

On 30 June 20x6, Entity Y embarked on a share buy-back exercise on which 43,000 of the shares held by the other investors were repurchased at cash consideration of $250,000. The shares bought back were cancelled.

As a result of the share repurchase, Entity X has 70% effective interest in Entity Y. Entity X assessed and concluded that it has obtained control over Entity Y.

The summarized financial information of Entity Y from 20x3 to 20x6 is set out below.

Changes in net assets of Entity Y		$
1 Jan 20x4	Net assets at book value	2,000,000
20x4 to 20x5	Profit for the years from 20x4 to 20x5	800,000
31 Dec 20x5	Net assets at book value	2,800,000
30 Jun 20x6	Profit for the period	400,000
	Net assets at book value before share repurchase	3,200,000

	Cash paid for share buy-back	(250,000)
30 Jun 20x6	Net assets at book value after share repurchase	2,950,000
	Net assets at fair value	3,500,000

The fair value of Entity X as a business as at 30 June 20x6 is $3.8 million. Entity X's accounting policy is to measure non-controlling interests at fair value. The fair value of non-controlling interests as at the date of acquisition is $1.14 million.

Calculate the financial impact of the share buy-back on Entity X's shareholding interests and prepare the accounting entries in both the consolidated and separate financial statements of Entity X. Ignore tax effects.

Analysis

Calculate the changes in the effective shareholding interest subsequent to the share buy-back by Entity Y and analyze the impact of the transaction

	Before transaction	After transaction
Shares held by Entity X	40,000	40,000
Shares in issue by Entity Y	100,000	57,000
Percentage shareholdings	40%	70%

Subsequent to the share buy-back by Entity Y, Entity X's effective shareholding interests in Entity X increased from 40% to 70%. This is notwithstanding the fact that Entity X's absolute shareholding interest in Entity Y (40,000 shares) has not change before and after the transaction. Entity X assessed that it has obtained control with 70% as a result of the share buy-back i.e. there was effectively a deemed acquisition. As Entity X had 40% interest previously, this transaction is therefore accounted for as a step acquisition in accordance with IFRS 3. Non-controlling interests at the date of acquisition is 30%.

Calculate the goodwill on acquisition

	$	
Fair value of Entity X's interest in Entity Y	2,660,000	(70%*3,800,000)
Non-controlling interests at fair value	1,140,000	(30%*3,800,000)
	3,800,000	
Less: Fair value of net identifiable assets	(3,500,000)	
Goodwill	300,000	

Calculate the fair value adjustment arising from the transaction

	$
Fair value of net identifiable assets at date of acquisition	3,500,000
Less: Book value of net assets at date of acquisition	(2,950,000)
Excess of fair value over net book value (Note 1)	550,000

Note 1: Excess of fair value of net book value relates to trademark which is amortized over 8 years.

Calculate the remeasurement gain

	$	
Fair value at the date of acquisition	2,660,000	(70%*3,800,000)
Less: Carrying value of previously held interests	(1,280,000)	(Note 1)
Remeasurement gain (charged to profit or loss)	1,380,000	

Note 1: This is derived as:

Investment in Entity Y		$	
1 Jan 20x3	Balance as at beginning	500,000	
31 Dec 20x3 to 30 Jun 20x6	Equity accounting for FY20x3 to 30 Jun 20x6	780,000	(40%*(3,200,000 – 1,250,000*))
30 Jun 20x6	Balance as at end	1,280,000	

* Derived as $500,000/40%

In essence, the remeasurement gain comprises of two components. They are namely (1) the fair value of the 30% interest acquired in the deemed acquisition transaction and (2) the remeasurement gain associated with the previously held interests of 40%. Hence, the remeasurement gain can be analyzed as:

	$	
Fair value of the 30% interest acquired	1,140,000	(30%*3,800,000)
Remeasurement gain on previously held interest of 40%	240,000	((40%*3,800,000) – 1,280,000)
Remeasurement gain (net)	1,380,000	

Prepare accounting entries

In the separate financial statements of Company X

30 Jun 20x6	Dr Investment in subsidiary	500,000	
	Cr Investment in associate		500,000
	Being reclassification of investment in associate to investment in subsidiary with control being obtained		

In the consolidated financial statements of Company X

30 Jun 20x6	Dr Investment in subsidiary	780,000	
	Cr Beginning retained profits		780,000
	Being equity accounting from 20x3 to 30 June 20x6		
	Dr Share capital and reserves	2,950,000	
	Dr Goodwill	300,000	
	Dr Intangible asset – trademark	550,000	

Cr Investment in subsidiary		1,280,000
Cr Remeasurement gain (profit or loss)		1,380,000
Cr Non-controlling interests		1,140,000

Being elimination of share capital and pre-acquisition reserves with control being obtained over Entity Y

Analytical check on the balance in non-controlling interests

Balance in non-controlling interests	$	
NCI's share of carrying value of net assets as at 30 June 20x6	885,000	(30%*2,950,000)
NCI's share of goodwill	90,000	(30%*300,000)
NCI's share of intangible asset	165,000	(30%*550,000)
	1,140,000	

Deemed Disposals

Just like deemed acquisitions, a parent entity may reduce its shareholding interests in its subsidiary by way of changes in circumstances, other than via actual sale of its equity interests. This is known as deemed disposals in practice.

Deemed disposals may take place due to a number of reasons. Set out in Table 7D.2 are some circumstances that could give rise to such transactions.

Table 7D.2 Scenarios resulting in deemed disposals

Deemed disposals
• Parent does not subscribe or subscribes partially to the subsidiary's rights issue • Subsidiary issues ordinary shares upon the exercise of options held by third parties (e.g. employees on exercise of the vested employee share options) • Subsidiary issues additional ordinary shares to third parties other than the investor to raise funding • Changes in composition of the board of directors such that parent loses control • Conversion of convertible loans issued by subsidiary into ordinary shares by third party debt holders

As evident from the table above, the parent entity's absolute shareholding interest in the subsidiary may or may not change after the transaction. However, the relative shareholding interest to other investors will generally reduce after the transaction. In substance, there is a disposal of the parent's interest in the subsidiary. Accordingly, such transactions should be accounted for in accordance with the requirements of IFRS 10.

ILLUSTRATION 7D.2 Issuance of additional shares by subsidiary resulting in parent losing control

On 1 January 20x5, Entity P acquired 80,000 shares (which represents 80%) in Entity S at cash consideration of $1,500,000. The book value and fair value of the net assets of Entity S at the date of acquisition were $800,000 and $1,000,000 respectively.

On 1 January 20x9, Entity S issued 100,000 new shares at $1 each to raise additional funds for expansion. As Entity P did not subscribe to the new shares, its effective shareholding interest in Entity S was diluted after the transaction.

Upon assessment, Entity P concluded that it has lost control in Entity S after the shares issue. Although it has lost control, Entity P has assessed that it retains significant influence post-transaction. The fair value of its retained interest at

the date where it lost control (i.e. 1 January 20x9) is $2 million.

The following table shows the movement of net asset position of Entity S from 1 January 20x5 to 1 January 20x9.

Changes in net assets of Entity S		$
1 Jan 20x5	Net assets at book value	800,000
	Net assets at fair value	1,000,000
20x5 to 20x8	Profit for the years from 20x5 to 20x8	2,500,000
31 Dec 20x8	Net assets at book value	3,300,000
	Net assets at fair value	4,000,000
1 Jan 20x9	Cash received from share issuance	100,000
1 Jan 20x9	Net assets at book value after share issuance	3,400,000

Calculate the financial impact of the share issuance by Entity S on Entity P's shareholding interests and prepare the accounting entries in both the consolidated and separate financial statements of Entity P. Ignore tax effects.

Analysis

Calculate the changes in the effective shareholding interest subsequent to the share issuance by Entity S and analyze the impact of the transaction

	Before transaction	After transaction
Shares held by Entity P	80,000	80,000
Shares in issue by Entity S	100,000	200,000
Percentage shareholdings	80%	40%

Subsequent to the issuance of additional shares by Entity S, Entity P's relative shareholding interest in Entity S decreases from 80% to 40%. In substance, there is effectively a disposal of 40% shareholding interest in Entity S. This is notwithstanding the fact that Entity P's absolute shareholding interest remains at 80,000 shares post transaction. As Entity P has assessed that it has lost control but retained significant influence after the transaction, the transaction is accounted for as a disposal of subsidiary in accordance with paragraph 25 of IFRS 10. The remaining interest retained in the Entity S of 40% is recognized at fair value on the date when control was lost (i.e. 1 January 20x9) and this fair value is regarded as the cost of initial recognition in an associate.

Following from the discussion above, there is, essentially two offsetting financial impact from Entity P's perspective (in the consolidated financial statements of Entity P) as set out in the table below.

	$'000	
Loss on deemed disposal	(3,580)	((80%*3,400,000) + 700,000 + 160,000)
Fair value of retained interest	2,000	
	(1,580)	

First, as Entity P has lost control of Entity S, the assets and liabilities including non-controlling interests are derecognized. The loss on disposal comprises of Entity P's share (80%) of the assets and liabilities of $3.4 million, goodwill on acquisition of $700,000 as well as the carrying value of the fair value adjustment pertaining to intangible asset of $160,000 at the date where control is lost is derecognised as well. Refer to the computation below to derive the balances mentioned.

Second, given that Entity P has retained 40% in Entity S on 1 January 20x9, paragraph 25 of IFRS 10 requires Entity P to recognize the remaining 40% interest at fair value, amounting to $2 million.

The net impact of the above effects is a loss on deemed disposal of $1.58 million. This loss is recognized in the consolidated profit or loss account of Entity P. (Note: NCI's share of 20% of the assets and liabilities of Entity S as well as the balance in NCI are derecognized without any reclassification to the profit or loss account.)

In the separate financial statements of Entity P, there is no accounting impact. No disposal has taken place as Entity P's absolute shareholding interest in Entity S has remained unchanged.

Calculate Entity P's share of goodwill on acquisition

	$	
Consideration paid	1,500,000	
Less: Fair value of net identifiable assets	(800,000)	(80%*1,000,000)
Goodwill (Note 1)	700,000	

Note 1: Goodwill is assumed to be unimpaired on 1 January 20x9.

Calculate Entity P's share of fair value adjustment arising from the transaction

	$	
Fair value of net identifiable assets at date of acquisition	800,000	
Less: Book value of net assets at date of acquisition	(640,000)	(80%*800,000)
Excess of fair value over net book value (Note 1)	160,000	

Note 1: Excess of fair value of net book value relates to intangible asset with indefinite useful life. The intangible asset is not impaired on 1 January 20x9.

Calculate Entity P's share of change in net assets from date of acquisition to date where control is lost

	$	
Change in net assets from date of acquisition to date where control is lost	2,600,000	(2,500,000 + 100,000)
Entity P's share (80%)	2,080,000	(80%*2,600,000)

Prepare accounting entries

In the separate financial statements of Entity P

1 Jan 20x9	Dr Investment in associate	1,500,000	
	Cr Investment in subsidiary		1,500,000
	Being reclassification of investment in subsidiary to investment in associate with lost of control		

In the consolidated financial statements of Entity P

1 Jan 20x9	Dr Investment in associate	500,000	
	Dr Loss on deemed disposal	1,580,000	
	Cr Beginning retained profits (Note 1)		2,080,000

Being accounting for deemed disposal and beginning retained profits

Note 1: The credit entry is required to reinstate Entity P's share of profits generated by Entity S from the date of acquisition to the date where control is lost.

However, if we were to vary the scenario in Illustration 7D.2 above such that Entity S issues 24,000 instead of 100,000 new shares for $100,000. In this case, Entity P's interest is diluted from 80% to 65% after the transaction. Non-controlling interests in Entity S increases from 20% to 35%. It is assumed that non-controlling interests is carried at proportionate share of net identifiable assets.

Entity P assessed and concluded that it continues to have control in Entity S. In this case, as the dilution in shareholding interest does not result in Entity P losing control of Entity S, the transaction will be accounted for as an equity transaction in accordance with paragraph 23 of IFRS 10.

Specifically, Entity P will adjust the carrying amounts of its interests and the non-controlling interests to reflect the effects of the transaction on their relative interests in Entity S. The difference between the amount by which non-controlling interests is adjusted and the cash proceeds received from the share issuance exercise is recognized in equity and attributed to the shareholders of Entity P.

In computing the extent to which the carrying value of non-controlling interests is adjusted, a question invariably arises whether non-controlling interests' share of goodwill is required to be adjusted in equity transactions with non-controlling interests.

Insofar as IFRS 10 is concerned, the IFRS Standard is silent on the accounting treatment. However, it is our view that the proportion of the goodwill balance should be re-allocated between the parent entity and non-controlling interests when their relative interests in the subsidiary changes. This is regardless of whether non-controlling interests are measured at the proportionate share of net identifiable assets or fair value. It should be noted that the carrying value of the goodwill in the consolidated financial statements remains unchanged. The reallocation is manifested in the increase in the carrying value of non-controlling interests by the proportion of goodwill allocated to them.

The reason is because in the absence of doing so, the goodwill balance will not be reflective of the parent entity's ownership interests in the subsidiary after the change in the relative ownership interests. This will consequently have an impact when either an impairment loss on goodwill is recognized or when goodwill is derecognized when control over the subsidiary is lost. If goodwill is not re-allocated, the impairment loss on goodwill recognized or the gain/loss recognized upon the lost of control will not be reflective of the ownership interest applicable to that of the parent and the non-controlling interests. This same treatment is accorded to the carrying value of any fair value adjustments previously arising from the acquisition of the subsidiary at the date where relative ownership interests changes.

Hence, in this case, Entity P will reallocate 15% of the goodwill to non-controlling interests. This is illustrated below.

Calculate the changes in the effective shareholding interest subsequent to the share issuance by Entity S and analyze the impact of the transaction

	Before transaction	After transaction
Shares held by Entity P	80,000	80,000
Shares in issue by Entity S	100,000	124,000
Entity P's relative shareholding	80%	65%
NCI's relative shareholding	20%	35%

Calculate the balance in the non-controlling interests before the share issuance transaction

	$	
NCI's share of carrying value of net assets	660,000	(20%*3,300,000)

NCI's share of fair value adjustment – intangible asset	40,000	(20%*200,000)
	700,000	

Calculate the balance in the non-controlling interests after the share issuance transaction

	$	
NCI's share of carrying value of net assets	1,190,000	(35%*3,400,000)
NCI's original share of fair value adjustment – intangible asset	40,000	(20%*200,000)
	1,230,000	
Re-allocation of goodwill from Entity P	131,250	(15%/80%*700,000)
Re-allocation of fair value adjustment from Entity P	30,000	(15%/80%*160,000)
	1,391,250	

Calculate the change in the non-controlling interests

	$
NCI's balance before the share issuance	700,000
NCI's balance after the share issuance	1,391,250
Change in NCI balance	691,250

Calculate the loss on deemed disposal recognized as equity attributable to shareholders of Entity P

	$	
Share of net assets given up by Entity P	495,000	(15%*3,300,000)
Share of goodwill given up by Entity P	131,250	(From above)
Share of fair value adjustment given up by Entity P	30,000	(From above)
	656,250	
Less: Entity P's share of cash from share issuance	(65,000)	(65%*100,000)
	591,250	Note 1

Note 1: In essence, there are two offsetting financial impact to Entity P's shareholding interest in Entity S arising from the share issuance.

First, with the dilution of relative interests in Entity S from 80% to 65%, Entity P's effective share in the net assets (inclusive of goodwill and the fair value adjustment) of Entity S also reduces by 15% amounting to $656,250 as computed above.

Second, with the increase in the net assets of Entity S from the consideration of $100,000 received from the share issuance, Entity P is entitled to 65% interest of the increase in the net assets i.e. $65,000.

The net impact of the above is a loss of deemed disposal of $591,250 which is adjusted in equity in accordance with paragraph B96 of IFRS 10.

Prepare accounting entries

In the separate financial statements of Entity S

1 Jan 20x9	Dr Cash	100,000	
	Cr Share capital		100,000
	Being cash received from shares issued		

In the separate financial statements of Entity P

No entry required as there is no change in Entity P's absolute shareholding interests.

In the consolidated financial statements of Entity P

1 Jan 20x9	Dr Share capital and reserves	800,000		
	Dr Goodwill	700,000		
	Dr Intangible asset	200,000		
	Cr Investment in subsidiary		1,500,000	
	Cr Non-controlling interests		200,000	
	Being elimination of share capital, reserves and investment in subsidiary			
	Dr Beginning retained profits	500,000		
	Cr Non-controlling interests		500,000	
	Being NCI's share of profits up to 1 Jan 20x9 before share issuance			
	Dr Share capital	100,000		
	Dr Loss on deemed disposal – Equity	591,250		
	Cr Non-controlling interests		691,250	Note 1
	Being adjustment for changes in relative interests			

Note 1: Although goodwill has been re-allocated to the non-controlling interests upon the dilution in interests in Entity S, the carrying value of the goodwill in the consolidated financial statements of $700,000 remains unchanged.

Analytical check for non-controlling interests as at 1 January 20x9

	$	
NCI's share of carrying value of net assets on 1 Jan 20x9	1,190,000	(35%*3,400,000)
NCI's share of goodwill	131,250	(From above)
NCI's share of intangible asset	70,000	(35%*200,000)
	1,391,250	

APPENDIX 7E

Consolidated Cash Flow Statement Involving a Foreign Subsidiary

Scenario:

Co Y is a 90% owned subsidiary of SingCo. The functional currency of Co Y is the USD.

Exchange rates are as follows:	SGD to USD
On date of acquisition of Co Y, 1 Jan 20x3	2.1
Purchase of patents by Co Y, 1 Jan 20x2	2.2
Sale of undervalued inventory, 1 July 20x3	1.95
Purchase of fixed assets by Co Y, 1 Jan 20x4	1.9
Purchase of opening inventory during Dec 20x4	1.8
Purchase of closing inventory during Dec 20x5	1.64
1 Jan 20x5	1.78
Average rate for 20x5	1.68
31 Dec 20x5	1.6
Date of dividend declaration	1.65

Additional information:

- Assume that operating cash flows, sales, purchases, operating expenses, interest, and tax occur evenly throughout the year.
- Foreign Currency Translation Reserve (cumulative translation losses to 31 Dec 20x4) is a loss of $20,000
- Fair value of consideration transferred was $300,000 and fair value of non-controlling interests as at acquisition date was $30,000.
- Undervalued inventory at acquisition date was $20,000. Tax rate was 20%.
- Undervalued inventory was sold on 1 July 20x3
- There was no disposal of fixed assets during 20x5

Required:

(1) Translate the financial statements of Co Y for the year ended 31 Dec 20x5 to SGD.
(2) Prepare the consolidated cash flow statements for the year ended 31 Dec 20x5 in SGD.

The current financial statements of Co Y in USD are shown below:

Income Statement of Co Y for the year ended 31 Dec 20x5		USD	Rate	SGD
Sales		1,000,000		
Cost of Sales				
Opening inventory	160,000			
Purchases	800,000			
	960,000			
Less closing inventory	(240,000)			
Less Cost of Sales		(720,000)		
Gross profit		280,000		
Operating expenses		(50,000)		
Interest expense		(8,000)		
Depreciation		(40,000)		
Amortization of patents		(6,000)		
Profit before tax		176,000		
Tax expense		(100,000)		
Profit after tax		76,000		
Dividends declared		(20,000)		
Profit retained		56,000		
Retained earnings, 1 Jan 20x5		200,000		
Retained earnings, 31 Dec 20x5		256,000		

Statement of Financial Position as at 31 Dec 20x5		USD	Rate	SGD
Fixed assets, net book value		320,000		
Patents		60,000		
Inventory		240,000		
Accounts receivable		100,000		
Cash		10,000		
		730,000		
Accounts payable		374,000		
Share capital		100,000		
Retained earnings				
Pre-acquisition:	120,000			
Post-acquisition:	136,000			
		256,000		
Foreign Currency Translation Reserve (FCTR)				
		730,000		

The comparative statement of financial position of Co Y in USD are shown below:

Statement of Financial Position as at 31 December 20x4	USD
Fixed assets, net book value	240,000
Patents	66,000
Inventory	160,000
Accounts receivable	120,000

Cash	164,000
	750,000
Accounts payable	450,000
Share capital	100,000
Retained earnings	200,000
Foreign Currency Translation Reserve (FCTR)	
	750,000

The cash flow statement of Sing Co for the year ended 31 December 20x5 is as follows:

Statement of Cash Flows for the year ended 31 December 20x5

	Parent SGD
Net profit after tax	320,000
Add back/Less non-cash items	
Depreciation	124,000
Add/(less) decrease/(increase) in working capital	
Change in inventory	230,000
Change in accounts receivable	(45,000)
Change in accounts payble	78,930
Operating cash flows	707,930
Cash flows from (to) financing activities	
Dividends paid	(200,000)
Cash flows from investing activities	
Purchase of fixed assets	(340,000)
Change in cash and cash equivalents during 20x5	167,930
Cash and cash equivalents	
1 Jan 20x5	324,000
31 Dec 20x5	491,930

Solutions:

Income Statement of Co Y for the year ended 31 Dec 20x5		USD	Rate	SGD
Sales		1,000,000	1.68	1,680,000
Cost of Sales				
Opening inventory	160,000			
Purchases	800,000			
	960,000			
Less closing inventory	(240,000)			
Less Cost of Sales		(720,000)	1.68	(1,209,600)
Gross profit		280,000		470,400
Operating expenses		(50,000)	1.68	(84,000)
Interest expense		(8,000)	1.68	(13,440)
Depreciation		(40,000)	1.68	(67,200)
Amortization of patents		(6,000)	1.68	(10,080)
Profit before tax		176,000		295,680
Tax expense		(100,000)	1.68	(168,000)
Profit after tax		76,000		127,680
Dividends declared		(20,000)	1.65	(33,000)
Profit retained		56,000		94,680
Retained earnings, 1 Jan 20x5		200,000	Note 1	344,000
Retained earnings, 31 Dec 20x5		256,000	To BS	438,680

Statement of Financial Position as at 31 Dec 20x5		USD	Rate	SGD
Fixed assets, net book value		320,000	1.60	512,000
Patents		60,000	1.60	96,000
Inventory		240,000	1.60	384,000
Accounts receivable		100,000	1.60	160,000
Cash		10,000	1.60	16,000
		730,000		1,168,000
Accounts payable		374,000	1.60	598,400
Share capital		100,000	2.10	210,000
Retained earnings				
Pre-acquisition:	120,000		2.10	252,000
Post-acquisition:	136,000			186,680
		256,000	From I/S	438,680
Foreign Currency Translation Reserve (FCTR)			Residual	(79,080)
		730,000		1,168,000

Note 1: Reconstruct the statement of financial position as at 31 Dec 20x4 to determine the retained earnings in SGD at the beginning of the year

Statement of Financial Position as at 31 Dec 20x4	USD	Rate	SGD
Net assets	300,000	1.78	534,000
Share capital	100,000	2.10	210,000
Retained earnings	200,000		344,000
Foreign Currency Translation Reserve			(20,000)
	300,000		534,000

Statement of Financial Position as at 31 December 20x4	USD	Rate	SGD
Fixed assets, net book value	240,000	1.78	427,200
Patents	66,000	1.78	117,480
Inventory	160,000	1.78	284,800
Accounts receivable	120,000	1.78	213,600
Cash	164,000	1.78	291,920
	750,000		1,335,000
Accounts payable	450,000	1.78	801,000
Share capital	100,000	2.10	210,000
Retained earnings	200,000		344,000
Foreign Currency Translation Reserve (FCTR)			(20,000)
	750,000		1,335,000

Analysis of movements of assets and liabilities		USD	Rate	SED	
Fixed assets (FA)					
Balance, 1 Jan 20x5		240,000	1.78	427,200	
Purchases (actual rate)	BAL	120,000	1.63	195,600	
Depreciation	PL	(40,000)	1.68	(67,200)	NC
FCTR				(43,600)	NC
Balance, 31 December 20x5		320,000	1.60	512,000	
Patents					
Balance, 1 Jan 20x5		66,000	1.78	117,480	
Amortization of patents	PL	(6,000)	1.68	(10,080)	NC
FCTR				(11,400)	NC
Balance, 31 December 20x5		60,000	1.60	96,000	
Inventory					
Balance, 1 Jan 20x5		160,000	1.78	284,800	
Purchases	PL	800,000	1.68	1,344,000	NC
Cost of sales	PL	(720,000)	1.68	(1,209,600)	NC
FCTR				(35,200)	NC
Balance, 31 Dec 20x5		240,000	1.60	384,000	

Accounts receivable (AR)					
Balance, 1 Jan 20x5		120,000	1.78	213,600	
Sales	PL	1,000,000	1.68	1,680,000	NC
Collections	BAL	(1,020,000)	1.68	(1,713,600)	Cash
FCTR				(20,000)	NC
Balance, 31 Dec 20x5		100,000	1.60	160,000	
Accounts payable (AP)					
Balance, 1 Jan 20x5		450,000	1.78	801,000	
Purchases	PL	800,000	1.68	1,344,000	NC
Cash payments	BAL	(876,000)	1.68	(1,471,680)	Cash
FCTR				(74,920)	NC
Balance, 31 Dec 20x5		374,000	1.60	598,400	
Cash					
Balance, 1 Jan 20x5		164,000	1.78	291,920	
Fixed assets purchases	FA	(120,000)	1.63	(195,600)	
Collections	AR	1,020,000	1.68	1,713,600	
Cash payments	AP	(876,000)	1.68	(1,471,680)	
Operating expenses	PL	(50,000)	1.68	(84,000)	
Interest expense	PL	(8,000)	1.68	(13,440)	
Tax	PL	(100,000)	1.68	(168,000)	
Dividends	EQUITY	(20,000)	1.65	(33,000)	
FCTR				(23,800)	
Balance, 31 Dec 20x5		10,000	1.60	16,000	

Change in FCTR (add all the FCTR from each asset and liability)	(59,080)
FCTR, 1 Jan 20x5	(20,000)
FCTR, 31 Dec 20x5	(79,080)

NC: Non-cash items

Statement of Cash Flows for the year ended 31 December 20x5

		Subsidiary SGD		Parent SGD	Consolidation adjustments	Consolidated Cash Flow
Net profit after tax		127,680		320,000	(29,700)	417,980
Add back/Less non-cash items						
	Depreciation	67,200		124,000		191,200
	Amortization of patents	10,080				10,080
Add/(less) decrease/(increase) in working capital						
	Change in inventory	(134,400)	1,344,000-1,209,600	230,000		95,600
	Change in accounts receivable	33,600	1,680,000-1,713,600	(45,000)		(11,400)
	Change in accounts payable	(127,680)	1,344,000-1,471,680	78,930		(48,750)
Operating cash flows		(23,520)		707,930		654,710
Cash flows from (to) financing activities						
	Dividends paid	(33,000)		(200,000)	33,000	(200,000)
	Dividend paid to NCI				(3,300)	(3,300)
Cash flows from investing activities						
	Purchase of fixed assets	(195,600)		(340,000)		(535,600)
Change in cash and cash equivalents during 20x5		(252,120)		167,930		(84,190)
Cash and cash equivalents						
	1 Jan 20x5	291,920		324,000		615,920
	FCTR on cash	(23,800)				(23,800)
	31 Dec 20x5	16,000		491,930		507,930

PROBLEMS

P7.1 Simultaneous consolidation

Information pertaining to the group structure of A Ltd is as follows:

B Ltd

A Ltd acquired 70% of the share capital of B on 1 January 20x1.

Fair value of consideration transferred	$1,250,000
Share capital of B at date of acquisition	300,000
Retained earnings of B at date of acquisition	700,000

Net assets acquired were at fair values.

Fair value of non-controlling interests of B at date of acquisition	500,000

C Ltd

B Ltd acquired 60% of the issued share capital of C Ltd on 2 January 20x2.

Fair value of consideration transferred	$ 650,000
Share capital of C at date of acquisition	250,000
Retained earnings of C at date of acquisition	500,000

Net assets acquired were at fair values.

Fair value of non-controlling interests of C at date of acquisition 400,000

Extracts of the 20x4 financial statements of the companies are shown below:

	A	B	C
Profit before tax	$12,500,000	$ 750,000	$6,250,000
Tax expense	(2,500,000)	(150,000)	(1,250,000)
Profit after tax	$10,000,000	$ 600,000	$5,000,000
Dividends declared	(5,000,000)	(300,000)	(500,000)
Profit retained for the year	$ 5,000,000	$ 300,000	$4,500,000
Retained earnings, 1 January 20x4	12,500,000	1,500,000	1,000,000
Retained earnings, 31 December 20x4	$17,500,000	$ 1,800,000	$5,500,000

Profit before tax includes dividend income from subsidiaries. The tax rate was 20%.

Required:

1. Prepare the necessary elimination and consolidation journal entries with respect to A's group financial statements for the year ended 31 December 20x4, using the simultaneous method of consolidation.
2. On 1 January 20x5, C acquired 90% of D's share capital. Calculate the total non-controlling interest percentage, both direct and indirect, in D Ltd.

P7.2 Simultaneous consolidation and equity accounting

Extracts of financial statements of P, X, Y and Z for the year ended 31 December 20x5 are as follows:

Income Statement
For the Year Ended 31 December 20x5

	P	X	Y	Z
Net profit before tax	$500,000	$250,000	$160,000	$300,000
Tax	(100,000)	(50,000)	(32,000)	(60,000)
Net profit after tax	$400,000	$200,000	$128,000	$240,000
Dividends declared	(56,000)	(40,000)	(65,000)	(50,000)
Net profit retained	$344,000	$160,000	$ 63,000	$190,000

Statement of Financial Position As at 31 December 20x5				
	P	X	Y	Z
Investment in X, at cost	$ 500,000			
Investment in Y, at cost	600,000			
Investment in Z, at cost			$ 750,000	
Other assets	2,400,000	$2,200,000	500,000	$2,800,000
Total assets	$3,500,000	$2,200,000	$1,250,000	$2,800,000
Share capital	$ 600,000	$ 500,000	$ 350,000	$ 550,000
Other reserves	250,000	350,000		
Retained earnings	800,000	900,000	600,000	750,000
Shareholders' equity	$1,650,000	$1,750,000	$ 950,000	$1,300,000

Additional information:

(a) All intercorporate investments were acquired prior to 1 January 20x5. Y was acquired before Z. There was no change in share capital since the date of acquisition. Ownership interests in investee companies, retained earnings, and fair value of non-controlling interests at the date of acquisition are as follows:

Investee Company	X	Y	Z
Percentage of direct interest held by investor company	40%	60%	80%
Retained earnings of investee company at acquisition date	$400,000	$355,000	$330,000
Fair value of non-controlling interests at acquisition date	Not applicable	$470,000	$220,000

(b) Book values at acquisition date were close to fair values. No goodwill impairment charges were made since acquisition date.

(c) Assume no changes in retained earnings other than profit and dividends.

(d) Assume a tax rate of 20%.

Required:

1. Calculate the amounts of dividend income recorded by each investor company. Assume that dividend income is tax-exempt.
2. Applying the default assumptions relating to "control" and "significance influence," show all relevant adjustment and elimination entries (with narratives and workings) for the year ended 31 December 20x5 that need to be passed to prepare the consolidated financial statements in accordance with the relevant IFRS pronouncements.

P7.3 Simultaneous consolidation

On 2 January 20x1, P Ltd paid $316,000 to acquire 160,000 ordinary shares (issued at $1 per share) in SA Ltd. At that point, SA Ltd's retained earnings were $100,000. SA Ltd had an issued share capital of 200,000 ordinary shares (issued at $1 per share). On 2 January 20x1, SA Ltd acquired a 90% interest in SB Ltd for $204,800. The share capital and retained earnings of SB Ltd were $100,000 and $80,000, respectively at the date of acquisition. The book values of identifiable net assets were close to their fair values. On 31 December 20x1, the retained earnings for SA Ltd and SB Ltd were $130,000 and $100,000, respectively. Tax rate was 20%. Assume that the acquisition costs paid by P Ltd, relative to the equity interests held, are proportionate to the fair value of SA Ltd and SB Ltd.

The cost method is used to account for the investment in subsidiaries. The following information is available for the year ended 31 December 20x2:

Income Statement
For the Year Ended 31 December 20x2

	P	SA	SB
Net profit before tax	$163,680	$65,000	$10,000
Tax	(36,400)	(13,000)	(2,000)
Net profit after tax	$127,280	$52,000	$ 8,000

	P	SA	SB
Dividends declared	$60,000	$29,600	$8,140

Required:

Using the simultaneous method of consolidation, prepare consolidation entries to:

1. Eliminate Investment in SA and SB.
2. Allocate profits to non-controlling interests.
3. Eliminate dividends.

P7.4 Indirect associate

Refer to P7.3. If SA had only "significant influence" over SB, show how the journal entries will differ from P7.3 above.

P7.5 Direct and indirect associate

Refer to P7.3. If SA and SB are only associate companies in the hierarchical structure, show the necessary journal entries that need to be passed by P in its financial statements using the equity method.

P7.6 Comprehensive problem set

The following information relates to the acquisition of S Co, A Co, and B Co.

	Acquired company		
	S Co	A Co	B Co
Acquirer	P Co	P Co	S Co
Date of acquisition	1 January 20x1	1 January 20x2	1 July 20x1
Percentage acquired	90%	40%	60%
Fair value of non-controlling interests	$400,000		$260,000

The following information relates to statements of financial position at date of acquisition.

	S Co Book value	S Co Fair value	A Co Book value	A Co Fair value	B Co Book value	B Co Fair value
Intangible assets	$ 0	$ 250,000				
Fixed assets	1,000,000	1,000,000	$250,000	$290,000	$ 40,000	$ 40,000
Inventory	400,000	450,000	150,000	150,000	60,000	55,000
Accounts receivable	200,000	200,000	120,000	120,000	50,000	50,000
Cash	100,000	100,000	45,000	45,000	10,000	10,000
Total assets	$1,700,000	$2,000,000	$565,000	$605,000	$160,000	$155,000
Contingent liability	$ 0	$ 120,000				
Accounts payable	400,000	400,000	$245,000	$245,000	$100,000	$100,000
Share capital	1,000,000		200,000		50,000	
Retained earnings	300,000		120,000		10,000	
Equity and liabilities	$1,700,000	$2,000,000	$565,000	$605,000	$160,000	$155,000

page 653

The following information is available for the year ended 31 December 20x3.

Income Statement
For the Year Ended 31 December 20x3

	P Co	S Co	A Co	B Co
Sales	$8,000,000	$3,500,000	$1,500,000	$200,000
Cost of sales	(5,500,000)	(3,000,000)	(900,000)	(120,000)
Gross profit	$2,500,000	$ 500,000	$ 600,000	$ 80,000
Operating expenses net of other income	(1,000,000)	(300,000)	(400,000)	(50,000)
Net profit before tax	$1,500,000	$ 200,000	$ 200,000	$ 30,000
Tax	(300,000)	(40,000)	(40,000)	(6,000)
Net profit after tax	$1,200,000	$ 160,000	$ 160,000	$ 24,000
Dividends declared	(200,000)	(120,000)	(100,000)	(20,000)
Net profit attributable to shareholders	$1,000,000	$ 40,000	$ 60,000	$ 4,000
Retained earnings, 1 January 20x3	2,500,000	500,000	180,000	25,000
Retained earnings, 31 December 20x3	$3,500,000	$ 540,000	$ 240,000	$ 29,000

Statement of Financial Position As at 31 December 20x3				
	P Co	S Co	A Co	B Co
Investment in S Co	$ 4,200,000			
Investment in A Co	600,000			
Investment in B Co		$ 400,000		
Fixed assets	4,000,000	1,400,000	$400,000	$ 70,000
Inventory	2,000,000	600,000	200,000	75,000
Accounts receivable	1,000,000	500,000	35,000	60,000
Cash	120,000	40,000	20,000	5,000
	$11,920,000	$2,940,000	$655,000	$210,000
Accounts payable	$ 5,420,000	$1,400,000	$215,000	$131,000
Share capital	3,000,000	1,000,000	200,000	50,000
Retained earnings	3,500,000	540,000	240,000	29,000
	$11,920,000	$2,940,000	$655,000	$210,000

Additional information:

(a) Intangible assets of S Co had an estimated useful life of five years from the date of acquisition by P Co. Amortization on a straight line basis was deemed to be the appropriate method of recognizing the decline in value.

(b) Remaining useful life of the fixed assets of A Co at the date of acquisition was five years. Assume nil residual values.

(c) Inventory at the date of acquisition was sold off within the following financial period. page 654

(d) The contingent liability of S Co at the date of acquisition was disposed of as follows: 50% of the contingent liability was settled by S Co in the year following acquisition; the remaining 50% of the contingent liability was deemed as unwarranted in the year of settlement.

(e) The following sales of inventory were made during 20x2 and 20x3:

	20x2	20x3
Sales from S to P	$300,000	
Original cost	240,000	
Gross profit on transfer	$ 60,000	
Percentage unsold to third parties at year-end	60%	10%
Sales from P to S		$600,000
Original cost		450,000
Gross profit on transfer		$150,000
Percentage unsold to third parties at year-end		30%

(f) The following transfers of fixed assets from A to P were made during 20x2:

Date of transfer	1 July 20x2
Original cost	$100,000)
Accumulated depreciation	(20,000)
Net book value at transfer date	$ 80,000

Transfer price	$120,000
Remaining useful life at transfer	4 years
Residual value is nil.	

(g) There was no change in share capital of the acquired companies from acquisition date.
(h) Assume a tax rate of 20%. Recognize tax on fair value adjustments.

Required:

1. Prepare the consolidation and equity accounting entries for the year ended 31 December 20x3.
2. Perform an analytical check on non-controlling interests of S Co as at 31 December 20x3.
3. Perform an analytical check on the investment in A Co as at 31 December 20x3.

P7.7 Comprehensive problem set

The details of acquisition of Y Co, Z Co, and W Co are shown below.

	Y Co	Z Co	W Co
Date of acquisition	1 January 20x3	1 January 20x4	1 July 20x4
Percentage acquired by P Co	90%	30%	
Percentage acquired by Y Co			60%
Shareholders' equity at date of acquisition:			
Share capital	$ 800,000	$200,000	$500,000
Retained earnings	900,000	400,000	340,000
	$1,700,000	$600,000	$840,000
Fair value of non-controlling interests at acquisition date	$ 400,000		$300,000

The fair and book values of net identifiable assets of each company at the date of acquisition are shown below:

	Y Co		Z Co		W Co	
	Book value	Fair value	Book value	Fair value	Book value	Fair value
Inventory	$ 220,000	$ 320,000			$100,000	$ 90,000
Intangible assets				$300,000		
Other net assets	1,480,000	1,480,000	$600,000	600,000	740,000	740,000
Net identifiable assets	$1,700,000	$1,800,000	$600,000	$900,000	$840,000	$830,000

The financial statements of P Co, Y Co, Z Co, and W Co for the year ended 31 December 20x5 are shown below.

Income Statement For the Year Ended 31 December 20x5				
	P Co	Y Co	Z Co	W Co
Profit before tax	$4,200,000	$1,800,000	$ 500,000	$300,000
Tax	(840,000)	(360,000)	(80,000)	(66,000)
Profit after tax	$3,360,000	$1,440,000	$ 420,000	$234,000
Dividends declared	(400,000)	(300,000)	(100,000)	(120,000)
Profit retained	$2,960,000	$1,140,000	$ 320,000	$114,000
Retained earnings, 1 January 20x5	1,200,000	1,200,000	700,000	400,000
Retained earnings, 31 December 20x5	$4,160,000	$2,340,000	$1,020,000	$514,000

Statement of Financial Position As at 31 December 20x5				
	P Co	Y Co	Z Co	W Co
Fixed assets, net book value	$2,800,000	$2,060,000	$ 700,000	$3,500,000
Investment in Y Co, at cost	2,200,000			
Investment in Z Co, at cost	800,000			
Investment in W Co, at cost		800,000		
Inventory	760,000	500,000	230,000	100,000
Intercompany receivable		100,000		
Accounts receivable	600,000	500,000	300,000	250,000
Cash	45,000	100,000	50,000	30,000
	$7,205,000	$4,060,000	$1,280,000	$3,880,000
Accounts payable	$1,745,000	$ 920,000	$ 60,000	$2,866,000
Intercompany payable	100,000			
Share capital	1,200,000	800,000	200,000	500,000
Retained earnings	4,160,000	2,340,000	1,020,000	514,000
	$7,205,000	$4,060,000	$1,280,000	$3,880,000

Additional information:

(a) Inventory of Y Co at the date of acquisition was disposed of in 20x4 while that of W Co was disposed of in January 20x5.

(b) The intangible asset of Z Co at the date of acquisition had no definite useful life and was tested for impairment on an annual basis. Thus far, no impairment loss arose for the intangible asset.

(c) In November 20x4, Y Co transferred inventory to Z Co at an invoiced price of $200,000. The original cost of the inventory was $140,000.

Percentage resold to third parties during 20x4	20%
Percentage resold to third parties during 20x5	60%
Percentage unsold as at end of 20x5	20%

(d) On 1 January 20x5, Z Co transferred its fixed asset to P Co at a transfer price of $172,000. The original cost of the fixed asset was $180,000 and its accumulated depreciation was $36,000 at the date of transfer. The original useful

life of the asset was five years and the remaining life as at 1 January 20x5 was four years.

(e) Assume at tax rate of 20%. Recognize tax effects on fair value adjustments.

Required:

1. Prepare the consolidation and equity accounting journal entries for P Co and its subsidiaries and associate for the year ended 31 December 20x5.
2. Perform an analytical check on the balances of non-controlling interests as at 31 December 20x5.
3. Perform an analytical check on the balance of the investment in associate account as at 31 December 20x5.
4. Prepare the consolidation worksheet for P Co and its group for the year ended 31 December 20x5.

P7.8 Comprehensive problem set

The financial statements of P Co, Y Co, Z Co, and W Co for the year ended 31 December 20x5 are shown below:

Income Statement
For the Year Ended 31 December 20x5

	P Co	Y Co	Z Co	W Co
Profit before tax	$2,400,000)	$1,200,000	$600,000	$ 480,000
Tax	(480,000)	(240,000)	(150,000)	(96,000)
Profit after tax	$1,920,000	$ 960,000	$450,000	$ 384,000
Retained earnings, 1 January 20x5	1,450,000	900,000	600,000	900,000
Dividends declared	(500,000)	(100,000)	(80,000)	(100,000)
Retained earnings, 31 December 20x5	$2,870,000	$1,760,000	$970,000	$1,184,000

Statement of Financial Position
As at 31 December 20x5

	P Co	Y Co	Z Co	W Co
Fixed assets, net book value	$3,000,000	$2,120,000	$ 750,000	$1,900,000
Investment in Y Co, at cost	2,000,000			
Investment in Z Co, at cost	1,200,000			
Investment in W Co, at cost.		1,500,000		
Inventory	960,000	500,000	300,000	500,000
Intercompany receivable		250,000		
Accounts receivable	500,000	450,000	250,000	350,000
Cash	120,000	50,000	90,000	100,000
	$7,780,000	$4,870,000	$1,390,000	$2,850,000
Accounts payable	$2,660,000	$2,110,000	$ 20,000	$ 366,000
Intercompany payable	250,000			
Share capital	2,000,000	1,000,000	400,000	800,000
Retained earnings	2,870,000	1,760,000	970,000	1,184,000
Revaluation reserves				500,000
	$7,780,000	$4,870,000	$1,390,000	$2,850,000

Y Co Z Co W Co

Date of acquisition	1 Jul 20x3	1 Jan 20x4	1 Jan 20x2
Percentage acquired by P Co	90%	30%	
Percentage acquired by Y Co			80%
Shareholders' equity at date of acquisition:			
Share capital	$1,000,000	$400,000	$800,000
Retained earnings	600,000	500,000	500,000
Revaluation reserves			400,000
	$1,600,000	$900,000	$1,700,000

	Y Co	W Co
Fair value of non-controlling interests at 1 July 20x3	$200,000	$375,000
Fair value of non-controlling interests at 1 Jan 20x2		350,000
Retained earnings of W Co at 1 July 20x3 (when P Co acquired Y Co)		750,000
Revaluation reserves of W Co at 1 July 20x3		400,000

Information on net identifiable assets of each company is as follows:

	Y Co		Z Co	
	Book value	Fair value	Book value	Fair value
Inventory	$ 400,000	$ 500,000		
Intangible asset				$300,000
Other net assets	1,200,000	1,200,000	$900,000	900,000
Net identifiable assets	$1,600,000	$1,700,000	$900,000	$1,200,000

The fair value of the net assets of W Co was close to its book value at 1 January 20x2 and 1 July 20x3.

Additional information:

(a) Amortization of fair value adjustments:
   (i) Undervalued inventory at date of acquisition was disposed of in January 20x4.
   (ii) The intangible asset had a useful life of five years from acquisition date.

(b) Z Co transferred its fixed asset to P Co on 1 July 20x5. Details are as follows:

Transfer price invoiced by Z Co to P Co		$500,000
Original cost of the fixed asset	$400,000	
Accumulated depreciation	(250,000)	
Net book value		150,000
Profit on sale recorded by Z Co in 20x5		$350,000
Original useful life		4 years
Remaining life as at 1 July 20x5 (assume nil residual value)		2½ years
Remaining life as at 31 Dec 20x5		2 years

(c) Other transactions were as follows:

Sale of inventory from Y Co to P Co	$150,000
Original cost of inventory	100,000
Gross profit recorded by Y Co	$ 50,000
Date of sale	1 November 20x4
Percentage resold to third parties during 20x4	20%
Percentage resold to third parties during 20x5	70%
Percentage in inventory at end 20x5	10%

(d) Sale of inventory from P Co to Y Co in 20x5:

Transfer price	$200,000
Original cost of inventory	$250,000
Percentage in inventory at end 20x5	40%

The loss on transfer was not indicative of an impairment loss.

(e) Assume a tax rate of 20%. Recognize tax effects on fair value adjustments.

Required:

1. Prepare the consolidation and equity accounting entries for 20x5.
2. Prepare the consolidation worksheet.
3. Perform an analytical check on the year-end balances of non-controlling interests in Y and W and the Investment in Z.

P7.9 Intragroup transfer of assets

P Co had direct and indirect interests in the following companies as at 1 January 20x0:

Companies	Direct investor	Percentage ownership
S Co	P Co	70%
A Co	P Co	40%
B Co	S Co	90%

On 1 January 20x0, a transfer of fixed assets was made as follows:

Transfer of fixed assets

Transfer price		$250,000
Original cost	$240,000	
Accumulated depreciation	(40,000)	
Net book value at date of transfer		(200,000)
Profit on transfer		$ 50,000
Remaining useful life at date of transfer		10 years

Profit figures for the investee companies for the years ended 31 December 20x0 and 20x1 are shown below.

	20x0		20x1	
	Profit before tax	Tax	Profit before tax	Tax
S Co	$800,000	$160,000	$900,000	$180,000
A Co	300,000	60,000	250,000	50,000
B Co	650,000	130,000	500,000	100,000

page 660

Required:

Show the equity accounting and consolidation adjustments as at 31 December 20x0 and 31 December 20x1 under each of the two alternative situations below:

1. Transfer is made from S Co to A Co;
2. Transfer is made from B Co to P Co.

Recognize a full-year depreciation and tax effects at 20%.

P7.10 Business combination achieved in stages

P acquired S in two successive purchases resulting in control on 31 December 20x0. Details of the purchases and other information relating to S are shown below:

Date	Acquisition cost paid for incremental investment	Fair value of S as an entity	Percentage acquired in incremental investment	Cumulative percentage held by P
1 July 20x0	$ 5,000,000	$16,000,000	30%	30%
31 December 20x0	7,000,000	17,500,000	40%	70%
	$12,000,000			
31 December 20x0				
Share capital of S		10,000,000		
Retained earnings of S		5,000,000		
		$15,000,000		
Non-controlling interests of S as at 31 December 20x0		$5,250,000		

Book value of net identifiable assets of S was close to its fair value at each acquisition date. Extracts of S's income statement for the period 1 July 20x0 to 31 December 20x0 are shown below:

Profit before tax	$3,000,000
Tax expense	(600,000)
Profit after tax	$2,400,000
Dividends declared	(400,000)
Profit retained	$2,000,000

Required:

1. Prepare the journal entries in respect of the investment in P's separate financial statements for the year ended 31 December 20x0.
2. Prepare the equity accounting and consolidation entries to be put through in P's consolidated financial statements for the year ended 31 December 20x0.

P7.11 Change in ownership interests

Consider the following alternative scenarios relating to an investor company P Co's investment in another company, known as X Co.

Scenario: P Co increases ownership interest in X Co from 60% to 75%

Details	Ownership interest	Amount
Purchase of initial investment of 60% interest in X Co on 1 January 2010		
Fair value of consideration transferred	60%	$13,000,000
Fair value of non-controlling interests	40%	6,000,000
Purchase of additional investment of 15% interest in X Co on 1 July 2011		
Incremental purchase	15%	4,500,000
Non-controlling interests' balance as at 1 July 2011		7,500,000
Fair value of identifiable net assets of X Co		22,000,000
Book value of identifiable net assets of X Co		19,000,000
Tax rate is 20%		

Required:

Determine the amounts of the following items (if any) arising at the date of the most recent transaction in each scenario:

1. New goodwill
2. Effects that are taken to the Income Statement
   (a) Remeasurement gain or loss
   (b) Profit or loss on sale of investment
3. Equity effects that are not taken to the Income Statement
   (a) Profit or loss arising from changes in ownership
   (b) Changes in non-controlling interests

P7.12 Change in ownership interests

Scenario: P Co decreases ownership interest in X Co from 95% to 70%

Details	Ownership interest	Amount
Purchase of initial investment of 95% interest in X Co on 1 December 2010		
Fair value of consideration transferred	95%	$29,000,000
Fair value of non-controlling interests	5%	1,500,000

P Co's share of 95% of equity of X Co as at 31 December 2011		27,300,000
Divestment of 25% interest in X Co on 31 December 2011		
Sales proceeds	(25%)	12,800,000

Required:

Determine the amounts of the following items (if any) arising at the date of the most recent transaction in each scenario:

1. New goodwill
2. Effects that are taken to the Income Statement
   (a) Remeasurement gain or loss
   (b) Profit or loss on sale of investment
3. Equity effects that are not taken to the Income Statement
   (a) Profit or loss arising from changes in ownership
   (b) Changes in non-controlling interests

P7.13 Change in ownership interests

Scenario: P Co increases ownership interest in X Co from 40% to 60%

Details	Ownership interest	Amount
Purchase of initial investment of 40% interest in X Co on 1 January 2009		
Original cost of previously acquired interests	40%	$5,200,000
P Co's share (40%) of post-acquisition change in equity of X Co for the period from 1 January 2009 to 1 April 2011		900,000
Purchase of additional investment of 20% interest in X Co on 1 April 2011		
Fair value of consideration transferred	20%	4,100,000
Fair value of non-controlling interests	40%	6,500,000
Fair value of previously acquired interests	40%	6,500,000
Fair value of identifiable net assets (*deferred tax has not been considered yet*)		15,000,000
Book value of identifiable net assets		13,000,000
Tax rate		20%

Required:

Determine the amounts of the following items (if any) arising at the date of the most recent transaction in each scenario:

1. New goodwill
2. Effects that are taken to the Income Statement
   (a) Remeasurement gain or loss
   (b) Profit or loss on sale of investment
3. Equity effects that are not taken to the Income Statement
   (a) Profit or loss arising from changes in ownership

(b) Changes in non-controlling interests

P7.14 Change in ownership interests

Scenario: P Co decreases ownership interest in X Co from 80% to 50%

Details	Ownership interest	Amount
Purchase of initial investment of 80% interest in X Co on 1 January 2009		
Fair value of consideration transferred	80%	$16,000,000
Fair value of non-controlling interests	20%	3,600,000
P Co's share (80%) of post-acquisition change in equity of X Co for the period from 1 January 2009 to 1 September 2011		2,300,000
Sale of investment of 30% interest in X Co on 1 September 2011		
Sales proceeds	(30%)	9,000,000
Fair value of retained interests	50%	11,800,000
Original cost of investment	50%	10,000,000

Required:

Determine the amounts of the following items (if any) arising at the date of the most recent transaction in each scenario:

1. New goodwill
2. Effects that are taken to the Income Statement
   (a) Remeasurement gain or loss
   (b) Profit or loss on sale of investment
3. Equity effects that are not taken to the Income Statement
   (a) Profit or loss arising from changes in ownership
   (b) Changes in non-controlling interests

P7.15 and P7.16 Multilevel consolidation and change in ownership interests

The problem set applies to P7.15 and P7.16

The financial statements of P Co and its subsidiaries and associate show below:

Income Statement for year ended 31 December 20x3					
	P Co	X Co	Z Co	Y Co	Consolidated
Profit before tax	3,200,000	2,200,000	856,000	750,000	
Tax	(640,000)	(440,000)	(154,080)	(150,000)	
Profit after tax	2,560,000	1,760,000	701,920	600,000	
Income to NCI					
Dividends declared	(500,000)	(230,000)	(70,000)	(134,000)	
Profit retained	2,060,000	1,530,000	631,920	466,000	
Retained earnings, 1 Jan 20x3	2,560,000	1,245,000	550,000	900,000	
Retained earnings, 31 Dec 20x3	4,620,000	2,775,000	1,181,920	1,366,000	

Statement of Financial Position as at 31 December 20x3					
	P Co	X Co	Z Co	Y Co	Consolidated
Goodwill					
Fixed assets, net book value	2,190,000	1,345,900	880,000	1,345,000	
Investment in X Co	4,375,000				
Investment in Z Co	1,500,000				
Investment in Y Co		900,000			
Inventory	430,000	532,000	250,000	660,000	
Intercompany receivable		100,000			
Other net assets	920,000	1,967,000	1,800,000	1,632,000	
Cash	145,900	50,000	40,000	10,000	
	9,560,900	4,894,900	2,970,000	3,647,000	
Accounts payable	3,240,900	919,900	888,080	1,811,000	
Intercompany payable	100,000				
Share capital	1,600,000	1,200,000	900,000	350,000	
Retained earnings	4,620,000	2,775,000	1,181,920	1,366,000	
Revaluation reserves				120,000	
Capital reserve					
Non-controlling interests					
	9,560,900	4,894,900	2,970,000	3,647,000	

Details relating to information at acquisition date and subsequent changes in ownership are shown below:

	X Co	Z Co	Y Co
Date of acquisition/investment by immediate parent/investor	1 Jan 20x1	1 Jan 20x1	1 July 20x0
Percentage acquired by P Co	80%	30%	
Percentage of retained interests by P Co on 31 Dec 20x2	70%		
Percentage acquired by X Co			70%
Shareholders' equity at date of acquisition/investment			
by immediate parent/investor			
Share capital	1,200,000	900,000	350,000
Retained earnings	700,000	345,000	450,000
Revaluation reserves			90,000
	1,900,000	1,245,000	890,000

	X Co	Y Co
Fair value of direct NCI of X Co and indirect NCI of Y Co at 1 January 20x1	626,300	
Fair value of direct NCI of Y Co at 1 January 20x1		363,500
Fair value of direct NCI of Y Co at 1 July 20x0		421,000
Retained earnings of Y Co at 1 January 20x1 (when X Co was acquired by P Co)		600,000
Revaluation reserves of Y Co at 1 January 20x1 and 31 Dec 20x2		95,000
Proceeds on sale of 10% of X Co at 31 Dec 20x2	1,000,000	
NCI: non-controlling interests		

Fair and book values of net assets of each company at date of acquisition/investment by P Co

	X Co ⟶		Z Co ⟶		Y Co (1 Jan 20x1) ⟶	
	Book value	**Fair value**	**Book value**	**Fair value**	**Book value**	**Fair value**
Provision for claim	(160,000)	(220,000)				
Intangible asset				100,000		
Other net assets	2,060,000	2,060,000	1,245,000	1,245,000	1,045,000	1,045,000
Total net assets	1,900,000	1,840,000	1,245,000	1,345,000	1,045,000	1,045,000

Additional information:

1. During 20x2, X Co recognized a litigation settlement of $200,000 in respect of the provision for claims on an award of damages to the plaintiff by the courts. The case is still pending the final outcome following appeal by the plaintiff for a higher award of damages.
2. During August 20x2, Y Co sold excess inventory to P Co as follows:

Transfer price	$120,000
Original cost (Carrying amount)	$90,000
Percentage resold to third parties during 20x2	25%
Percentage resold to third parties during 20x3	65%

3. Intangible assets of Z Co had a remaining lease term of 5 years from date of acquisition.
4. The fair value of net assets of Y Co was close to its book value when acquired by X Co and P Co.
5. On 1 July 20x2, Z Co sold machinery to Y Co as follows:

Transfer price	$180,000
Profit on sale	$40,000
Expected useful life as at 30 June 20x2	8 years
Residual value	Negligible

6. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

P7.15 Consolidation and Equity Accounting Entries

Prepare the consolidation and equity accounting entries for the year ended 31 December 20x3.

P7.16 Analytical Checks and End-Results Approach

Prepare the consolidated financial statements for the year ended 31 December 20x3 using the end-result approach through workings (i.e., analytically derive the balances without having to formulate the consolidation and equity accounting entries and worksheets).

P7.17 and P7.18 Multilevel consolidation and change in ownership interests

The problem set applies to P7.17 and P7.18

The financial statements of P Co and its subsidiaries and associate are as follows:

Income Statement for year ended 31 December 20x6

	P Co	B Co	D Co	C Co	Consolidated
Profit before tax	5,800,000	1,670,000	600,000	420,000	
Tax	(1,160,000)	(334,000)	(120,000)	(81,400)	
Profit after tax	4,640,000	1,336,000	480,000	338,600	
Income to NCI					
Dividends declared	(320,000)	(200,000)	(150,000)	(100,000)	
Profit retained	4,320,000	1,136,000	330,000	238,600	
Retained earnings, 1 Jan 20x6	2,000,000	1,456,000	1,400,000	232,000	
Retained earnings, 31 Dec 20x6	6,320,000	2,592,000	1,730,000	470,600	

Statement of Financial Position as at 31 December 20x6

	P Co	B Co	D Co	C Co	Consolidated
Goodwill					
Fixed assets, net book value	4,490,000	3,340,000	2,540,000	761,000	
Investment in B Co	2,500,000				
Investment in D Co	1,150,000				
Investment in C Co		800,000			
Inventory	600,000	520,000	448,500	348,900	
Intercompany receivable	1,700,000				
Other net assets	1,125,800	1,880,000	1,973,000	557,200	
Cash	747,000	256,000	189,000	56,000	
	12,312,800	6,796,000	5,150,500	1,723,100	
Accounts payable	2,492,800	1,004,000	2,520,500	676,500	
Bank loans	1,500,000				
Intercompany payable		1,700,000			
Share capital	2,000,000	1,500,000	900,000	420,000	
Retained earnings	6,320,000	2,592,000	1,730,000	470,600	
Revaluation reserves				156,000	
Non-controlling interests					
	12,312,800	6,796,000	5,150,500	1,723,100	

Details relating to information at acquisition date and subsequent changes in ownership are shown below:

	B Co	D Co	C Co
Date of acquisition/investment by immediate parent/investor	1 Aug 20x4	1 Jan 20x5	1 July 20x3
Percentage acquired by P Co	90%	60%	
Percentage of retained interests by P Co		40%	
Percentage acquired by B Co			60%
Shareholders' equity at date of acquisition by immediate parent/investor			
Share capital	1,500,000	900,000	420,000
Retained earnings	650,000	400,000	120,000
Revaluation reserves			60,000
	2,150,000	1,300,000	600,000

	B Co	C Co
Fair value of direct NCI of B and indirect NCI of C at 1 Aug 20x4	250,000	
Fair value of direct NCI of C at 1 Aug 20x4		550,000
Fair value of direct NCI of C at 1 July 20x3		420,000
Retained earnings of C Co at 1 Aug 20x4 (when B Co was acquired by P Co)		180,000
Revaluation reserves of C Co at 1 Aug 20x4		70,000
Fair value of inventory of C Co at 1 July 20x3		120,000
Book value of inventory of C Co at 1 July 20x3		90,000

NCI: Non-controlling interests

Fair and book values of net assets of each company at date of acquisition by P Co

	B Co ⟶		D Co ⟶		C Co (1 Aug 20x4) ⟶	
	Book value	Fair value	Book value	Fair value	Book value	Fair value
Accounts receivable	300,000	220,000				
Inventory					150,000	200,000
Other net assets	1,850,000	1,850,000	1,300,000	1,300,000	520,000	520,000
Total net assets	2,150,000	2,070,000	1,300,000	1,300,000	670,000	720,000

Additional information:

1. D Co was originally a subsidiary of P Co when P Co purchased an initial investment of 60% interest in D Co. On 1 January 20x5, P Co sold 20% interest in D Co, reducing the ownership interest in D Co to 40%.

Date of acquisition of D Co as subsidiary	1 July 20x2

Fair value of consideration transferred at 1 July 20x2	$1,725,000
Fair value of non-controlling interests at 1 July 20x2	$700,000
P Co's share (60%) of post-acquisition change in equity of D Co for the period of 1 July 20x2 to 1 January 20x5	$530,000
Date of loss of control	1 January 20x5
Sales proceeds for 20% interest	$900,000
Fair value of retained interests	$1,800,000

2. The fair value of accounts receivable of B Co was lower than the book value because of an expected loss on a debtor. B Co recognized an incurred loss in 20x6 when the debtor went into bankruptcy. In 20x6, B Co expensed off $280,000 as impairment losses. page 668
3. The undervalued inventory of C Co was disposed as follows:

Sixty percent of the inventory of C Co was sold during 20x5 for	$120,000
Thirty percent was sold during 20x6 for	$60,000

4. P Co provided a long term loan to B Co on 1 September 20x5 to finance the construction of equipment. The use of the loan proceeds met the requirements of IAS 23 *Borrowing Costs*. B Co completed the construction of the equipment on 1 February 20x6 and commenced the depreciation of the equipment over a useful life of 5 years from that date. Residual value is negligible. The following interest income was recognized by P Co:

Interest income from 1 Sep 20x5 to 31 Dec 20x5	$120,000
Interest income from 1 Jan 20x6 to 30 Jan 20x6	$205,000
Interest income from 1 Feb 20x6 to 31 Dec 20x6	$150,000

P Co incurred interest expense on third party loans as follows:

Interest expense from 1 Sep 20x5 to 31 Dec 20x5	$105,000
Interest expense from 1 Jan 20x6 to 30 Jan 20x6	$195,000
Interest expense from 1 Feb 20x6 to 31 Dec 20x6	$126,000

5. There was a sale of inventory from D Co to P Co, with details as follows:

Date of sale	16 July 20x5
Fair value at date of sale	$90,000
Transfer price for sale of inventory	$70,000
Original cost of inventory	$80,000
Percentage resold to third parties during 20x5	25%
Percentage resold to third parties during 20x6	55%
Percentage stock take loss on inventory as at 31 December 20x6	10%

6. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

P7.17 Consolidation and Equity Accounting Entries

Prepare the consolidation and equity accounting entries for the year ended 31 December 20x6.

P7.18 Analytical Checks and End-Results Approach

Prepare the consolidated financial statements for the year ended 31 December 20x6 using the end-result approach through workings (i.e., analytically derive the balances without having to formulate the consolidation and equity accounting entries and worksheets).

P7.19 and P7.20 Multilevel consolidation and changes in ownership interests

The problem set applies to P7.19 and P7.20

The financial statements of P Co and its subsidiaries and associate are shown below:

Income Statement for year ended 31 December 20x6					
	P Co	B Co	D Co	C Co	Consolidated
Profit before tax	4,377,000	1,558,000	677,000	489,000	
Tax	(875,400)	(311,600)	(135,400)	(97,800)	
Profit after tax	3,501,600	1,246,400	541,600	391,200	
Income to NCI					
Dividends declared	(200,000)	(130,000)	(50,000)	(80,000)	
Profit retained	3,301,600	1,116,400	491,600	311,200	
Retained earnings, 1 Jan 20x6	2,416,000	850,900	876,600	453,200	
Retained earnings, 31 Dec 20x6	5,717,600	1,967,300	1,368,200	764,400	

Statement of Financial Position as at 31 December 20x6					
	P Co	B Co	D Co	C Co	Consolidated
Goodwill					
Intangible assets, net book value					
Fixed assets, net book value	2,844,000	2,063,000	1,459,000	898,000	
Investment in B Co	3,500,000				
Investment in D Co	800,000				
Investment in C Co		820,000			
Inventory	820,000	610,000	510,000	267,000	
Intercompany receivable	1,800,000				
Other net assets	2,384,000	1,382,000	815,450	535,000	
Cash	320,000	700,000	150,000	127,000	
	12,468,000	5,575,000	2,934,450	1,827,000	
Accounts payable	4,050,400	207,700	766,250	382,600	
Bank loans	1,400,000				
Intercompany payable		1,800,000			
Share capital	1,300,000	1,600,000	800,000	550,000	
Retained earnings	5,717,600	1,967,300	1,368,200	764,400	
Revaluation reserves				130,000	
Non-controlling interests					
	12,468,000	5,575,000	2,934,450	1,827,000	

	B Co	D Co	C Co
Date of acquisition by direct investor	1/8/20x4	1/7/20x2**	1/7/20x3
Date of change from control to significant influence		1/1/20x5*	
Percentage of investment acquired by P Co	90%	60%	
Percentage of retained interests by P Co		40%	
Percentage acquired by B Co			70%
Shareholders' equity as at the above dates			
Share capital	1,600,000	800,000	550,000
Retained earnings	685,000	393,000**	332,000
Revaluation reserves			85,000
	2,285,000	1,193,000	967,000

	B Co	C Co
Fair value of non-controlling interests at 1 Aug 20x4	350,000	320,000
Fair value of non-controlling interests at 1 July 20x3		303,800
Retained earnings of C Co at 1 Aug 20x4 (when B Co was acquired by P Co)		320,000
Revaluation reserves of C Co at 1 Aug 20x4		95,000
Additional revaluation reserves of C Co as at 31 Dec 20x6		35,000

Fair and book values of net assets of B Co and C Co as at 1 Aug 20x4 and D Co as at 1 July 20x2

	B Co----------→		D Co----------→		C Co----------→	
	Book value	**Fair value**	**Book value**	**Fair value**	**Book value**	**Fair value**
Provision for loss	–	(200,000)				
Intangible assets	–	150,000				
Inventory					120,000	200,000
Other net assets	2,285,000	2,285,000	1,193,000	1,193,000	845,000	845,000
Total net assets	2,285,000	2,235,000	1,193,000	1,193,000	965,000	1,045,000

** Date of acquisition of D as a subsidiary	1 July 20x2
Fair value of consideration transferred on 1 July 20x2	1,200,000
Fair value of NCI of D Co on 1 July 20x2	700,000
* Date of loss of control of D Co	1 Jan 20x5
Retained earnings of D Co on 1 Jan 20x5	860,000
Sales proceeds for 20% interest	600,000
Fair value of retained interests	1,200,000

Additional information:

1. Intangible assets of B Co had an indefinite useful life. On 31 December 20x6, the annual impairment test revealed a loss of $110,000.

2. Ninety percent of the undervalued inventory of C Co was sold to third parties during 20x5 and the remaining was written down to zero during 20x6.
3. P provided a loan to B to finance the self-construction of a warehouse. The warehouse was ready for use on 1 July 20x6 and had an estimated useful life of 10 years. The following transactions were recorded in P's books:

page 671

Interest income from B	
1 Sept 20x5 to 31 Dec 20x5	190,000
1 Jan 20x6 to 30 June 20x6	285,000
Interest expense paid by P to third party banks	
1 Sept 20x5 to 31 Dec 20x5	160,000
1 Jan 20x6 to 30 June 20x6	240,000

4. Provision for loss of B Co was the present value of the expected loss on a claim by a third party. On 1 December 20x5, court hearings confirmed the actual loss of $100,000, which was recognized by B Co.
5. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments.

P7.19 Consolidation and Equity Accounting Entries

Prepare the consolidation and equity accounting entries for the year ended 31 December 20x6.

P7.20 Analytical checks and end-results approach

Prepare the consolidated financial statements for the year ended 31 December 20x6 using the end result approach through workings (i.e., analytically derive the balances without having to formulate the consolidation and equity accounting entries and worksheets).

P7.21 and P7.22 Multilevel consolidation and change in ownership interests

The problem set applies to P7.21 and P7.22

The financial statements of P Co and its subsidiaries and associate are as follows:

Income Statement for year ended 31 December 20x3					
	P Co	X Co	Z Co	Y Co	Consolidated
Profit before tax	6,273,000	2,840,000	1,071,000	550,000	
Tax	(1,254,600)	(568,000)	(214,200)	(110,000)	
Profit after tax	5,018,400	2,272,000	856,800	440,000	
Income to NCI					
Dividends declared	(320,000)	(240,000)	(60,000)	(65,000)	
Profit retained	4,698,400	2,032,000	796,800	375,000	
Retained earnings, 1 Jan 20x3	4,530,000	1,280,000	474,000	900,000	
Retained earnings, 31 Dec 20x3	9,228,400	3,312,000	1,270,800	1,275,000	

page 672

Statement of Financial Position as at 31 December 20x3					
	P Co	X Co	Z Co	Y Co	Consolidated
Goodwill					
Fixed assets, net book value	3,630,000	1,987,000	1,510,000	661,000	
Investment in X Co	3,150,000				
Investment in Z Co	1,030,000				
Investment in Y Co		800,000			
Inventory	496,000	678,000	302,000	950,000	
Intercompany receivable		114,000			
Other net assets	2,811,000	1,321,000	1,680,000	822,000	
Cash	365,000	292,000	164,000	99,430	
	11,482,000	5,192,000	3,656,000	2,532,430	
Accounts payable	679,600	680,000	1,585,200	807,430	
Intercompany payable	114,000				
Share capital	1,460,000	1,200,000	800,000	350,000	
Retained earnings	9,228,400	3,312,000	1,270,800	1,275,000	
Revaluation reserves				100,000	
Capital reserve					
Non-controlling interests					
	11,482,000	5,192,000	3,656,000	2,532,430	

	X Co	Z Co	Y Co
Date of acquisition by direct investor	1/1/20x1	1/1/20x1	1/7/20x0
Percentage acquired by P Co on initial investment	90%	30%	
Percentage of retained interests by P Co	70%		
Percentage acquired by X Co			60%
Shareholders' equity at above dates			
Share capital	1,200,000	800,000	350,000
Retained earnings	770,000	349,000	537,000
Revaluation reserves			90,000
	1,970,000	1,149,000	977,000

	X Co	Y Co
Fair value of NCI at 1 January 20x1	320,300	462,000
Fair value of NCI at 1 July 20x0		320,000
Retained earnings of Y Co at 1 January 20x1 (when X Co was acquired by P Co)		610,000
Revaluation reserves of Y Co at 1 January 20x1		120,000
Revaluation reserves of Y Co decreased on 31 Dec 20x3		(20,000)
Proceeds on sale of 20% of X Co at 31 Dec 20x2	1,150,000	

Fair and book values of net assets of each company at 1 January 20x1

	X Co ----------→		Z Co ----------→		Y Co ---------→	
	Book value	Fair value	Book value	Fair value	Book value	Fair value
Provision for claim		(100,000)				
Intangible asset				400,000		
Other net assets	1,970,000	1,970,000	1,149,000	1,149,000	1,080,000	1,080,000
Total net assets	1,970,000	1,870,000	1,149,000	1,549,000	1,080,000	1,080,000

Additional information:

1. The fair values of identifiable net assets of Y Co were close to their book values on 1 July 20x0 and 1 January 20x1. The estimated useful life of intangible assets of Z Co was 5 years, but the recoverable amount on 31 December 20x3 was assessed to be $100,000.
2. The provision for claims of X Co was settled in full during 20x1 for $170,000.
3. On 1 July 20x3, Z provided new electrical equipment to P Co at the invoiced price of $120,000. The original cost was $200,000 and the net book value was $60,000. The estimated useful life of the equipment was 3 years. Z Co recognized a profit of $$60,000 on the sale. Due to operational changes, the estimated recoverable amount of the equipment as at 31 December 20x3 was $60,000.
4. On 1 October 20x2, Y sold inventory to P Co at the transfer price of $130,000. The original cost and carrying amount of the inventory was $70,000. Percentage resold to third parties were as follows:

20x2	10%
20x3	80%

5. Apply a tax rate of 20% on all appropriate adjustments. Recognize tax effects on fair value adjustments. Companies recognize impairment losses, if any, at the financial year-end.

P7.21 Consolidation and Equity Accounting Entries

Prepare the consolidation and equity accounting entries for the year ended 31 December 20x3.

P7.22 Analytical checks and end-results approach

Prepare the consolidated financial statements for the year ended 31 December 20x3 using the end result approach through workings (i.e., analytically derive the balances without having to formulate the consolidation and equity accounting entries and worksheets).

[1] In this situation, P acquired A as a stand-alone entity. However, if P had purchased A after A acquired B, the fair value of considera-tion transferred must be eliminated against both A's and B's share capital and pre-acquisition retained earnings as at 1 January 20x0. The investment in B must also be eliminated. An example is shown in Illustration 7.2.

[2] In this situation, P acquired A as a stand-alone entity. However, if P had purchased A after A acquired B, the investment must be eliminated against the consolidated equity of A at the date of acquisition. An example is shown in Illustration 7.2.

[3] The check is independent but by no means error-proof. If an element is omitted in both the derivation and the check of non-controlling interests, the check will affirm consistency but not accuracy.

[4] Basis of conclusions, BCZ182, IFRS 10.

[5] IFRS 10 paragraph B98.

[6] An alternative approach is to adjust the unrealized profit from the investor's profit and the investment in associate in a downstream sale.

[7] Such transactions are also known as piecemeal acquisitions of associates or step acquisition of associates in practice.

[8] While the references in this section are made to associates, the discussions on changes in ownership interests will apply equally to joint ventures under IFRS 11 which are accounted for using the equity method in accordance with IAS 28.

[9] Refer to the section on Accounting for Acquisition of Additional or Partial Disposal of Interests in the Separate Financial Statements for a more detailed discussion for the accounting impact in the separate financial statements.

[10] In September 2018, the Interpretations Committee discussed a scenario in which an investment in subsidiary was acquired in stages. One of the issues discussed was the accounting treatment for the cost of investment of the subsidiary in the separate financial statements. Specifically, how an entity should account for the difference between the fair value of the initial interest at the date where control is obtained and its original consideration when the cost approach is applied. The Committee concluded that the difference should be recognized in profit or loss as it meets the definition of income and expenses in *Conceptual Framework for Financial Reporting*. The final agenda decision was issued in January 2019. Whilst the scenario discussed relates to acquisition of a subsidiary in stages, we believe that the agenda decision can be applied by analogy to acquisition of associates in stages.

[11] In another variant of the cost approach, the changes in the fair value of the net assets for the first tranche are not included in the catch-up adjustment. The investor will account for only the share of the investee's results and other comprehensive income to the extent of its shareholdings for the initial tranche.

[12] This effectively means that the fair values of the identifiable assets and liabilities are required to be determined for the initial investment, that is, the first tranche.

[13] An instance of this would be the requirement in paragraph 48C of IAS 21 for the entity to reclassify to profit or loss only the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income in a partial disposal of a foreign operation.

[14] An instance of this is set out in paragraph 41 of IAS 16 which states that the revaluation surplus in equity in respect of an item of property, plant, and equipment may be transferred directly to retained earnings when the asset is derecognized.

[15] Paragraph 43 of IFRS 3 states that the acquisition method of accounting for a business combination applies to business combinations achieved without the transfer of consideration.

[16] The investor will apply the equity method in its stand-alone financial statements in the event that the investor does not have any subsidiary. The stand-alone financial statements are not separate financial statements.

[17] Although the glossary does not form an integral part to the IFRSs, it does provide useful guidance on how cost should be calculated.

[18] The principles in IFRS 3 and other IFRS applied must not conflict with the accounting requirements of IFRS 11. For instance, in accounting for joint operations, the joint operator accounts for its share of assets, liabilities, revenue and expenses in the joint operation in its financial statements. That is, the joint operator does not recognize the interests of the other parties, i.e. no non-controlling interests is recognized. Accordingly, the accounting principles in IFRS 3 pertaining to non-controlling interests will not apply in accounting for acquisitions of interests in joint operations.

[19] A joint operator's rights to assets and obligations to liabilities may be different from its ownership interests in the joint operation. For instance, a joint operator may have 40% ownership interest in a joint operation but its rights to various assets and obligations to various liabilities may be more or less than 40%.

[20] When the entire previously held interest in the joint operation is remeasured to fair value, the entity will effectively remeasure 3 components to fair value (1) previously held interests in recognized assets and liabilities; (2) previously held interests in unrecognized identifiable assets and liabilities; and (3) previously held interest in any unrecognized goodwill relating to the joint operation.

[21] Amendments to IFRS 10 and IAS 28 *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*

[22] Refer to Chapter 6 for a discussion of the unintended consequences that arose as a result of the issuance of the Amendments to IAS 28.

[23] An instance of this would be the requirement in paragraph 48C of IAS 21 for the entity to reclassify to profit or loss only the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income in a partial disposal of a foreign operation.

[24] An instance of this is set out in paragraph 41 of IAS 16 which states that the revaluation surplus in equity in respect of an item of property, plant and equipment may be transferred directly to retained earnings when the asset is derecognized.

[25] The rationale as to why the composition of the group is not affected when an entity loses joint control over a joint operation is because the joint operation does not form part of the group as defined in IFRS 10. This is in contrast to subsidiaries that form part of the group. Accordingly, when control is lost over a subsidiary, the cessation of the parent-subsidiary relationship results in a change in the composition of the group.

[26] An instance of this would be the requirement in paragraph 48C of IAS 21 for the entity to reclassify to profit or loss only the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income in a partial disposal of a foreign operation.

[27] An instance of this is set out in paragraph 41 of IAS 16 which states that the revaluation surplus in equity in respect of an item of property, plant and equipment may be transferred directly to retained earnings when the asset is derecognized.

[28] Paragraph 43C of IFRS 3 provides two examples of such transaction. They are namely the bringing of two businesses together via a stapling arrangement or forming a dual listed corporation.

[29] The fair value of the acquirer's interest in the acquiree will be measured in accordance with IFRS 13 *Fair value measurement*.

CHAPTER

8

Accounting for the Effects of Changes in Foreign Exchange Rates

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand the concept of foreign exchange exposure;
- **LO2** Differentiate between operating exposure and accounting exposure;
- **LO3** Understand the concept of functional currency;
- **LO4** Understand the accounting treatment of foreign currency transactions;
- **LO5** Understand the effects on foreign exchange on disposal and partial disposal of foreign operations;
- **LO6** Understand the procedures for translating foreign currency financial statements in a non-hyperinflationary environment;
- **LO7** Understand the special issues relating to translation; and
- **LO8** Understand the difference between the effects on foreign exchange arising from step-by-step and direct method of consolidation in complex group structure and its effects on disposal.

INTRODUCTION

Until 1974, the currencies of most countries were pegged to the US dollar, which in turn was pegged to the price of gold. This system was known as the fixed or official exchange rate system. However, in 1974, the international monetary system, led by the United States, shifted to a system of floating exchange rates, (or managed floating exchange rates). A significant consequence of this new system is that business entities, especially those with extensive international operations, face increased volatility of exchange rates which affect their reported earnings. The case of Laker Airways in the United Kingdom shows the impact that exchange rate fluctuations can have on an entity's operations, and survival. Laker Airways was the forerunner of the modern low-cost budget carrier. It pioneered the concept of no-frills, low-cost air travel across the Atlantic in the mid-1970s and early 1980s. It borrowed loans denominated in the US dollar to finance the purchase of aircraft while its revenues were mainly denominated in British pounds. As a result of the appreciation of the US dollar against the British pound, the airline suffered huge foreign exchange losses on its US dollar-denominated debts, and eventually went into bankruptcy in May 1982.

TYPES OF FOREIGN EXCHANGE RATE MANAGEMENT REGIMES

The present international monetary system is a mixed bag of foreign exchange rate management regimes. These include the free floating rate system, the managed floating rate system, exchange rate linked to a key currency, exchange rate linked to a basket of currencies and the currency board system.

Floating Rate System

Some countries, such as the United States, Britain, Australia, and Canada, adopt a free floating rate system that allows their currencies to freely fluctuate in response to changing demand and supply conditions.

Managed Floating Rate System

In a managed floating exchange rate system, demand and supply forces determine, to a large extent, the exchange rate of a currency. However, as the term implies, the exchange rate is "managed" by the central bank of a country. The "management" of the exchange rate takes the form of the central bank buying or selling the currency (or a foreign currency) with the objective of achieving a desired exchange rate or an exchange rate within a range.

Exchange Rate Linked to a Key Currency

Some countries fix the exchange rate of their currency to a key currency such as the US dollar. Countries that adopt this system include Argentina and Hong Kong. One drawback of this system is that the economy of the country adopting it will be affected by the economic conditions and policies of the country to which its currency is linked. For example, the inflation rate or the money supply of the former may be affected by the actions of the central bank's policies in the latter country.

page 677

Exchange Rate Linked to a Basket of Currencies

Some countries link the exchange rate of their currencies to a basket of currencies of their major trading partners. In this system, the exchange rate is more stable than if the currency is pegged to that of a single country. However, it may still be susceptible to the influence of a dominant trade partner whose currency has a significant weightage in the basket of currencies. Singapore is an example of a country that has adopted this system.

Currency Board System

In this system, the money supply of the domestic currency is backed by an equivalent amount of a strong or reputable currency such as the US dollar or the euro. The objective of the system is to achieve greater economic stability and less exchange rate volatility. This type of exchange rate regime shares many of the characteristics of fixed rate systems. The volatility of exchange rates inherent in floating (or managed floating) rate systems is sometimes exploited by currency speculators. For example, currency speculators were among the catalysts that sparked the Asian Financial Crisis in 1997.

HOW EXCHANGE RATES ARE QUOTED

A foreign exchange rate is the price of a currency expressed in terms of another currency. The exchange rate may be expressed in the form of a direct quote or an indirect quote. A *direct quote* expresses the price of one unit of foreign currency in terms of units of the domestic currency. Let us assume that the domestic currency is the DC and the foreign currency is the US dollar. An example of a direct quote is 1.70 units of DC per US dollar (DC 1.70/US$1). On the other hand, an *indirect quote* expresses one unit of DC in terms of units of the foreign currency. Thus, one unit of DC being equivalent to 0.588 of a US dollar (DC 1 = US$0.588) is an example of an indirect quote. We can obtain the direct quote from an indirect quote and vice versa by taking the reciprocal of the exchange rate. For example, the direct quote is DC 1.70/US$1. The reciprocal of this quote is US$1/DC 1.70 = US$0.588, that is, one unit of DC is equivalent to US$0.588.

SPOT RATE AND FORWARD RATE

Exchange rates are quoted on two types of markets: *spot rate market* and *forward market*. A *spot exchange rate* is an exchange rate quoted for delivery two business days after the trade. A *forward exchange rate* is an exchange rate quoted in a forward contract for future delivery. A forward exchange contract is a contractual agreement between two parties, whereby they agree to deliver one currency in exchange for another, at a rate agreed upon today, on a specified future date later than two business days. For example, on 1 July 2008, an entity entered into a forward contract with a bank to sell US$100,000 at the forward rate of 1.80 units of domestic currency (DC 1.80) for each US dollar (DC 1.80/US$1) for delivery on 30 September 2008. Assume that the spot rate on 1 July 2008 was DC 1.82/US$1. This contract gave the entity the right to receive 180,000 units of DC on 30 September 2008, and an obligation to deliver US$100,000 to the bank on the same date.

page 678

The difference between the spot rate and the forward rate is called a premium or discount. Whether the difference is a premium or a discount depends on the relationship between the spot rate and the forward rate. The relationship is as follows:

Forward rate > spot rate → premium

Forward rate < spot rate → discount

In ordinary language, when we pay more for an item than its current market price, we are said to be paying a premium. Conversely, when we sell an item at a price less than its current market price, we are selling it at a discount. When an entity buys a foreign currency at a forward rate that is higher than the spot rate, it is buying at a premium. Likewise, when an entity sells a foreign currency at a forward rate that is lower than the spot rate, it is selling at a discount. However, it is important to note that it is possible for a foreign exchange forward purchase contract to be at a discount and a foreign exchange forward sale contract to be at a premium, although generally, a premium arises in a forward purchase contract and a discount is suffered on a forward sales contract.

The economic concept of covered interest parity provides an explanation for the forward premium or discount. According to this theory, the forward premium or discount on the exchange rate between two currencies is equal to the difference in interest rates between the two countries, assuming there are perfect market conditions and a free flow of capital between the countries. If they are not equal, later a process known as covered interest arbitrage occurs whereby currency traders (or arbitragers) transfer funds to the country where the interest rate is higher in order to earn a higher return while covering the foreign exchange risk with a forward sales contract. The arbitrage process results in a large amount of funds flowing into the country with the higher interest rate; the resulting liquidity creates a pressure for the interest rate to decrease while the interest rate is likely to increase in the country that experiences an outflow of liquidity. At the same time, the forward sale creates a downward pressure on the forward rate of the currency of the country with the lower interest rate. This process continues until the difference in interest rates between the two countries is offset by the forward exchange premium or discount.

The relationship between the forward rate and the spot rate is expressed in the form of the following equation:

$$F_t/S_t = (1+ r_1)/(1+r_2)$$

Assume that country 1 is the domestic country whose currency is the DC, and country 2 is the United States.

1. S_t is the number of DC per US dollar trading in the *spot* (immediate) market.
2. F_t is the *forward exchange rate* of DC per US dollar deliverable, or to be settled, at a fixed future date.
3. The terms r_1 and r_2 are the *interest rates* for the domestic country and the United States, respectively.

Rearranging the equation,

$$F_t = S_t\ (1 + r_1)/(1 + r_2)$$

For example, suppose the current spot rate between the US dollar and the domestic currency is DC 1.70, and the six-month interest rate in the United States is 2.5% while the six-month interest rate in the domestic country is 1%. The forward rate for a six-month contract to deliver (sell) US dollars would be:

$$1.70 \times (1.01/1.025) = \text{DC } 1.6751$$

In this example, the forward rate is at a discount to the spot rate. This is because the US interest rate is higher than the domestic interest rate (the interest rate on the domestic currency). Conversely, when the interest rate on the foreign currency is lower than the domestic interest rate, the forward rate is at a premium.

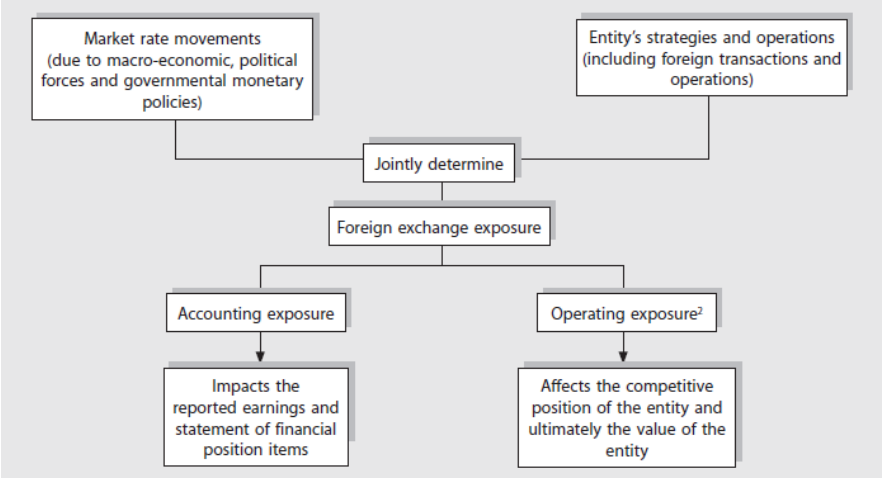
TYPES OF FOREIGN EXCHANGE RATE EXPOSURES

A business entity is said to have a foreign exchange rate exposure if changes in foreign exchange rates affect its operating cash flows or items in its financial statements. It is more correct, however, to speak of exposure in terms of a specific currency. For example, importers of Japanese goods have an exposure to the Japanese yen because if the yen appreciates, it will make the imported Japanese goods more expensive. The exposure of business entities to exchange rate changes is influenced to a large extent by their business strategies and operations. Thus, an entity that sells most of its products in overseas markets and imports most of its materials from other countries or an entity that has foreign subsidiaries is likely to be more exposed to foreign exchange rate changes than an entity that incurs most of its costs locally and operates solely in the home market. However, this does not mean that those entities, which do not have overseas operations, are not exposed to foreign exchange rate changes. They may still have an exposure if there are foreign competitors operating in their home market.

Foreign exchange rate exposure can be broadly categorized into two types — accounting and operating (or economic) exposures (see Figure 8.1). *Accounting exposure* is the exposure to changes in exchange rates as a result of an entity:

1. *Entering into foreign currency transactions* that result in contractual rights and obligations, such as receivables or payables denominated in foreign currencies; or
2. Having to *translate the foreign currency financial statements* of foreign operations (foreign subsidiaries, branches, joint-ventures and associated companies) from the local currencies of foreign operations to the group's reporting currency for the purpose of preparing consolidated financial statements.

FIGURE 8.1 How changes in foreign exchange rates affect a entity's exposure



Accounting exposure is quantifiable and directly impacts the income statement or statement of financial position. *Operating exposure*, on the other hand, is not easily quantifiable and reflects the impact of changes in real exchange rates[1] on an entity's operations in its input markets, where it obtains its materials, and its output markets, where it sells its finished products.

page 680

Operating Exposure

Operating exposure affects the competitive position of an entity and ultimately the value of the entity. Operating exposure can be explained by the Purchasing Power Parity (PPP) theory, which postulates that, in equilibrium, the exchange rate changes between two currencies should be matched by the inflation rate differential between the two countries. If PPP does not hold, the real exchange rate between the two currencies has changed, and this affects the competitive positions of business entities operating in these countries.

The following points should be noted with respect to operating exposure:

1. The real exchange rate may change even if the nominal exchange rate remains unchanged. This is because the inflation rate differential between two countries has changed.
2. Operating exposure arises from the strategic decisions that an entity makes about its input and output markets. Input markets are the countries in which an entity incurs its costs. Output markets are the countries from which an entity derives its revenues. For example, an entity's costs are incurred mainly in country A, but its revenues are obtained mainly by selling its products in country B. Anytime an entity decides to enter into a new market, or to locate a new plant in a foreign country, or to outsource production to a supplier from another country, it will affect the structure of its input and output markets and the entity's operating exposure to exchange rates.
3. An entity's operating exposure may also be affected by the presence of foreign competitors in the markets where the entity operates. Thus, an entity that operates purely in the domestic market (that is, it incurs its costs and derives its revenue locally) is not necessarily immune to operating exposure if there are foreign competitors operating in the local market. These foreign competitors' costs are likely to be incurred in a currency that is different from that of the domestic entity.

page 681

4. The extent of operating exposure of an entity depends on its cost responsiveness and the price responsiveness of its products to changes in foreign exchange rates (Lessard and Lightstone, 2002).[3] Cost responsiveness refers to the extent to which costs change in response to a change in exchange rates. Price responsiveness refers to the extent to which selling price changes because of changes in exchange rates.
5. Operating exposure tends to be high when there is a mismatch between cost responsiveness and price responsiveness (for example, if price responsiveness is high and cost responsiveness is low or when price responsiveness is low and cost responsiveness is high). As a result, cost responsiveness is not offset by price responsiveness.
6. One factor that influences price responsiveness is the demand elasticity of goods produced by an entity. For example, if the demand is relatively inelastic, an increase in cost due to changes in exchange rates (high cost responsiveness) could be passed on to customers in the form of higher selling prices (high price responsiveness) without affecting demand significantly. Demand elasticity depends on product differentiation, quality and branding. Hence, a product that is highly differentiated and unique may not suffer a loss in demand in foreign markets if the producer's exchange rates appreciate. However, the demand for a less differentiated and more homogeneous product of a foreign manufacturer may be substituted with local alternatives when the local currency depreciates.
7. Another factor that influences price responsiveness is competitors' response to any price changes by an entity. An entity may not change its selling prices even when it is able to do so if it thinks that its competitors will respond aggressively to such a change.

To illustrate the concept of operating exposure, consider the case of a domestic entity that manufactures air-conditioners for export to the United States where it competes with other US manufacturers. The domestic entity's costs are mainly incurred in the domestic country while the US competitors' costs are mainly incurred in the United States. Suppose that the US manufacturers' costs increase by 5% (assume that this is in line with the inflation rate in the United States), the domestic entity's costs increase by 1% (along with the inflation rate in the domestic country) and the domestic currency appreciates by 10% against the US dollar (the appreciation is more than as determined by the inflation rate differential). Expressed in terms of a common currency (the US dollar), the domestic entity's costs have increased by 11% (10% + 1%) while the US manufacturers' costs have increased by 5%. Because PPP did not hold, the domestic entity's competitive position is affected by the operating exposure.

In reality, the situation is not as straightforward. Theoretically, while the domestic entity's competitive position is affected by the change in the real exchange rate between the US dollar and the domestic currency, the actual impact on the domestic entity's competitive position is also influenced by other factors. If demand for the domestic entity's air-conditioners is relatively inelastic because of strong brand identification, the domestic entity will be able to pass on the increased cost (in US dollar terms) to its customers without much adverse effect on its market share. In this case, its operating exposure is likely to be small. This is because the domestic entity's high cost responsiveness (because of the change in real exchange rate) is offset by its high price responsiveness (because it is able to increase its price to offset the increase in cost).

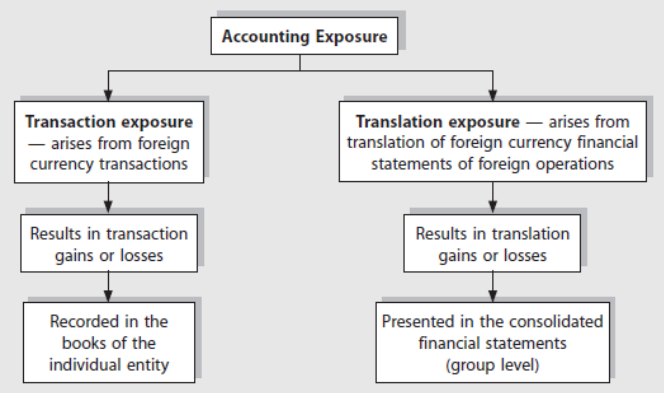
page 682

Financial reporting focuses on accounting exposure rather than operating exposure. Operating exposure is an economic concept rather than an accounting concept, and the impact of operating exposure cannot be reliably estimated. However, this does not mean that operating exposure is not important. For many large entities, operating exposure may be more important than accounting exposure.

Accounting Exposure

Accounting exposure can be further sub-divided into transaction exposure and translation exposure[4] (see Figure 8.2). Transaction exposure arises directly as the consequence of a business entity's foreign currency transactions. Typically, these transactions occur at one date and are settled at a later date, for example, foreign currency denominated accounts receivable and accounts payable. As a result of foreign exchange rate movements between these two dates, an exchange gain or loss (often referred to as transaction gain or loss) arises. Transaction exposure affects the cash flows of the entity. In contrast, translation gains and losses (also known as translation differences) do not affect cash flows. They arise because of the requirement to translate the financial statements prepared in a foreign currency to the presentation currency of the group.

FIGURE 8.2 Types of accounting exposure



CONCEPT OF FUNCTIONAL CURRENCY

IAS 21 *The Effects of Changes in Foreign Exchange Rates* employs the functional currency concept in accounting for the effects of changes in foreign exchange rates. The functional currency is the currency of the "primary economic environment in which the entity operates" (IAS 21:8). IAS 21 emphasizes that the functional currency of an entity should be the currency that influences the sales prices of goods and services. Normally, this will be the currency in which the sales prices of its goods and services are denominated and settled.

page 683

A business entity is required to designate a currency as its functional currency. Once the functional currency has been chosen, all other currencies are considered as foreign currencies relative to the functional currency. Thus, the effect of exchange rate changes on an entity's cash flows is measured and reported through the functional currency. The functional currency should be the currency in which an entity receives most of its cash receipts and expends cash outlays. For example, Hong Kong's mass rapid transit operator, MTR Corporation, generates its revenue and incurs most of its costs in Hong Kong, so its primary economic environment is Hong Kong and its cash flows are mainly in Hong Kong dollars. Its functional currency is the Hong Kong dollar; exchange rate changes generally do not affect its cash flows.

The economic environment in which an entity operates is not determined by national or political boundaries. A good example is Neptune Orient Lines (NOL) Ltd, the national shipping company of Singapore. It provides shipping services to its customers in various parts of the world. Its revenue is mainly in the form of freight charges, with a significant proportion of its operating costs attributable to fuel oil. Both freight charges and the price of fuel oil are set in international markets and are denominated in US dollars, the main international trading currency in shipping and commodities. NOL's primary economic environment is in fact the global freight market. Since the US dollar is the main trading currency in international trade, NOL's functional currency is the US dollar and not the Singapore dollar. This is notwithstanding the fact that NOL is a Singapore-domiciled company and part of its operating expenses, such as the administrative expenses of its head office in Singapore, are incurred in Singapore dollars.

Factors to indicate an entity's functional currency (IAS 21:9–10)

The determination of a functional currency of a business entity whose operations are mainly concentrated in one country is normally the currency of that country. However, for a large number of entities that operate regionally or globally, the determination of a functional currency is less straightforward. For example, in recent years, many companies in the Asia-Pacific region such as Hong Kong, Singapore, Taiwan, Japan, and Australia have relocated their manufacturing operations in neighboring countries such as Malaysia, Thailand, Indonesia and China to take advantage of their relatively lower labor and material costs. These companies sell most of their products in the United States and Europe. Their transactions and cash flows are often in multiple currencies so it may not be obvious which currency is the functional currency. IAS 21 has provided a set of indicators (paragraphs 9 and 10) to assist in the determination of the functional currency. The functional currency of an entity is determined by the following:

1. The currency that mainly influences the sales prices of goods and services (normally this is the currency in which sales are denominated and settled);
2. The currency of the country whose competitive forces and regulations determine the sales prices of goods and services;
3. The currency that mainly influences the labor, material and other costs of goods and services (this is normally the currency in which costs of labor and materials are denominated and settled);
4. The currency in which financing is obtained; or
5. The currency in which receipts from operating activities are usually retained.

page 684

The first three indicators are considered to be the primary indicators for identifying the functional currency (IAS 21:9) while the remaining indicators provide supportive evidence (IAS 21:10). In the event that the functional currency is not obvious because the indicators give mixed signals, the entity's management will have to consider all the factors taken together and exercise "judgement to determine the functional currency that most faithfully represents the economic effects of the underlying transactions, events and conditions" (IAS 21:12). In the case of a foreign operation, additional factors are considered to determine if its functional currency is the same as that of its parent (IAS 21:11). However, IAS 21 requires that the primary indicators be given greater emphasis.

Factors That Determine Identification of Foreign Operation's Functional Currency

A foreign operation's functional currency can be one of the following:

1. The local currency, that is, the currency of the country where the subsidiary operates;

2. The parent's functional currency; or
3. A third currency.

In most situations, the functional currency of a foreign operation is either the local currency or the parent's functional (and presentation) currency. In addition to the guidelines set out in IAS 21 paragraphs 9–10, the identification of the functional currency of a foreign subsidiary will also be determined by the nature of the operating relationship between the parent company and the foreign operation as shown in Table 8.1 and Figure 8.3.

FIGURE 8.3 Parent – subsidiary interdependencies

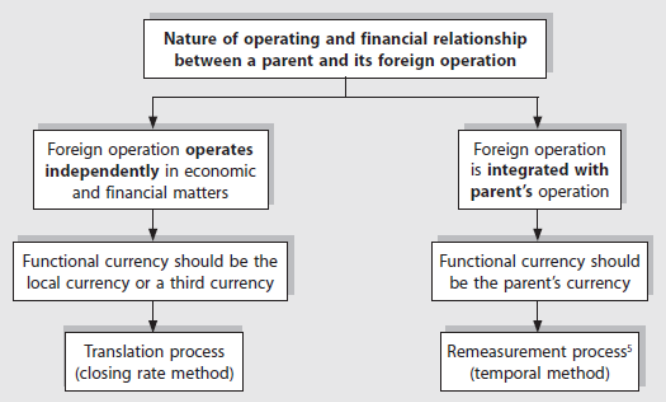


TABLE 8.1 Additional factors indicating whether a foreign operation's functional currency is the local currency or the parent's currency (IAS 21:11)

Indicator	Factors that indicate that the foreign operation's functional currency is the local currency	Factors that indicate that the foreign operation's functional currency is the parent's functional currency
Operating relationship with the parent	Operations are carried out with a "significant degree of autonomy" from the parent; for example, the foreign operation sources its own materials and labor, and sells its products in its own markets	Activities of the foreign operation are carried out as an extension of the parent; for example, the foreign operation acts as a processing center that obtains its materials mainly from its parent and then sells its finished goods back to the parent
Transactions with the parent	Transactions with the parent form a low proportion of the foreign operation's activities	Transactions with the parent form a high proportion of the foreign operation's total transactions
Cash flow interdependencies	Cash flows from the activities of the foreign operation do not directly affect the parent company	Cash flows from the activities of the foreign operation directly affect the cash flows of the parent
Financial independence	The foreign operation is self-sufficient and is not dependent on the parent company for financing	The foreign operation is dependent on the parent company for financing

page 685

Exchange Rates Used for Translations

There are two key translation objectives. One objective is to translate the net investment of foreign operations using the closing rate. Under a situation in which the foreign operation is integrated with the parent's operation, the functional currency of the foreign operation will take that of the parent. There is no translation as the currency is the same and the process is restricted to remeasurement only where any items denominated in other than the functional currency is a foreign currency.

Another objective is to translate the foreign currency transactions and monetary item balances of an entity using the remeasurement method. Please refer to Tables 8.2 and 8.3 for the exchange rates used for translating statement of financial position and income statement items, respectively.

TABLE 8.2 Exchange rates to be used for translating statement of financial position items

Statement of financial position	Closing rate method	Remeasurement method
Share capital and pre-acquisition retained earnings	Historical rate[6]	Historical rate[6]
Post-acquisition retained earnings	Not translated using a single exchange rate. This is a cumulative figure that is carried forward from year to year.	Not translated using a single exchange rate. This is a cumulative figure that is carried forward from year to year.
Monetary assets and liabilities (e.g. receivables, payables, cash and fixed deposits)	Closing rate	Closing rate
Non-monetary items at historical cost (e.g. fixed assets, investments at cost, prepaid items, inventories and intangible assets)	Closing rate	Rate at date of transaction for subsidiaries that have been acquired by the parent, the exchange rate on the date of acquisition serves as the historical rate for items that were acquired before the date of acquisition of the subsidiary by the parent
Non-monetary items at fair value (e.g. trading securities and revalued fixed assets)	Closing rate	Rate at the date of the revaluation or fair value determination

page 686

Translation gains or losses	Direct to equity (accumulated within a reserve account, e.g., Foreign Currency Translation Reserve or the FCTR)	Taken to income statement as gains or losses; remeasurement gain or loss arising from the revaluation of a non-monetary item is taken to other comprehensive income if the revaluation gains or losses are taken to other comprehensive income

TABLE 8.3 Exchange rates to be used for translating income statement items

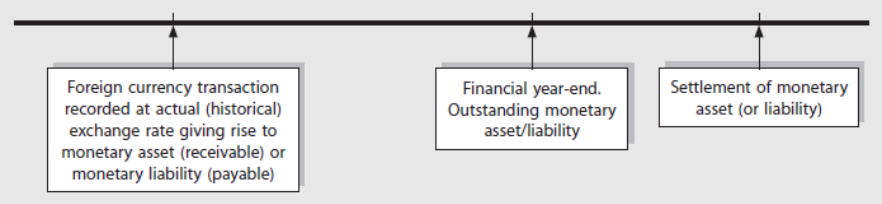
Income statement	Closing rate method	Remeasurement method
Sales, purchases, expenses, and income items that result in inflow/outflow of monetary items	Actual rate; however, for practical purpose, an average rate may be used on the assumption that the items are evenly spread out over the period and exchange rates do not fluctuate significantly during the year	Actual rate; however, for practical purpose, an average rate may be used
Cost of sales	Actual rate at the date when inventory is sold or average rate if the cost of sales is evenly spread out and exchange rates do not fluctuate significantly during the year	Historical rate of original purchase (i.e. rate at the date when the inventory was purchased)
Depreciation, amortization, and any other allocation of non-monetary items	Actual rate at the date when the expense is incurred, or average rate if the expense is incurred evenly throughout the year and exchange rates do not fluctuate significantly during the year	Historical rate of original acquisition (either at the date of purchase for historical cost items or the date of valuation for items carried at fair value)
Dividends and other appropriation of profits	Actual rate	Actual rate

Historical rates are used to translate share capital and pre-acquisition retained earnings to serve two purposes:

1. Translating at the historical rate will result in the translated amount being the same as the original cost of investment. In the consolidation worksheet, this ensures that the share capital and the pre-acquisition retained earnings will be completely eliminated against the cost of investment to arrive at goodwill as at the date of the acquisition. page 687
2. Using the historical rate to translate share capital and pre-acquisition retained earnings is necessary to "throw out" the cumulative translation difference from the date of acquisition. Translation difference is essentially the imbalance in the financial statements that arises from translations at rates that are different from the historical rates. This is, strictly speaking, not prescribed by IAS 21, but rather the current practice adopted by entities.

FOREIGN CURRENCY TRANSACTIONS OF A STAND-ALONE ENTITY (IAS 21:20–26)

Recall that a foreign currency is any currency other than the functional currency. The following time line diagram depicts a typical foreign currency transaction. The foreign currency transaction could be a purchase or sale of an asset on credit terms that may extend beyond the financial year-end.



IAS 21 paragraph 21 requires that a foreign currency transaction[7] be recorded (and measured) by applying to the foreign currency amount the spot exchange rate between the functional currency and the foreign currency at the date of the transaction. The exchange rate on the transaction date is often referred to as the *actual rate* (or the *historical rate*).

IAS 21 distinguishes between *monetary* and *non-monetary items* that arise from a foreign currency transaction. Monetary items are defined as "units of currency held and assets and liabilities to be received or paid in fixed or determinable *number of units of currency*" (IAS 21:8). The key feature that distinguishes a monetary item from a non-monetary item is the *right to receive* (or an *obligation to deliver*) *a fixed or determinable number of units of currency*. Monetary assets include cash, time deposits in the bank, and accounts and loans receivable. Investments in equity instruments are generally non-monetary items as the amount to be received from these instruments is not fixed but is dependent on market conditions and the right to receive is absent. Monetary liabilities include most liabilities such as accounts payable, loan payable (both short and long-term), and tax payable (including deferred tax). However, certain current liabilities are not monetary items. Examples include unearned revenue and deposits that are non-refundable.

page 688

Reporting at Subsequent Reporting Dates (IAS 21:23)

At each reporting date:

1. The foreign currency monetary items have to be adjusted (or remeasured) for exchange rate changes using the *closing rate* (sometimes also called the current rate) at reporting date. This is because monetary items are carried at contractual amounts that are eventually settled or received in a specific currency, and so should be adjusted for a change in the spot exchange rate. For example, a loan of US$100,000 is equivalent to DC 180,000 at 31 December 2008 based on the exchange rate of 1.80 units of domestic currency to US$1 (DC 1.80/US$1) on that date. On 31 December 2009, assume that the exchange rate has changed to DC 1.78/US$1. The loan in domestic currency has to be adjusted (or remeasured) using the exchange rate on that date to DC 178,000.
2. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction (IAS 21:23b). The historical cost of a non-monetary item is the foreign currency amount that was originally transacted to acquire the non-monetary item, for example, the purchase price of an inventory or a fixed asset multiplied by the exchange rate at the date of the transaction. For example, a domestic entity purchased an equipment costing US$100,000 on 1 July 2008 when the exchange rate was DC 1.81 to US$1. Assume functional currency to be the domestic currency. The equipment was measured at historical cost in foreign currency (USD in this case) and translated into the functional currency at DC 181,000. The equipment would not be adjusted for any subsequent changes in the exchange rate.
3. Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined (IAS 21:23c). Usually this date is the reporting date, hence, the closing rate is used to translate these items.

Transaction Exposure

From the foregoing discussion, *foreign currency monetary items and non-monetary items carried at fair value have to be remeasured for changes in foreign exchange rates*. They are said to be exposed to foreign exchange risk. The term *transaction exposure* is sometimes used to refer to items in the financial statements that are exposed to foreign exchange risk as a result of foreign currency transactions. As a consequence of the exposure, an exchange gain or loss arises when foreign exchange rates change between two accounting dates. Whether it results in a gain or a loss depends on the direction of the foreign exchange rate movement and whether the exposed item is an asset or a liability. This is summarized in Table 8.4.

TABLE 8.4 Impact of foreign exchange rate movements on exposed items

	Foreign currency depreciates	Foreign currency appreciates
Exposed asset, e.g. accounts receivable in US$	Exchange loss	Exchange gain
Exposed liability, e.g. loan payable in euros	Exchange gain	Exchange loss

Using the earlier example, an exposed liability (loan of US$100,000) gave rise to an exchange gain of DC 2,000 when the DC/US$ exchange rate changed from DC 1.80 to DC 1.78 (the US dollar had depreciated against the domestic currency). This means that at 31 December 20x4, if the loan were to be repaid, it would require a cash outflow of DC 178,000 instead of the original DC 180,000 at 31 December 20x4.

Treatment of Transaction Gains and Losses

Exchange gains and losses (also referred to as transaction or exchange differences) on monetary items such as accounts receivable and accounts payable are recognized in the profit or loss of the entity as they arise (IAS 21:28). These are typically recognized:

1. *On the date of settlement* of foreign currency monetary items. The *exchange rate on the date of settlement* of a foreign currency monetary item differs from the exchange rate at which it is first recorded or last translated at reporting date, thus giving rise to a realized exchange gain or loss; and
2. *At reporting date*. Foreign currency monetary items are translated at the *closing rate* that is different from the rate at which they were initially recorded during the period, or reported in financial statements of the previous period. In this case, the exchange gain or loss is an unrealized gain or loss.

Exchange differences on non-monetary items are recognized in the same way as the gain or loss on the item is recognized. Thus, when a gain or loss on a non-monetary item that is measured at fair value (such as an equity investment classified as FVOCI securities) is recognized directly in other comprehensive income, "any exchange component of that gain or loss is also recognized in other comprehensive income." Conversely, when a gain or loss on a non-monetary item is recognized in profit or loss, any exchange in the gain or loss is also recognized in profit or loss component (IAS 21:30).

Net Investment in Foreign Operation

An entity may have a monetary item in the form of a receivable or payable to a foreign operation for which settlement is neither planned for nor it is likely to occur in the foreseeable future. Paragraph 15 of IAS 21 explains that such items are, in substance, a part of that entity's net investment in the foreign operation. The standard further clarifies that these monetary items may include long-term receivables or payables but do not include trade receivables and payables.

Paragraph 32 of IAS 21 sets out that the accounting treatment for exchange differences arising from monetary items are, in substance, part of an entity's net investment in a foreign operation. Specifically, such exchange differences are recognized in profit or loss in the separate financial statements of the reporting entity or individual financial statements of the foreign operation. In the consolidated financial statements that include the foreign operation and the reporting entity, these exchange differences are recognized initially in other comprehensive income and accumulated in equity. Upon disposal[8] of the net investment, the cumulative exchange differences are reclassified from equity to profit and loss. This topic will be further explored under the section on exchange differences arising from intercompany transactions below.

Illustration 8.1 shows the accounting for foreign currency transactions.

ILLUSTRATION 8.1 Foreign currency transactions

Ace Corporation, whose functional currency is the domestic currency (DC), entered into the following transactions during 20x2 and 20x3.

1. On 1 November 20x2, Ace purchased 1,000 shares of Hitech Inc (a listed company in the United States) at a price of US$80 per share. Ace classified the investment as trading securities. The DC/US$ exchange rates on 1 November 20x2 and 31 December 20x2 were DC 1.79 and DC 1.82, respectively. The price of Hitech Inc shares at 31 December 20x2 was US$100.
2. On 10 December 20x2, Ace purchased equipment from a German company invoiced at €100,000 to be settled on 28 February 20x3. The DC/euro exchange rates on 10 December 20x2, 31 December 20x2 and 28 February 20x3 were DC 2.82, DC 2.85 and DC 2.95, respectively.

Ace Corporation's financial year ends on 31 December. The entries to record these transactions and the effects of changes in exchange rates are as follows:

1 Nov 20x2	Dr Investment in trading securities	143,200	
	Cr Cash		143,200
	To record the purchase of shares in Hitech Inc at a cost of US$80,000 at the exchange rate of DC 1.79/US$1		
10 Dec 20x2	Dr Equipment	282,000	
	Cr Accounts payable (euros)		282,000
	To record the purchase of equipment costing 100,000 euros at the exchange rate of DC 2.82/€1		
31 Dec 20x2	Dr Investment in trading securities	38,800	

	Cr Gain in fair value of trading securities		38,800
	Gain in fair value of Hitech's share: 100 × 1,000 × 1.82 – 143,200		
Dr Exchange loss		3,000	
	Cr Accounts payable (euros)		3,000
	To record exchange loss on accounts payable in euros: 100,000 euros × (DC 2.85 – DC 2.82)		
28 Feb 20x3	Dr Exchange loss	10,000	
	Cr Accounts payable (euros)		10,000
	To record exchange loss on accounts payable in euros: 100,000 × (DC 2.95 – DC 2.85)		
Dr Accounts payable (euros)		295,000	
	Cr Cash		295,000
	To record settlement of accounts payable in euros at the spot rate of DC 2.95/€1		

Note the following:

1. The investment in Hitech Inc shares is a non-monetary item that is carried at fair value as it is classified as trading securities (refer IFRS 9 and Chapter 9). The investment is revalued and translated at the rate on the date of revaluation, that is, 31 December 20x2. The revalued carrying amount in the domestic currency is 1,000 × US$100 × DC 1.82 = DC 182,000. The gain of DC 38,800 (DC 182,000 – DC 143,200) comprises the exchange gain (1,000 × US$80 × (DC 1.82 – DC 1.79) = DC 2,400) and other gain in the fair value (DC 36,400).[9]
2. The equipment is translated at the spot rate at the date of purchase and, being a non-monetary item, is carried at cost. It is not adjusted for the change in the exchange rate at reporting date.
3. The accounts payable in euros is a monetary item and is remeasured using the closing rate at reporting date. The exchange loss is expensed off to the income statement.

TRANSLATION OF FOREIGN CURRENCY FINANCIAL STATEMENTS

The preceding section explains how a stand-alone entity should translate its foreign currency transactions. This section shows how a reporting entity (e.g. a parent of a foreign subsidiary or an investor of a foreign associate company) should translate the foreign currency financial statements of its foreign operation for the purpose of preparing consolidated financial statements or financial statements that incorporate equity-accounted results of a foreign associate. Foreign operations include subsidiaries, associates, joint-ventures, or branches.

Presentation Currency versus Functional Currency

For the purpose of translation, it is necessary to distinguish between the *presentation currency* and the *functional currency*. A stand-alone entity is required to determine its functional currency and record its transactions in that currency. It is free, however, to present its financial statements in any currency. The currency in which the financial statements are presented is called the presentation currency. In most cases, a stand-alone entity's presentation currency is also its functional currency. For example, using the example of Neptune Orient Lines mentioned earlier, its functional and presentation currency is the US dollar. It may, if it chooses, present its financial statements in Singapore dollars.

In the case of a group entity (a parent and its subsidiaries), the presentation currency of the group is the presentation currency of the parent company, which is the reporting entity. It can be reasonably assumed that the parent's functional currency is also its presentation currency. Thus, the presentation currency of a foreign operation (subsidiary) of a US parent company is the parent's reporting currency (the US dollar).

IAS 21 specifies two approaches to translation and the conditions under which each approach should be used. The translation approach to be used depends on whether the functional currency of the foreign subsidiary is the same as the presentation currency and whether the books are kept in the functional currency. This section explains the translation approach when the books are kept in the functional currency. The second approach when the books are kept in a currency different from the functional currency is covered in Appendix 8A.

Translation from Functional Currency to Presentation Currency

The financial statements of an entity are prepared in its functional currency and translated into the presentation currency, when it is different from the functional currency. This method, as set out in IAS 21 paragraph 39, is applicable to the following cases:

1. A stand-alone entity that records its books in its functional currency and presents its financial statement in another currency. For example, a company will have to use this method if it designates functional currency is the US dollar but chooses to present its financial statements in euros; or
2. A foreign operation such as a foreign branch, subsidiary, associate or joint ventures that records its books in its functional currency and translates its financial statements into the parent's reporting currency for the purpose of preparation of consolidated financial statements.

The method whereby the financial statements are translated from the functional currency into the presentation currency is known as the *closing rate method*.

The translation procedures applicable when the foreign operation's functional currency is the local currency, the parent's currency or a third currency are summarized in Table 8.5.[10] It is assumed that the parent's functional and presentation currency is the dollar ($).

TABLE 8.5 Functional currency and translation process

Foreign operation's	Foreign operation's	Translation or Remeasurement

financial statements are in:	functional currency is:	(Assume that the presentation currency in each scenario is the parent's currency ($))
The local currency (LC)	The local currency (LC)	Functional currency (LC) is different from the group's presentation currency ($) Translate into $ using closing rate method according to IAS 21:39
The local currency (LC)	The parent's functional currency ($)	Functional currency is different from local currency in which transactions are recorded. All transactions recorded in LC are deemed foreign currency transactions (IAS 21:8). The transactions recorded in LC need to be remeasured from LC to $ according to IAS 21:20–26. Effectively, the foreign operation is viewed as an extension of the parent (the parent and the subsidiary are regarded as one entity). As such, the foreign operation's transactions are deemed foreign currency transactions undertaken by the parent itself. The foreign operation's assets and liabilities are remeasured as if they are the parent's. When remeasuring into the functional currency, consideration is given whether the item is a monetary or non-monetary item, and whether it is measured at cost or at fair value.
Parent's functional currency	Parent's functional currency	No translation or remeasurement necessary; financial statements are already presented in Parent's functional currency $
The local currency (LC)	A third currency	Remeasure from LC into the functional currency; then translate into Parent's functional currency $

Foreign Operation: An Autonomous Entity

The translation from functional currency to presentation currency uses the closing rate method. The main features of the closing rate method are summarized as follows:

1. Assets and liabilities, both monetary and non-monetary, are translated at closing rate;
2. Income and expense items of the foreign operation are translated at exchange rates at the dates of the transactions, that is, actual or spot rates. For practical reasons, the average rate is usually used for items whose transactions are numerous and occur evenly throughout the year, for example, sales, purchases and operating expenses; and exchange rates do not fluctuate significantly during the year; and
3. Translation gains or losses are taken to other comprehensive income until the investment is disposed of (IAS 21:39).

Under the closing rate method, the parent's perspective of the foreign operation as an autonomous entity implies that the foreign operation is considered as a passive investment. The parent aims to obtain a reasonable return from the investment in the form of dividends and capital appreciation upon disposal of the investment. The value of the investment is influenced by many factors, among which are the profitability of the operation and the changes in exchange rates. For example, if the foreign currency appreciates, the value of the investment also appreciates, and vice versa. The effect of exchange rate movements on the value of the investment is best measured by the closing rate. As the investment is represented by the net assets of the foreign operation (assets minus liabilities), it follows, therefore, that all assets and liabilities should be translated using the closing rate. However, the translation gain or loss would not have any immediate impact on the parent's cash flows because the investment in the foreign operation is presumed to be long-term. Hence, translation differences are taken to other comprehensive income rather than to the income statement. The cumulative translation difference (often referred to as translation adjustments or foreign currency translation reserves) is taken to the income statement when the foreign operation is disposed of (IAS 21:48).

Foreign Operations Integrated with Parent

The foreign subsidiary's operations are closely integrated with those of the parent such that they are deemed to be an extension of the parent's domestic operations. Hence, the functional currency of the subsidiary is the parent's currency. The parent and the foreign operation are considered as a single economic entity; the transactions of the foreign operation are deemed to be the foreign currency transactions of the parent (as these transactions are denominated in the currency of the country where the foreign operation is located). The economic effects of a change in exchange rates on the foreign operation relate to individual assets and liabilities, which impact the parent's cash flows directly (SFAS 52 *Summary*). Therefore, the exchange gains and losses from remeasuring the operation's financial statements are taken to profit or loss and not to other comprehensive income. Remeasurement of a foreign operation's financial statement is intended to achieve the same results as the case where the parent, as a stand-alone entity, transacts directly in foreign currency transactions entered into by the foreign operation. Thus, the procedures for treatment of foreign currency transactions of a stand-alone entity (IAS 21:20-26) apply to a foreign operation whose functional currency is the parent's currency. There will be no translation as the functional currency of the foreign operation is the same as the parent's currency.

For example, if the Malaysian subsidiary, closely integrated with its Singapore parent, purchased equipment, it is as if the Singapore parent had purchased the equipment in Malaysian ringgit from a vendor. Since the equipment is a non-monetary asset, it is measured on initial recognition at the actual exchange rate on the date of the transaction (the historical rate). In subsequent periods, the Malaysian subsidiary's depreciation expense is remeasured at the historical rate (the rate on the date of purchase of the plant and machinery), and the net book value of the fixed asset is also remeasured at the historical rate. Additionally, if the Malaysian subsidiary had an accounts receivable balance, it is as if the Singapore parent had such a balance. Being a monetary item, it is remeasured at the closing rate. The remeasurement gain or loss on the monetary item is treated as exchange gain or loss and taken to the income statement.

Recall the basic accounting equation:

$$\text{Equity}\left(\begin{array}{c}\text{Share capital}\\+\\\text{Retained earnings}\\+\\\text{Other equity items}\end{array}\right) = \text{Assets} - \text{Liabilities}$$

$$= \text{Net assets}$$

By applying a different rate to each element in the equation, a difference will inevitably arise under the closing rate method. Since assets and liabilities are translated at year-end rates, but components of equity are translated at other rates (current profit at average rate, dividends at actual rate, share capital, and pre-acquisition earnings at historical rates), the left-hand side of the equation will not be equal to the right-hand side of the equation (the translated net assets which are at closing rate). The difference (a balancing figure) is the translation gain or loss. Although it is a balancing figure, the translation gain or loss can be verified through a reconciliation check.

Under the closing rate method, the translation differences are taken to other comprehensive income and accumulated in equity (commonly referred to as a Foreign Currency Translation Reserve (FCTR) or translation adjustment. These exchange differences are accumulated from year to year until the investment in the foreign operation is disposed of. The movements in the FCTR are disclosed in the statement of comprehensive income and Statement of Changes in Equity.

IAS 21 paragraph 41 states that the exchange differences come from:

- Income and expenses translated at the rates on the dates of transactions versus assets/liabilities at the closing rate;

- Opening net assets translated at the previous closing rate versus the current closing rate.

These exchange differences are presented in a separate component of equity and are not recognized in profit or loss under the disposal of the foreign operation. This is because the changes in exchange rates have no direct effect on present or future cash flows.

Translation Exposure

A translation gain or loss arises when the exchange rates used in translating the current year's financial statements are different from those used in translating the previous year's financial statements. Assets and liabilities that are translated at the closing rate are considered to be exposed while those that are translated at historical rates preserve their original carrying amounts and do not give rise to translation differences.

Translation exposure is measured by the net amount of assets or liabilities in a foreign currency statement of financial position that is translated at the closing exchange rate. Under the closing rate method, since assets and liabilities are translated at the closing rate, the net assets (total assets minus total liabilities = shareholders' equity of the foreign operation) are exposed to changes in exchange rates.

The exposed items in the case of the remeasurement process are mainly the monetary assets and the monetary liabilities. The net exposed position is either a net monetary asset (monetary assets exceeding monetary liabilities) or a net monetary liability (monetary liabilities exceeding monetary assets). However, certain non-monetary items also give rise to translation differences. These are non-monetary items measured at fair value (such as investments); items whose basis of measurement has changed during the year, for example, inventory (from historical cost to net realizable value) and properties that have been revalued during the year. The exchange gain or loss on such non-monetary items is accounted for in the same way that the gain or loss on the revalued item is recognized. For example, a gain or loss on the revaluation of land or an equity instrument classified as fair value through other comprehensive income (FVOCI) is taken to other comprehensive income. Similarly, the exchange component of the gain or loss on the non-monetary item is also taken to other comprehensive income (IAS 21:30).

page 695

Illustration 8.2 shows the process of translation of the foreign currency financial statements of a foreign operation to the presentation currency using the closing rate method, and remeasurement of the foreign currency financial statements to the foreign operation's functional currency.

ILLUSTRATION 8.2 Translation of a foreign subsidiary's financial statements

On 31 December 20x0, Durian Pie Ltd, whose functional and presentation currency is the dollar ($), acquired the entire share capital of Mango Pie, a foreign company whose financial statements are prepared in the local currency (the FC). The following is the statement of financial position of Mango Pie at the date of acquisition.

MANGO PIE
Statement of Financial Position
As at 31 December 20x0

	FC
Fixed assets (net)	$290,000
Current assets:	
Prepaid insurance	18,000
Inventories	60,000
Accounts receivable	50,000
Cash	14,000
Total assets	$432,000
Less accounts payable	(100,000)
Net assets	$332,000
Share capital	$300,000
Retained earnings	32,000
Total equity	$332,000

Additional information:

(a) Fixed assets comprised of the following:

	Net book value (FC)	Annual depreciation (FC)
Land	50,000	0
Buildings	100,000	5,000
Equipment	140,000	28,000
	290,000	33,000

(b) Prepaid insurance expired on 30 June 20x2.

page 696

The following are the income statements and statements of financial position of Mango Pie for the years ended 31 December 20x1 and 31 December 20x2.

MANGO PIE
Income Statement
For the Years Ended 31 December 20x1 and 20x2

	20x1 FC		20x2 FC	
Sales		$600,000		$800,000
Opening inventories	$ 60,000		$ 80,000	
Purchases	400,000		450,000	
	$460,000		$530,000	
Closing inventories	(80,000)		(100,000)	
Cost of goods sold		(380,000)		(430,000)
Gross profit		$220,000		$370,000
Depreciation	$(33,000)		$ (43,000)	
Insurance	(12,000)		(6,000)	
Other operating expenses	(78,000)		(84,000)	
		(123,000)		(133,000)
Profit before tax		$ 97,000		$237,000
Taxation		(20,000)		(48,000)
Profit after tax		$ 77,000		$189,000
Dividends paid		(25,000)		(50,000)
Profit retained		$ 52,000		$139,000

MANGO PIE
Statement of Financial Position
As at 31 December 20x1 and 20x2

	20x1 FC	20x2 FC
Fixed assets (net)	$ 257,000	$ 334,000
Current assets:		
Inventories	80,000	100,000
Prepaid insurance	6,000	
Accounts receivable	70,000	105,000
Cash	89,000	150,000
Total assets	$ 502,000	$ 689,000
Less:		
Current liabilities:		
Accounts payable	(98,000)	(116,000)
Tax payable	(20,000)	(30,000)
	$(118,000)	$(146,000)
Net assets	$ 384,000	$ 543,000
Share capital	$ 300,000	$ 300,000
Retained earnings	84,000	223,000
Revaluation surplus		20,000
Total equity	$ 384,000	$ 543,000

Additional information:

(a) During 20x2, additional plant and equipment costing FC 100,000 were purchased. The exchange rate at the date of purchase was FC 1 = $0.73. The plant and equipment were depreciated on a straight-line basis over ten years. Assume that a full year's depreciation was recorded in 20x2.

(b) Land was revalued from FC 50,000 to FC 70,000 on 30 September 20x2.

(c) Relevant exchange rates are as follows:

	FC 1 =
31 December 20x0	$0.81
Average for 20x1	$0.78
At 31 December 20x1	$0.76
Average rate when closing inventories (20x1) were acquired	$0.77
Average rate when closing inventories (20x2) were acquired	$0.74
Average rate for 20x2	$0.75
Dividends paid (20x1)	$0.77
Dividends paid (20x2)	$0.72
30 September 20x2	$0.71
At 31 December 20x2	$0.70

(d) Sales and expenses were incurred evenly throughout each reporting period.

Functional Currency Is the Local Currency of the Subsidiary (FC)

The translated 20x1 income statement account using the closing rate method is shown below:

	FC	Rate	S$
Sales	600,000	0.78 (Note 1)	468,000
Cost of goods sold	(380,000)	0.78	(296,400)
Gross profit	220,000		171,600
Depreciation expense	(33,000)	0.78	(25,740)
Insurance expense	(12,000)	0.78	(9,360)
Operating expenses	(78,000)	0.78	(60,840)
Profit before tax	97,000		75,660
Taxation	(20,000)	0.78	(15,600)
Profit after tax	77,000		60,060
Dividends paid	(25,000)	0.77	(19,250)
	52,000		40,810
Retained earnings, 1 January	32,000	0.81 (Note 2)	25,920
Retained earnings, 31 December	84,000		66,730

Note 1: Sales and expenses, including tax expense, are translated at the average rate as they occur evenly throughout the year and exchange rates for the year did not fluctuate significantly. The exception is dividends paid, which is translated at the actual rate as it is a one-time transaction.

Note 2: The beginning retained earnings represent entirely the pre-acquisition retained earnings. Therefore, it is translated using the historical rate (the rate at the date of acquisition). However, if the beginning retained earnings are a composite of pre-acquisition and post-acquisition retained earnings, it is not possible to translate the amount at a single rate, as the amount is an accumulation of two or more years' earnings. In practice, we use the figure carried forward from the previous year's translated financial statements.

The translated 20x1 statement of financial position using the closing rate method is shown below:

MANGO PIE
Statement of Financial Position
As at 31 December 20x1

	FC		Rate	$
Fixed assets (net)	257,000		0.76	195,320
Current assets:				
Inventories	80,000		0.76	60,800
Prepaid insurance	6,000		0.76	4,560
Accounts receivable	70,000		0.76	53,200
Cash	89,000		0.76	67,640
Total assets	502,000			381,520
Less:				
Current liabilities:				
Accounts payable	(98,000)		0.76	(74,480)
Tax payable	(20,000)		0.76	(15,200)
	(118,000)			(89,680)
Net assets	384,000			291,840
Share capital	300,000		0.81	243,000
Retained earnings	84,000	(from I/S)		66,730
Foreign currency translation reserve				(17,890)
Total equity	384,000			291,840

The translation loss of $17,890 can be obtained in one of two ways. It can be obtained as a balancing figure by first translating the net assets (FC 384,000) at the closing rate of $0.76 to obtain $291,840. This figure should equal the translated amount on the equity side of the accounting equation. The share capital is translated at the historical rate and the translated retained earnings are obtained from the income statement. This leaves the Foreign Currency Translation Reserve as a balancing figure.

The translation difference can also be obtained by doing a reconciliation check (or proof of translation gain or loss) as follows:

	FC	Rate	$
Net assets at beginning of year	332,000	0.81	268,920
Adjustments for changes in net asset position during year:			
Net income for year	77,000	0.78	60,060

Dividends paid	(25,000)	0.77	(19,250)	
			309,730	(A)
Net assets at end of year	384,000	0.76	291,840	(B)
Translation gain (loss) (B – A)			(17,890)	

For further reading, refer to V.M. Perampalam, "Translation Exposure and Translation Methods", *Singapore Accountant*, June 1987.

The translation loss of $17,890 is the result of the depreciation of the FC against the dollar during the year. The translation difference resulted from:

(a) The exposed opening net assets (FC 332,000) that were brought forward at the previous closing rate ($0.81); and

(b) Movements in net assets during the year, which is the net profit for the year translated at the average rate and the dividends paid at the actual rate.

The sum of (a) and (b) represented by (A) is the unadjusted net assets in dollars at year-end. At year-end, the net assets carried forward (FC 384,000) are translated at the closing rate to obtain $291,840 (B). There is a "shrinkage" in the net assets at the end of the year arising from the depreciation of the FC. The difference between the two amounts (B and A) is the translation difference for the year.

The following worked example shows the translated financial statements of Mango Pie for 20x2 under the assumption that the functional currency of Mango Pie is the local currency of the subsidiary (FC). The translated 20x2 income statement and statement of financial position when the functional currency is the local currency of the subsidiary (closing rate method) are shown below.

MANGO PIE
Income Statement
For the Year Ended 31 December 20x2

	FC	Rate	$
Sales	800,000	0.75	600,000
Cost of goods sold	(430,000)	0.75	(322,500)
Gross profit	370,000		277,500
Depreciation expense	(43,000)	0.75	(32,250)
Insurance expense	(6,000)	0.75	(4,500)
Operating expenses	(84,000)	0.75	(63,000)
Profit before tax	237,000		177,750
Taxation	(48,000)	0.75	(36,000)
Profit after tax	189,000		141,750
Dividends paid	(50,000)	0.72	(36,000)
	139,000		105,750
Retained earnings, 1 January	84,000		66,730
Retained earnings, 31 December	223,000		172,480

MANGO PIE
Statement of Financial Position
As at 31 December 20x2

	FC	Rate	$
Fixed assets (net)	334,000	0.70	233,800
Current assets:			
Inventories	100,000	0.70	70,000
Accounts receivable	105,000	0.70	73,500
Cash	150,000	0.70	105,000
Total assets	689,000		482,300
Less:			
Current liabilities:			
Accounts payable	(116,000)	0.70	(81,200)
Tax payable	(30,000)	0.70	(21,000)
	(146,000)		(102,200)
Net assets	543,000		380,100
Share capital	300,000	0.81	243,000
Retained earnings	223,000	(from I/S)	172,480
Revaluation surplus	20,000	0.71	14,200
FCTR		(Note 1)	(49,580)
Total equity	543,000		380,100

Note 1: Foreign Currency Translation Reserves (FCTR)

	FC	Rate	$	
Net assets at start of year	384,000	0.76	291,840	
Net profit for year	189,000	0.75	141,750	
Revaluation surplus	20,000	0.71	14,200	
Dividends	(50,000)	0.72	(36,000)	
			411,790	(A)
Net assets at end of year	543,000	0.7	380,100	(B)
Translation difference (B – A)			(31,690)	
FCTR, 1 January			(17,890)	
FCTR, 31 December			(49,580)	

GOODWILL ARISING FROM THE ACQUISITION OF FOREIGN SUBSIDIARIES

When a company acquires a controlling equity interest in another company, the excess of the purchase price over the acquirer's interest in the fair value of identifiable net assets of the acquiree is recognized as goodwill on consolidation at the date of acquisition. In the context of the acquisition of a foreign company, the issue arises as to whether goodwill is an asset of the acquiree or an asset in the acquirer's books. If it is an asset of the acquiree, the goodwill is a foreign asset, which should be translated in the same manner as any other asset of the acquiree, which may give rise to a translation difference. However, if it is treated as an asset in the acquirer's books, there is no need for translation.

IAS 21 paragraph 47 states:

> Any goodwill arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition of that foreign operation shall be treated as assets and liabilities of the foreign operation.

Accordingly, goodwill has to be measured in the functional currency of the foreign operation. If the functional currency of the foreign operation is the local currency, the goodwill on acquisition is to be translated at the closing rate. On the other hand, if the functional currency of the foreign operation is the parent's currency, goodwill on acquisition is treated as a non-monetary asset and remeasured at the exchange rate at the date of the acquisition of the foreign operation. Illustration 8.3 shows the translation of goodwill and fair value differentials under IAS 21.

ILLUSTRATION 8.3 Goodwill and fair value differentials

Straits Corporation, whose functional currency is the dollar ($), acquired the entire share capital of Peninsular Company, a Malaysian company, on 31 December 20x3 at a cost of $2,000,000. At the date of acquisition, Peninsular Company's paid-up capital and retained earnings were RM 3,000,000 and RM 500,000, respectively. The assets and liabilities of Peninsular Company at the date of acquisition by Straits Corporation approximated their fair values except for a building that was undervalued by RM 100,000. Deferred tax liability on the undervalued building was RM 20,000. The exchange rate at 31 December 20x3 was RM 1 = $0.50.

The goodwill in dollars is computed as follows:

Cost of investment	$2,000,000
Fair value of net assets (RM 3,580,000 × 0.5)	1,790,000
Goodwill	$ 210,000
Goodwill in RM ($210,000 ÷ 0.50)	RM 420,000

The following consolidation journal entries are recorded in the consolidation worksheet in dollars:

31 Dec 20x3	Dr Share capital	1,500,000	
	Dr Retained earnings	250,000	
	Dr Building	50,000	
	Dr Goodwill	210,000	
	Cr Investment in Peninsular		2,000,000
	Cr Deferred tax liability		10,000

Assume that the building is depreciated on a straight line basis over a period of 25 years. The exchange rate at 31 December 20x4 was RM 1 = $0.45; and the average rate for 20x4 was RM 1 = $0.48.

Under the closing rate method (the functional currency of Peninsular Company is the ringgit), there will be translation adjustments on the goodwill and the fair value differential relating to the building and deferred tax liability as they are considered net assets of Peninsular Company and are translated at the closing rate. The translation adjustments are as follows:

	$
On goodwill	
Goodwill at 31 December 20x3 (RM 420,000 × 0.5)	210,000
Goodwill at 31 December 20x4 (RM 420,000 × 0.45)	189,000
Translation adjustment on goodwill	(21,000)
On the fair value differential (after-tax)	
Differential at 31 December 20x3 (RM 100,000 × 0.5 × 0.80)	40,000
Depreciation less tax (RM 4,000 × 0.48 × 0.80)	(1,536)
	38,464
Differential at 31 December 20x4 (RM 96,000 × 0.45 × 0.80)	34,560
Translation adjustment	(3,904)

The impact of the above calculations for translations on goodwill and fair value differentials as at 31 December 2014 are shown in the following journal entries:

	$	$
Dr Foreign currency translation reserve (Equity)	21,000	
Cr Goodwill		21,000
Translation adjustment on goodwill		
Dr Foreign currency translation reserve (Equity)	3,904	
Dr Deferred tax liability	976	
Cr Building		4,880
Translation adjustment on building		

The foreign exchange translations on goodwill and fair value differentials should be factored in the reconciliation check for FCTR (foreign currency translation reserve).

We provide another example of the translations of goodwill and fair value differentials below. Co Y is a 90%-owned subsidiary of SingCo and the functional currency of Co Y is the US dollar (USD). The financial statements kept in US dollar are shown below. We now translate the financial statements into the Singapore dollar (SGD), which is the presentation currency.

Co Y
Income Statement
For the Year Ended 31 December 20x5

		USD	Rate	SGD
Sales		1,000,000	1.68	1,680,000
Cost of Sales				
Opening inventory	160,000			
Purchases	800,000			
	960,000			
Less closing inventory	(240,000)			
Less Cost of Sales		(720,000)	1.68	(1,209,600)
Gross profit		280,000		470,400
Operating expenses		(50,000)	1.68	(84,000)
Interest expense		(8,000)	1.68	(13,440)
Depreciation		(40,000)	1.68	(67,200)
Amortization of patents		(6,000)	1.68	(10,080)
Profit before tax		176,000		295,680
Tax expense		(100,000)	1.68	(168,000)
Profit after tax		76,000		127,680
Dividends declared		(20,000)	1.65	(33,000)
Profit retained		56,000		94,680
Retained earnings, 1 Jan 20x5		200,000	Note 1	344,000
Retained earnings, 31 Dec 20x5		256,000	To SFP	438,680

Co Y
Statement of Financial Position
As at 31 December 20x5

		USD	Rate	SGD
Fixed assets, net book value		320,000	1.60	512,000
Patents		60,000	1.60	96,000
Inventory		240,000	1.60	384,000
Accounts receivable		100,000	1.60	160,000
Cash		10,000	1.60	16,000
		730,000		1,168,000
Accounts payable		374,000	1.60	598,400
Share capital (Note 3)		100,000	2.10	210,000
Retained earnings				
Pre-acquisition (Note 3)	120,000		2.10	252,000
Post-acquisition	136,000			186,680
		256,000	From I/S	438,680
Foreign Currency Translation Reserve (FCTR)			Note 2	(79,080)
		730,000		1,168,000

Co Y
Statement of Financial Position
As at 31 December 20x5

	USD	Rate	SGD

Exchange rates are as follows:

	SGD to USD1
On date of acquisition of Co Y, 1 Jan 20x3	2.1
Purchase of patents by Co Y, 1 Jan 20x2	2.2
Re-sale of undervalued inventory, 1 July 20x3	1.95
Purchase of fixed assets by Co Y, 1 Jan 20x4	1.9
Purchase of opening inventory during Dec 20x4	1.8
Purchase of closing inventory during Dec 20x5	1.64
1 Jan 20x5	1.78
Average rate for 20x5	1.68
31 Dec 20x5	1.6
Date of dividend declaration	1.65

- Assume that sales, purchases, operating expenses, interest, and tax occur evenly throughout the year
- Foreign Currency Translation Reserve (cumulative translation losses to 31 Dec 20x4) is a loss of SGD 20,000
- Fair value of consideration transferred was USD 300,000 and fair value of non-controlling interests as at acquisition date was USD 30,000
- Undervalued inventory at acquisition date was USD 20,000. Tax rate was 20%
- Undervalued inventory was sold on 1 July 20x3 (assuming FIFO)
- Translate the financial statements to its presentation currency

Workings:

(1) Reconstruct the Statement of Financial Position as at 31 Dec 20x4 to determine the retained earnings in SGD at the beginning of the year.

Co Y
Statement of Financial Position
As at 31 December 20x4

	USD	Rate	SGD
Net assets	300,000	1.78	534,000
Share capital	100,000	2.10	210,000
Retained earnings	200,000		344,000
FCTR	–		(20,000)
	300,000		534,000

(2) Analytical check on translation gain/loss

	USD	Rate	SGD
Net assets at 1 Jan 20x5 (P/Yr's SFP)	300,000	1.78	534,000

Movements in net assets during 20x5			
Net profit after tax	76,000	1.68	127,680
Dividends declared (I/S)	(20,000)	1.65	(33,000)
Balance per movement	356,000		628,680
But net assets at 31 Dec 20x5 is translated at CR	356,000	1.60	569,600
Change in FCTR for 20x5			(59,080)
FCTR as at 1 Jan 20x5			(20,000)
FCTR as at 31 Dec 20x5			(79,080)

(3) Share capital and pre-acquisition retained earnings are translated at historical rate to allow for elimination against investment in subsidiary.

	USD	Rate	SGD
At 1 Jan 20x3			
Consideration transferred	300,000		
Fair value of NCI	30,000		
Less FV of identifiable NA			
Share capital	100,000		
Retained earnings	120,000		
Add undervalued inventory	20,000		
Less deferred tax liability on under-valuation	(4,000)		
	236,000		
Goodwill at 1 Jan 20x3	94,000	2.10	197,400
Translation loss	–		(47,000)
Goodwill at 31 Dec 20x5	94,000	1.60	150,400
Goodwill attributable to SingCo	87,600	1.60	140,160
Goodwill attributable to NCI	6,400	1.60	10,240
	94,000		150,400
Undervalued inventory			
As at 1 Jan 20x3	20,000	2.10	42,000
Translation loss	–		(3,000)
Sold on 1 July 20x3	20,000	1.95	39,000
Deferred tax liability arising from fair value adjustment of inventory:			
As at 1 Jan 20x3	(4,000)	2.10	(8,400)
Translation gain	–		600
Extinguished on 1 July 20x3	(4,000)	1.95	(7,800)

	USD	Rate	SGD
Consolidation adjustments (31 Dec 20x5):			
Elimination of investment, recognition of inventory and goodwill:			
Dr Share capital	210,000	100,000 × 2.1	
Dr Retained earnings	252,000	120,000 × 2.1	
Dr Inventory (excess of fair value)	42,000	20,000 × 2.1	
Dr Goodwill	197,400		
Cr Deferred tax liability		8,400	4,000 × 2.1
Cr Investment in Co Y		630,000	300,000 × 2.1
Cr Non-controlling interests		63,000	30,000 × 2.1
	701,400	701,400	
Realization of fair value adjustment of undervalued inventory:			
Dr Opening RE	35,100		
Dr NCI	3,900		
Cr Inventory		39,000	20,000 × 1.95

Tax effects of realization of fair value adjustment of undervalued inventory:			
Dr Deferred tax liability	7,800	4,000 × 1.95	
Cr Opening RE		7,020	
Cr NCI		780	
Translation loss on goodwill and fair value adjustment to inventory (See workings):			
Dr Foreign Currency Translation Reserve (Equity)	49,400		
Dr Deferred tax liability	600		
Cr Goodwill		47,000	
Cr Inventory		3,000	
Allocation of post-acquisition RE to NCI:			
Dr RE	9,200		
Cr NCI		9,200	
Allocation of current profit to NCI:			
Net profit after tax of Co Y for 20x5		127,680	
NCI's share at 10%		12,768	
Allocation of post-acquisition RE to NCI:			
RE at 1 Jan 20x5	344,000	[from (1)]	
RE at acquisition date	252,000		
Change in RE	92,000		
Dr Income to NCI	12,768		
Cr NCI		12,768	
Elimination of dividend declared:			
Dr Dividend income	29,700		
Dr NCI	3,300		
Cr Dividend declared		33,000	20,000 × 1.65
Allocation of FCTR to NCI:			
Dr NCI	11,348		
Cr Foreign Currency Translation Reserve (Equity)		11,348	

	USD	Rate	SGD
Foreign Currency Translation Reserve:		**Total**	**NCI's share**
Translation loss on book value of net assets (from translation worksheet) (refer to (2))		(79,080)	(7,908)
Translation loss on goodwill (from consolidation adjustment)		(47,000)	(3,200)
Translation loss on fair value adjustment (from consolidation adjustments)		(2,400)	(240)
Total		(128,480)	(11,348)
FCTR attributable to SingCo		(117,132)	
Analytical check of NCI:			
At acquisition date			63,000
Share of cost of sales of undervalued inventory			(3,900)
Share of tax expense			780
Share of post-acquisition RE			9,200
Allocation of current income			12,768
Dividend received			(3,300)

Share of translation reserve	(11,348)
NCI balance at the end of year	67,200
Book value of net assets as at 31 Dec 20x5	569,600
(FV adjustment is zero)	
NCI's share of book value of net assets	56,960
Goodwill attributable to NCI	10,240
NCI as at 31 Dec 20x5	67,200

The consolidated worksheet (condensed financial statements) for the year ended 31 Dec 20x5 is as follows:

	SingCo	Co Y	Dr	Cr	Consolidated Statement of financial position
Share capital	2,000,000	210,000	210,000		2,000,000
Retained earnings:					
As at 1 Jan 20x5	1,500,000	344,000	252,000		1,554,720
			35,100	7,020	
			9,200		
Profit retained	120,000	94,680	12,768	33,000	205,212
			29,700		
As at 31 Dec 20x5	1,620,000	438,680			1,759,932
FCTR		(79,080)	49,400	11,348	(117,132)
Non-controlling interests			11,348	63,000	67,200
			3,300	12,768	
			3,900	780	
				9,200	
Equity	3,620,000	569,600			3,710,000
Assets	10,000,000	1,168,000	42,000	630,000	10,688,400
			197,400	47,000	
				3,000	
				39,000	
Liabilities	(6,380,000)	(598,400)	600	8,400	(6,978,400)
			7,800		
Net assets	3,620,000	569,600	864,516	864,516	3,710,000

If the subsidiary is partially-owned, non-controlling interests will be allocated a share of the translation adjustment and the translation reserves (FCTR) from the translation worksheet.

EQUITY ACCOUNTING OF FOREIGN ASSOCIATES

By definition, an associated company is one in which the investor company is able to exercise influence (but not control) over its policy decisions (IAS 28 *Investment in Associates and Joint Ventures*). In the case of foreign operations that are associated companies, such companies are more likely to be autonomous entities than integral operations of the investor, and their functional currencies are likely to be the local currency. However, all evidence must be considered to assess whether there are exceptional cases where the functional currency is the parent's currency. Assuming that the functional currency is the local currency, the financial statements of the associate are first translated into the investor's presentation currency using the closing rate method. Equity accounting is then applied. In addition to the usual equity accounting adjustments, an additional item relating to the investor's share of the cumulative translation reserves is included, as depicted in the T-account below.

Investment in associated company

Debit	Credit
Initial acquisition costs	Share of past amortization on fair value adjustments
Share of post-acquisition retained earnings brought forward	Share of current tax expense
Share of post-acquisition revaluation surplus	Dividends
Share of current pre-tax profit	Impairment of goodwill, if any
Share of cumulative translation gains/(losses)	

The associate's profit before tax and tax expense are translated at the average rate for the financial year. The opening net assets brought forward at the start of the year are translated at the previous year's closing rate. The ending net asset balance (sum of opening net assets, profit before tax and tax expense) is translated at the closing rate.

Illustration 8.4 shows the effects on foreign exchange gains or losses arising from equity accounting of a foreign associated company.

ILLUSTRATION 8.4

Foreign associated company

Investor Ltd, whose functional currency is the dollar ($), acquired a 25% interest in a foreign company, Associate Ltd, on 31 December 20x1 for FC 100,000 ($100,000). Associate Ltd's functional currency is the FC. At the date of acquisition, Associate Ltd had net assets of FC 300,000. Fair value of net assets on acquisition date is FC 310,000. Equipment had fair value of FC 110,000 and net carrying amount of FC 100,000 on acquisition date. The equipment had a remaining useful life of four years on acquisition date and zero residual value. Statutory tax rate is 20%. The rate of exchange on the date of acquisition was $1 = FC 1. Investor Ltd accounts for its investment in associate using the cost method in its own books and the equity method in the consolidated accounts. Assume that there is a goodwill impairment of FC 5,000 in 20x2.

Associate's income statement for the year ended 31 December 20x2 is as follows:

	FC
Pre-tax profit	80,000
Less tax	24,000
Profit after tax	56,000
Less dividends	20,000
Retained profit	36,000

Assume that the average exchange rate for 20x2 is FC 1 = $1.20 and the closing rate for the year 20x2 is FC 1 = $1.25. The dividend is paid on 31 December. Goodwill impairment is assumed to be progressively occurring throughout the year. (Alternatively, goodwill impairment loss may be deemed to arise at the end of the year and translated at closing rate). Ignore tax effects on goodwill impairment and depreciation on fair value differential.

The equity-accounted Investment in Associate Account in dollars as at 31 December 20x2 (in T-account form) is as follows:

Investment in Associate Ltd

Cost of acquisition	$100,000	Share of tax expense	$ 7,200 (Note 2)
Share of profit before tax	24,000 (Note 1)	Dividend income	6,250 (Note 3)
Share of translation reserves	25,425 (Note 4)	Goodwill impairment	6,000 (Note 5)
		Depreciation on fair value differential	600
		Balance, 31 December	129,375
	$149,425		$149,425

Note 1:

	FC	Rate	$
Associate's profit before tax	80,000	1.20	96,000
Share of net profit (25%)			24,000

Note 2:

	FC	Rate	$
Associate's tax expense	24,000	1.20	28,800
Share of tax expense (25%)			7,200

Note 3:

	FC	Rate	$
Dividends paid	20,000	1.25	25,000
Share of dividends (25%)			6,250

Note 4: Share of translation difference

	FC	Rate	$	
Net assets brought forward	300,000	1.00	300,000	
Add change in net assets:				
Net profit	56,000	1.20	67,200	
Dividends paid	(20,000)	1.25	(25,000)	
			342,200	(A)
Net assets carried forward	336,000	1.25	420,000	(B)
Translation difference (B – A)			77,800	(gain)

Share of translation gain ($77,800 × 25%)	$19,450
Add: Translation difference on goodwill (see Note 5 below)	5,500
Add: Translation difference on fair value differential (see Note 6 below)	475
	$25,425

Note that the net assets of Associate Ltd do not include goodwill, so, the translation of goodwill has to be done separately; the translation difference on goodwill is added to the translation difference on the net assets.

Note 5: Goodwill on acquisition and translation difference on goodwill

Cost of acquisition	FC 100,000
Share of net assets (FC 300,000 × 25% × 1)	75,000
After tax fair value differential of equipment (FC 10,000 × 1.00 × 25% × 0.8)	2,000
Goodwill	FC 23,000

	FC	Rate	$	
Goodwill on acquisition	23,000	1.00	23,000	
Less: Impairment loss	(5,000)	1.20	(6,000)	
			17,000	(A)
Goodwill at year-end	18,000	1.25	22,500	(B)
Translation difference (B – A)			5,500	(gain)

Note 6: Fair value differential on equipment

	$
Equipment after tax fair value differential on 1 January 20x2 (FC 10,000 x 1.00 x 25% x 0.8)	2,000
Less Depreciation from 1 January to 31 December 20x2 (FC 10,000/4 x 1.20 x 25% x 0.8)	(600)
	1,400
Equipment fair value differential on 31 December 20x2 (FC 10,000 x 3/4 x 1.25 x 25% x 0.8)	1,875
Translation difference	475

An analytical check on the balance in the Investment in Associate Ltd Account is as follows:

Net assets of Associate Ltd at 31 December 20x2	FC 336,000
Investor's share of net assets at 25%	FC 84,000
Translated at closing rate of 1.25	$105,000
Add: Goodwill (net of impairment loss)	$ 22,500
Add: Fair value differential on equipment	$ 1,875
Balance	$129,375

Equity accounting entries on consolidation are as follows:

	$	$
Dr Investment in associate	16,800	
Dr Share of tax expense (P/L)	7,200	
Cr Share of profit before tax (P/L)		24,000
To record share of associate's profit and tax		
Dr Dividend income (P/L)	6,250	
Cr Investment in associate		6,250
To record effects of dividend on associate		
Dr Share of profit before tax	6,000	
Cr Investment in associate		6,000
To record impairment on goodwill arising from investment in associate		
Dr Share of profit before tax	600	

Cr Investment in associate		600
To record depreciation on fair value differential in equipment		
Dr Investment in associate	25,425	
Cr Foreign currency translation reserve		25,425
To record foreign currency translation on investment in associate		

SPECIAL ISSUES

Change of Functional Currency

The primary economic environment in which an entity operates determines the identification of functional currency. Hence, changes in the primary economic environment may necessitate a change in the functional currency. In the case of an overseas subsidiary that is part of a group, a change in the nature of the operating relationship between the overseas subsidiary and the parent may indicate the need to change the functional currency of the subsidiary. For example, if a foreign subsidiary's operations changed from being closely intertwined with the parent to those of an independent entity, the functional currency would have to change from the parent's currency to the local currency.

A change in the functional currency has to be implemented prospectively. There is no restatement of the financial statements of prior periods. This is because the change in functional currency is not a change in accounting policy or a correction of error, but a result of changes in the economic environment in which the entity operates. Table 8.6 summarizes the accounting consequences of a change in functional currency in accordance with IAS 21 paragraphs 35 to 37.

TABLE 8.6 Impact of change in functional currency on consolidation

Functional currency is changed		
From	To	Year-end translation procedures
Local currency	Parent's currency	Effectively, remeasurement procedures will be applied and not the closing rate method as previously applied. The cumulative translation differences, up to the date of the change, continue to remain in equity until the subsidiary is disposed of. Non-monetary assets carried at historical cost are translated at the rate on the date when the change is effected. In other words, the exchange rate on the date of the change of functional currency is deemed to be the new historical rate.
Parent's currency	Local currency	All assets and liabilities in the subsidiary's financial statements are translated at the closing rate for consolidation purposes. Translation differences are taken to equity.

IAS 21 paragraph 37 requires all assets and liabilities to be translated into the new functional currency using the exchange rate at the date of change. The new translated amount of a non-monetary asset becomes its new historical cost and gives rise to a revised depreciation or amortization or cost of sales expense in subsequent periods. Consider a simple example: the functional currency of a company is changed from the dollar (parent's currency) to the local currency (LC). The exchange rate at the date of change is LC 1.5 to $1. Applying IAS 21 paragraph 37, all items in the statement of financial position are translated at the exchange rate of LC 1.5/$1 at the date of change to arrive at revised balances in the books of the entity.

page 713

	Previously ($)	Revised (LC)
Fixed assets	1,000,000	1,500,000
Monetary net assets	200,000	300,000
Net assets	1,200,000	1,800,000
Share capital	500,000	750,000
Retained earnings	700,000	1,050,000
Equity	1,200,000	1,800,000

When there is a change in the functional currency of a foreign operation, there is also a potential impact on the translation method applied to the foreign currency financial statements of the foreign operation for purposes of consolidation.

The following is an example of a prospective change in functional currency of a company from US dollar (US$) to Singapore dollar (S$) on 31 December 2014. The company, which was incorporated in 2013, is a wholly owned subsidiary of its parent company for which the presentation currency of the parent's group financial statements is in S$. The relevant rates are as follows:

	2014	2013
Closing rate	1.3	1.25
Average rate	1.28	1.22

	2014 US$	2014 S$ Reported	2013 US$	2013 S$ Reported comparative
Income Statement				
Sales	100,000	128,000	120,000	146,400
Expenses (including tax)	(78,000)	(99,840)	(90,000)	(109,800)
Net profit after tax	22,000	28,160	30,000	36,600
Statement of Changes in Equity				
Share capital				
Balance, 1 Jan	100,000	120,000	100,000	120,000
Translation adjustments	–	10,000	–	–
Balance, 31 Dec	100,000	130,000	100,000	120,000
Retained earnings				
Balance, 1 Jan	30,000	36,600	–	–
Net profit after tax	22,000	28,160	30,000	36,600
Translation adjustments	–	2,840	–	–
Balance, 31 Dec	52,000	67,600	30,000	36,600
Foreign currency translation reserve				
Balance, 1 Jan	–	5,900	–	–
Translation adjustments during the year				
Opening net assets	–	6,500[a]	–	5,000[c]
Income during year	–	440[b]	–	900[d]
Effect of change in functional currency				
Adjustment of FCTR to share capital	–	(10,000)[e]	–	–
Adjustment of FCTR to retained earnings		(2,840)[f]	–	–
Balance, 31 Dec	–	(0)	–	5,900
Statement of Financial Position				
Fixed assets	90,000	117,000	100,000	125,000
Inventory	80,000	104,000	45,000	56,250
Accounts receivable	43,000	55,900	50,000	62,500
Bank balances	10,000	13,000	4,500	5,625
	223,000	289,900	199,500	249,375
Loan payable	50,000	65,000	50,000	62,500
Accounts payable	21,000	27,300	19,500	24,375
Share capital	100,000	130,000	100,000	120,000
Retained earnings	52,000	67,600	30,000	36,600
FCTR	–	–	–	5,900
	223,000	289,900	199,500	249,375

[a] (1.3 – 1.25) × 130,000

[b] (1.3 – 1.28) × 22,000

[c] (1.25 – 1.2) × 100,000

[d] (1.25 – 1.22) × 30,000

[e] (100,000 × 1.3) – (100,000 × 1.2)

[f] (52,000 × 1.3) – (30,000 × 1.22) – (22,000 × 1.28)

The rate at the date of incorporation is 1 January 2013 and the exchange rate at that date is 1.2. In this case, sales and expenses occur evenly throughout the two years and the exchange rates do not fluctuate significantly during the year. Fixed assets were acquired on 1 January 2013.

In this case, as 31 December 2014 is the date of change of functional currency, the balance sheet as at 31 December 2014 will be translated from US$ to S$ using the rate as at 31 December 2014 (i.e. 1.3) for the purpose of preparation of group financial statements at the parent's level. The income statement of the company for FY2014 will be translated from US$ to S$ at average rate of 1.28. As the group presentation currency is S$ which is the same as the company's new functional currency, no translation reserve will arise as at 31 December 2014.

Insofar as FY2013 is concerned, the functional currency of the company remains at US$ in FY2013. As the functional currency of the company of US$ is different from the group's presentation currency, a translation difference will arise when the financial statements are translated from US$ to S$ for the preparation of the consolidated financial statements at the parent's level. This exchange difference is to be taken to other comprehensive income and accumulated in equity (FCTR).

Exchange Differences Arising from Intercompany Transactions

Intercompany transactions between a parent company and a foreign operation take many forms. These include:

1. Normal trade transactions such as a parent's sales to and purchases from a subsidiary or vice versa;
2. Loans and advances from, or to, the parent company; and
3. Dividends declared and paid by a foreign subsidiary.

Intercompany transactions are normally denominated in either the parent company's currency or the foreign subsidiary's local currency although they can also be denominated in a third currency. In any case, if the parent company and the subsidiary do not have a common functional currency, such transactions are deemed as foreign currency transactions to one party (or both if they are denominated in a third currency). There result in one party having a monetary asset (receivable) or monetary liability (payable) in a foreign currency and reporting exchange gains or losses on it. The exchange gains or losses will not be eliminated on consolidation as the gains or losses are "one-sided" and will only arise in the financial statements of the party that is exposed to the foreign currency intercompany payable or receivable. Such exchange differences will be recognized in the profit or loss in the preparation of the consolidated financial statements. Illustration 8.3 shows this point.

The rationale behind is explained in IAS 21 paragraph 45 specifically an intragroup monetary asset/liability cannot be eliminated against the corresponding liability/asset without showing the results of currency fluctuations in the consolidated financial statements. This is because the monetary item represents a commitment to convert one currency into another and exposes the entity to a gain/loss through currency fluctuations.

An exception is the exchange difference arising from monetary items that forms part of a reporting entity's net investment in foreign operation. The exchange difference is recognized in profit/loss of the parent subsidiary's book and in foreign currency translation reserve (FCTR) at the consolidated group account.

ILLUSTRATION 8.5 Intercompany loans

On 1 December 20x1, Sincere Company obtains an advance of US$100,000 from its US parent, Amco Inc. Sincere's functional currency is the local currency (LC) while Amco's functional and presentation currency is the US dollar. The LC/US$ exchange rates were LC 1.70 and LC 1.68 on 1 December 20x1 and 31 December 20x1, respectively. The transaction was a foreign currency transaction in the books of Sincere Company who would record the following entries on 1 December 20x1 and 31 December 20x1.

1 Dec 20x1	Dr Cash	170,000	
	Cr Loan from Amco (US$100,000)		170,000
	Record US dollar loan at the spot rate of LC 1.70/US$1		

31 Dec 20x1	Dr Loan from Amco		
	Cr Exchange gain		
	Translate loan from Amco at the closing rate and record an exchange gain as a result of the depreciation of the US dollar relative to the local currency		

Sincere Company was exposed to the LC/US$ exchange rate fluctuations because the loan from Amco was in US dollars (a foreign currency), which commits it to translate the loan from US dollars to the local currency. On the other hand, Amco did not have a currency exposure since the loan was in its functional currency. While the loan receivable (in Amco's statement of financial position) and the loan payable (in Sincere Company's statement of financial position) were eliminated against each other in the consolidation process, the exchange gain was one-sided (as it existed only in Sincere's income statement) and could not be eliminated. The accounting treatment of the exchange gains or losses on the monetary item is dependant on whether the monetary item is in substance part of the parent's net investment in the foreign operation.

A monetary item, such as a long-term loan from the parent, is considered as part of the parent's net investment in a foreign operation if the loan, in substance, takes on more in the nature as equity as opposed to loan. An example is an intercompany loan extended by the parent that is interest-free or has no definite or scheduled repayment, or repayment is unlikely to occur in the foreseeable future. If a loan is deemed as an extension of a parent's net investment, IAS 21 paragraph 32 requires the exchange gain or loss from the loan to be taken directly to other comprehensive income (FCTR) in the *consolidated financial statements*[11] as if the exchange gain or loss is a translation difference under the closing rate method. Intercompany trade receivables and payables, which are short-term in nature and arising in the course of trade, are not considered as part of the parent's net investment. Accordingly, the exchange differences are taken to profit or loss in accordance with paragraph 28 of IAS 21. The accounting treatments are summarized in Table 8.7.

TABLE 8.7 Exchange differences on intercompany monetary items

Nature of monetary item	Monetary item is denominated in:	In parent's books	In foreign operation's books	In consolidated accounts
Forms part of parent's net investment in the foreign operation, for example, a long-term loan without a definite repayment schedule, or is not likely to be repaid in the foreseeable future	Parent's functional currency	No exchange gain (or loss) is recorded as it is in the same currency	Records exchange gain (or loss) on monetary item in profit or loss	Exchange gain (or loss) on monetary item is reclassified to other comprehensive income
	Foreign operation's currency	Records exchange gain (or loss) on monetary item in profit or loss	No exchange gain (or loss) is recorded as it is denominated in the local currency	
	Third currency	Records exchange gain (or loss) on monetary item in profit or loss	Records exchange gain (or loss) on monetary item in profit or loss	
Is not part of parent's net investment in the foreign operation	Parent's functional currency	No exchange gain (or loss) is recorded as it is in the same currency	Records exchange gain (or loss) on the monetary item in profit or loss	Flows through to consolidated profit or loss
	Foreign operation's currency	Records exchange gain (or loss) on monetary item in profit or loss	No exchange gain or loss is recorded as it is in the same currency	
	Third currency	Records exchange gain (or loss) on monetary item in profit or loss	Records exchange gain (or loss) on monetary item in profit or loss	

Note that when a loan from a parent to a foreign subsidiary is considered, in substance, as an extension of the parent's investment in the foreign operation, the provision in IAS 21 affects only the accounting treatment of the exchange gain or loss on the loan. It does not affect the classification of the loan (which still remains as a loan) in the statement of financial position.

The reclassification could be accomplished using the following consolidation journal entries in the consolidation worksheet.

Dr Exchange gain on loan (Income statement)
Cr Foreign currency translation reserves (Equity)

Or

Dr Foreign currency translation reserves (Equity)
Cr Exchange loss on loan (Income statement)

Paragraph 15A clarifies that the monetary item, which forms part of an entity's net investment in a foreign operation, is not restricted to monetary items between the parent and its subsidiaries. That monetary item receivable from or payable to a foreign operation may be any subsidiary of the group. The standard further provides an example, which is adapted here. For example, a parent has two subsidiaries, A and B. Parent and subsidiary A's functional currencies are Sterling Pounds. Subsidiary B is a foreign operation and its functional currency is the US dollars. Subsidiary A grants a loan denominated in Sterling Pounds to subsidiary B. Subsidiary A's loan receivable from subsidiary B would be part of the parent's net investment in subsidiary B if settlement of the loan is neither planned nor likely to occur in the foreseeable future. As this is a foreign currency denominated loan from subsidiary B's perspective, an exchange difference arising from the monetary loan will be recorded in the profit and loss account of subsidiary B's separate financial statements. This exchange difference will be reclassified from profit and loss to the foreign currency translation reserve in the consolidated financial statements of parent.

Fair Values of Foreign Currency Non-monetary Items

Inventories: Application of the Lower of Cost or Net Realizable Value (NRV) Rule

IAS 2 requires inventory to be carried at lower of cost or net realizable value. If the inventory (a non-monetary asset) is measured in a foreign currency,[12] the reported carrying value (in the functional currency) requires a comparison of two amounts:

1. Inventory cost (in foreign currency) × actual (historical) rate
2. Inventory at NRV (in foreign currency) × closing rate

The outcome of the comparison may result in the recognition of loss arising from the writing down of the inventory in the functional currency but not in the foreign currency, or vice versa. This would depend on the year-end net realizable value (in the foreign currency) and the year-end exchange rate (IAS 21:25). Illustration 8C.2 shows the possible effects.

ILLUSTRATION 8.6 Application of the lower of cost or net realizable value rule

Parco, whose functional currency is the dollar ($), owns a subsidiary, Forsub, in Country X, whose currency is the FC. Forsub keeps its books in the local currency FC. At 31 December 20x1, Forsub has inventories that cost FC 100,000, which were purchased when the exchange rate was FC 1 = $1.

Consider three year-end scenarios:

Scenario 1: At 31 December 20x1, the net realizable value of inventories was FC 105,000 and the exchange rate was FC 1 = $0.90.

Functional currency of Forsub is the FC	Functional currency of Forsub is the dollar ($)
Cost is lower than NRV. Carrying value of the inventories in the group financial statements is $90,000.	From a group perspective, inventories are recorded in a foreign currency. The cost of the inventories measured at the historical rate is compared with the net realizable value measured at the closing rate. NRV is FC 105,000 × $0.90 = $94,500 Cost is FC 100,000 × $1.00 = $100,000 In the remeasured financial statements, a loss of $5,500 is recognized and the carrying value of the inventories in the group financial statements is $94,500.

Scenario 2: At 31 December 20x1, the net realizable value of inventories was FC 88,000 and the exchange rate was FC 1 = S$0.90.

Functional currency of Forsub is the FC	Functional currency of Forsub is the dollar ($)
Cost is higher than NRV. Under the lower of cost or net realizable value rule, the inventories and a writing-down loss of FC 12,000 are recorded in Forsub's books. The loss of FC 12,000 is translated at the closing rate of $0.90 (= $10,800). Inventories on the group statement of financial position is FC 88,000 translated at the closing rate (= $79,200).	The remeasured historical cost of the inventories ($100,000) is greater than the remeasured net realizable value (FC 88,000 × $0.90 = $79,200) in dollars. In the remeasured financial statements, the loss of FC 12,000* in Forsub's financial statements is reversed before remeasurement is undertaken in order to avoid double-counting. In the remeasurement process, a writing-down loss of $20,800 ($100,000 – $79,200) is recognized and the inventories are carried in the remeasured financial statements at NRV ($79,200).

*Assumes that a loss of FC 12,000 was initially recognized. If remeasurement is properly applied by Forsub, this reversal is not required.

Scenario 3: At 31 December 20x1, the net realizable value of inventories is FC 93,000, and the exchange rate is FC 1 = S$1.10.

Functional currency of Forsub is the FC	Functional currency of Forsub is the dollar ($)
Cost is higher than NRV. Under the lower of cost or net realizable value rule, a writing-down loss of FC 7,000 is recorded in Forsub's books. The loss of FC 7,000 is translated at the closing rate of $1.10 (= $7,700). Inventories on the group statement of financial position is $102,300.	The remeasured historical cost of the inventories ($100,000) is lower than the remeasured net realizable value ($102,300). For the purpose of remeasurement only, the loss of FC 7,000 in Forsub's financial statements is reversed before the remeasurement process. In the remeasured financial statements, the inventories are carried at cost ($100,000).

ILLUSTRATION 8.7 Investment properties

Functional currency of the entity Parco is the Singapore dollar (SGD). Parco holds Australian investment properties. The fair values of the investment properties are A$8 million and A$10 million on 31 December 2012 and 31 December 2013, respectively. The A$/SGD exchange rates on 31 December 2012 and 31 December 2013 are 1.00 and 1.10 (1 A$:1.10 SGD), respectively. The investment properties are accounted for using the fair value model under IAS 40. The fair value of the investment property is translated at the exchange rate on the fair valuation date. The gain or loss on fair valuation of the investment property includes both fair value changes and exchange gains/losses. Journal entry on 31 December 2013 is as follows:

Dr	Investment property (10m × 1.10 – 8m × 1.0)	S$3m
Cr	Gain on fair valuation of investment	S$3m

ILLUSTRATION 8.8 Fixed asset

Functional currency of the entity Parco is the Singapore dollar (SGD). Parco holds a building, for which it accounts for using the revaluation method under IAS 16. The fair values of the building are A$8 million and A$10 million on 31 December 2012 and 31 December 2013, respectively. The A$/SGD exchange rates on 31 December 2012 and 31 December 2013 are 1.00 and 1.10 (1 A$:1.10 SGD), respectively. The revaluation gain or loss on the building includes both fair value changes and exchange gains or losses. Journal entry on 31 December 2013 is the building as follows:

Dr	Building (10m × 1.10 – 8m × 1.0)	S$3m
Cr	Revaluation reserve	S$3m

ILLUSTRATION 8.9

Downstream sale to foreign subsidiary

Background information

P Co has a wholly-owned foreign subsidiary S Co		
Functional currency of P Co	S$	
Functional currency of S Co	US$	
Financial year end	31-Dec	
Transfer of inventory from P Co to S Co	6 July 20x5	Settled in cash
	S$	
Transfer price (i.e. sale price)	100,000	
Original cost	85,000	
Gross profit	15,000	
Re-sale by S Co to third parties		
30 September 20x5	60%	
8 July 20x6	30%	
Exchange rates	S$ to US$1	
6 July 20x5	1.24	
30 September 20x5	1.3	
31 December 20x5	1.32	
8 July 20x6	1.36	
31 December 20x6	1.38	

Accounting entries in P Co's books		**S$**	
6 Jul 20x5	Dr Cash	100,000	
	Cr Sales		100,000
	Being sales to S Co		
	Dr Cost of sales	85,000	
	Cr Inventory		85,000
	Being cost of sales recognized		

Accounting entries in S Co's books		US$		
6 Jul 20x5	Dr Inventory	80,645		[100,000/1.24]
	Cr Cash		80,645	
	Purchase of inventory from P Co			
30 Sep 20x5	Dr Cost of sales	48,387		[80,645*60%]
	Cr Inventory		48,387	
	Being cost of sales recognized for sales to third parties			

CJE: Elimination of intra-group transaction in 20x5				
	Dr Sales (P Co)	100,000		
	Dr FCTR	3,290		
	Cr Cost of sales (P Co) Reverse unsold %		34,000	[85,000*40%]
	Cr Cost of sales (S Co) Eliminate sold %		62,903	[48,387*1.3]
	Cr Inventory (S Co) Eliminate unrealized profit		6,387	[12,097*40%*1.32]
		103,290	103,290	

Note 1: Unrealized profit in S Co's inventory	S$	US$	
Transfer price	100,000		
Original cost	(85,000)		
	15,000	12,097	[15,000/1.24]
Percentage unsold		4,839	[12,097*40%]

Analytical check for FCTR entry in CJE

The SGD100k inventory transferred from P (S$ functional currency) to S (US$ functional currency) gives rise to FCTR S$5,484 as shown below.

Portion sold	60,000/1.24x1.3 – 60,000	S$2,903
Portion unsold	40,000/1.24x1.32 – 40,000	S$2,581
		S$5,484

The FCTR that is eliminated should be that relating to 60% on transferred price (100,000 x 60%) and 40% on unrealized profit within inventory (15,000 x 40%).
FCTR that should not be eliminated relates to the 40% of original cost (85,000 x 40%) that remains unsold.
This is 85,000 x 40%/1.24x1.32 – 85,000 x 40% = S$2,194
The net FCTR that should be eliminated is S$5,484 – S$2,194 = S$3,290

Accounting in S Co's books		US$		
8 July 20x6	Dr Cost of sales	24,194		[80,645*30%]
	Cr Inventory		24,194	
	(Being cost of sales recognized for sales to third parties)			

CJE: Elimination of intra-group transaction in 20x6				
	Dr Opening Retained Earnings	3,097		[100,000-34,000-62,903]
	Dr FCTR	3,508		
	Cr Cost of sales (S Co)		4,935	[12,097*30%*1.36]
	Cr Inventory (S Co)		1,669	[12,097*10%*1.38]
		6,605	6,605	

Analytical check for FCTR entry in CJE

The SGD 40% x 85k unrealized profit in inventory transferred from P (S$ functional currency) to S (US$ functional currency) gives rise to FCTR to be eliminated as follows:

Portion sold	30% x 15k/1.24 x1.36 – 4,500	S$435
Portion unsold	10% x 15k/1.24x1.38 – 1,500	S$169
		S$604

The FCTR on 60k sold in 20x5 continues to be eliminated in 20x6. This is $2,903.
Total FCTR eliminated in 20x6 = $2,903 + $604 = $3,507

ILLUSTRATION 8.10 Upstream sale to foreign subsidiary

Background information

P Co has a wholly-owned foreign subsidiary S Co

Functional currency of P Co	S$		
Functional currency of S Co	US$		
Financial year end	31-Dec		
Transfer of inventory from S Co to P Co	6 July 20x5	Settled in cash	
	US$		
Transfer price (i.e. sale price)	100,000		
Original cost	85,000		
Gross profit	15,000		
Re-sale by P Co			
30 September 20x5	60%		
8 July 20x6	30%		
Exchange rates	S$ to US$1		
6 July 20x5	1.24		
30 September 20x5	1.3		
31 December 20x5	1.32		
8 July 20x6	1.36		
31 December 20x6	1.38		

Accounting entries in S Co's books		**US$**		
6 Jul 20x5	Dr Cash	100,000		
	Cr Sales		100,000	
	Being sales to P Co			
	Dr Cost of sales	85,000		
	Cr Inventory		85,000	
	Being cost of sales recognized			

Accounting entries in P Co's books		**S$**		
6 Jul 20x5	Dr Inventory	124,000		[100,000*1.24]
	Cr Cash		124,000	
	Purchase of inventory from S Co			
30 Sep 20x5	Dr Cost of sales	74,400		[124,000*60%]
	Cr Inventory		74,400	
	Cost of sales recognized for sales to third parties			

CJE: Elimination of intra-group transaction in 20x5				
	Dr Sales (S Co)	124,000		[100,000*1.24]
	Cr Cost of sales (S Co) Reverse unsold %		42,160	[85,000*1.24*40%]
	Cr Cost of sales (P Co) Eliminate sold %		74,400	[124,000*60%]
	Cr Inventory (P Co) Unrealized profit		7,440	Note 1
		124,000	124,000	

Note 1: Unrealized profit in P Co's inventory	US$	S$	
Transfer price	100,000		
Original cost	(85,000)		
	15,000	18,600	[15,000*1.24]
Percentage unsold		7,440	[18,600*40%]

Accounting entries in P Co's books		**S$**		
8 Jul 20x6	Dr Cost of sales	37,200		[124,000*30%]
	Cr Inventory		37,200	
	Being cost of sales to third parties			

CJE: Elimination of intra-group transaction in 20x6				
31 Dec 20x6	Dr Opening retained earnings	7,440		[124,000-42,160-74,400]
	Cr Cost of sales (P Co)		5,580	[18,600*30%]
	Cr Inventory (P Co)		1,860	[18,600*10%]

Foreign Operations in a Hyperinflationary Environment

The defining characteristics of a hyperinflationary economy is rampant and persistent inflation over a number of years resulting in a massive loss of purchasing power. IAS 29 *Financial Reporting in Hyperinflationary Economies* lists a number of indicators of a hyperinflationary economy. These indicators include:

1. An inflation rate of 100% or more over a period of three years;
2. Interest rates, wages, and prices that are linked to a price index;
3. Prices that are quoted in a stable currency; and
4. A general population that prefers to keep its wealth in non-monetary assets or in a stable currency.

IAS 29 considers that in a hyperinflationary economy, financial statements, which are not restated (adjusted for inflation), are not useful as the loss of purchasing power at a rapid rate results in a misleading comparison of "amounts from transactions and other events that have occurred at different times, even within the same accounting period" (IAS 29:2).

Where the functional currency of a foreign operation is the currency of a hyperinflationary economy, IAS 21 requires a restate-then-translate approach in translating the financial statements of the foreign operation into a different presentation currency.[13] The translation method that should be adopted is as follows (IAS 21:42): page 724

1. All amounts (that is, assets, liabilities, equity items, income, and expenses, including comparatives) shall be translated at the closing rate at the date of the most recent statement of financial position, except that:
2. When amounts are translated into the currency of a non-hyperinflationary economy, comparative amounts shall be those that were presented as current year amounts in the relevant prior year financial statements (that is, not adjusted for subsequent changes in the price level or subsequent changes in exchange rates).

EVALUATION OF TRANSLATION APPROACHES

IAS 21 does not state the objective of translation. It merely alludes to the fact that translation is necessary if the consolidated financial statements of a group are to include those of the foreign subsidiaries. SFAS 52 of the Financial Accounting Standards Board in the USA, on the other hand, explicitly states the objectives of translation as follows:

1. Provide information that is generally compatible with the expected economic effects of a rate change on the enterprise's cash flow and equity; and
2. Reflect in the consolidated statements the financial results and relationships of the individual consolidated entities as measured in their functional currencies.[14]

It will be useful to evaluate the two approaches described in this chapter against these objectives. The closing rate method generally meets these two objectives. With regard to the first objective, we expect a positive effect if the functional currency of a foreign operation (that is, the local currency) appreciates vis-à-vis the parent company's functional currency. The investment in the foreign operation should appreciate in terms of the currency of the parent. Since most investments show a positive net asset position, an appreciation of the foreign currency will result in a translation gain under the closing rate method. Conversely, if the foreign currency depreciates against the parent's currency, there will be a translation loss.

The second objective is generally met because under the closing rate method, all the assets and liabilities are translated using the closing rate (a constant), and revenues and expenses are generally also translated using the average rate (another constant). This results in preserving the financial relationships (or financial ratios) among items in the original financial statements. For example, the net profit margin in the original foreign currency financial statements of Mango Pie in Illustration 8.2 is 12.83% (see Table 8.8); the net profit margin in the translated financial statements remains at 12.83%. This has the advantage of enabling the performance of the foreign subsidiary to be evaluated without being distorted by the translation process. However, to maintain the financial relationship, the ratio must be made up of numbers from the same financial statements. The ratio will be somewhat distorted if it is a ratio of variables from the income statement and the statement of financial position, such as the return on equity ratio. The ratio will be affected as the variables are translated at different rates. For example, for the return on equity ratio for Mango Pie, the numerator (net profit) is translated using the average rate while the denominator (equity) is translated using the closing rate. However, even though there may be some distortion in the ratio, this is unlikely to be significant as indicated in Table 8.8. The return on equity in the original financial statements is 20%, and after translation using the closing rate method, the ratio is 20.6%. A more serious flaw of the closing rate method is that the translated statement of financial position items, particularly the assets, are measured neither at historical cost nor current value, thus rendering the figures meaningless in accounting terms. page 725

One of the criticisms[15] of the remeasurement method is that it distorts the original financial ratios, and thus hampers the proper evaluation of the performance of the foreign operation (see Table 8.8). However, it is argued here that if the foreign operation's functional currency is the same as the functional currency of the parent and not the local currency, the original financial statements (in the local currency) do not "express the financial results and relationships in its functional currency." IAS 21 (as well as SFAS 52) clearly states that the effects of changes in exchange rates are best measured in terms of the functional currency. Thus, remeasurement attempts to "put things right." so to speak, by simulating the foreign operation's transactions as though they had all been conducted in the functional currency (the parent's currency).

The remeasurement method ensures that the bases of measurement of assets and liabilities are not affected. This method was the preferred method in the 1970s, until the economic environment became highly volatile and the recognition of remeasurement gains and losses on the income statement made it an unpopular method. It is conceptually more consistent with the measurement bases regardless of the accounting model that is being used (whether the historical cost model, the current value model or a hybrid model).

TABLE 8.8 Comparison of selected financial ratios

	Original financial statements (20x1)	Translated statements (closing rate method)	Remeasured statements
Net profit margin	77/600 = 12.83%	60.06/468 = 12.83%	56.1/468 = 11.99%
Return on equity	77/384 = 20.05%	60.06/292 = 20.56%	56.1/305.79 = 18.35%
Current ratio	245/118 = 2.07	186.2/89.68 = 2.08	187.3/89.68 = 2.09

page 726

APPENDIX 8A

Remeasurement from a Foreign Currency to the Functional Currency

When an entity maintains its books and records in a currency other than its functional currency, the entity prepares its financial statements by translating all amounts into its functional currency based on the remeasurement method (IAS 21 paragraph 34). The preparation of financial statements in a currency different from functional currency could be due to legal requirements (e.g. listing requirements), tax reasons, or legacy issues (e.g. systems not changed). The following cases fall under this situation:

1. A stand-alone entity that records its books in a currency other than its functional currency but presents its financial statements in its functional currency; or

2. A foreign operation that records its books in its local currency (for example, because of tax or local reporting requirements) but its functional currency is the parent's currency.

The approach that should be adopted in this situation is a remeasurement process similar to that prescribed for recording foreign currency transactions of a stand-alone entity, which is discussed in the preceding section (IAS 21:20–26). The purpose of the remeasurement process is to achieve the same result as it would have been had the transactions been recorded originally in the functional currency. The term "remeasurement" is used in Statement of Financial Accounting Standard (SFAS) 52 issued by the Financial Accounting Standards Board (FASB), but IAS 21 does not use this term. We use the term "remeasurement" to describe this translation method. As most stand-alone entities are likely to have the same functional and presentation currency, the discussion on translation methods from this juncture onward is focused on foreign operations in consolidated financial statements. It is clear that the choice of functional currency of a foreign operation determines the translation method. However, this is not a free choice as IAS 21 paragraphs 9–11 sets out the conditions that should determine the choice of a foreign operation's functional currency.

Using the example of Apple Pie below, its functional currency is the dollar and the Books are kept in foreign currency (FC). The remeasured financial statements in dollar are shown below:

APPLE PIE
Income Statement
For the Year Ended 31 December 20x1

	FC	Rate	$
Sales	600,000	0.78	468,000
Cost of goods sold	(380,000)	(Note 1)	(299,000)
Gross profit	220,000		169,000
Depreciation expense	(33,000)	0.81(Note 2)	(26,730)
Insurance expense	(12,000)	0.81(Note 3)	(9,720)
Operating expenses	(78,000)	0.78	(60,840)
Remeasurement gain		(Note 4)	10
Profit before tax	97,000		71,720
Taxation	(20,000)	0.78	(15,600)
Profit after tax	77,000		56,120
Dividends paid	(25,000)	0.77	(19,250)
	52,000		36,870
Retained earnings, 1 January	32,000	0.81*	25,920
Retained earnings, 31 December	84,000		62,790

* Refer to the explanation under the closing rate method.

APPLE PIE
Statement of Financial Position
As at 31 December 20x1

	FC	Rate	$
Fixed assets (net)	257,000	0.81	208,170
Current assets:			
Inventories	80,000	0.77	61,600
Prepaid insurance	6,000	0.81	4,860
Accounts receivable	70,000	0.76	53,200
Cash	89,000	0.76	67,640
Total assets	502,000		395,470
Less:			
Current liabilities:			
Accounts payable	(98,000)	0.76	(74,480)
Tax payable	(20,000)	0.76	(15,200)
	(118,000)		(89,680)
Net assets	384,000		305,790
Share capital	300,000	0.81	243,000
Retained earnings	84,000	(from profit or loss)	62,790
Total equity	384,000		305,790

Note 1: The cost of goods sold should not be translated as a single figure as it is a non-monetary item comprising three components that require different exchange rates at the dates when the inventories were purchased (not when they were sold).

FC Rate $

Opening stocks	60,000	0.81	48,600
Purchases	400,000	0.78	312,000
Closing stocks	(80,000)	0.77	(61,600)
Cost of goods sold	380,000		299,000

Note 2: Depreciation expense is translated at the related fixed asset's historical rate. Similarly, amortization expense, if any, is translated at the related intangible asset's historical rate.

Note 3: Insurance expense is amortized from prepaid insurance arising as at 31 December 20x0.

Note 4: The remeasurement gain, a residual, is reconciled as follows:

Movements in exposed items	FC	Rate	$	
Exposed items (net monetary liabilities), 1 January	(36,000)*	0.81	(29,160)	
Additions to monetary assets:				
Sales	600,000	0.78	468,000	
Reductions in monetary assets/increase in monetary liabilities:				
Purchases	(400,000)	0.78	(312,000)	
Operating expenses	(78,000)	0.78	(60,840)	
Taxation	(20,000)	0.78	(15,600)	
Dividends paid	(25,000)	0.77	(19,250)	
			31,150	(A)
Net exposed items (net monetary assets), 31 December	41,000**	0.76	31,160	(B)
Remeasurement gain (B – A)			10	

* FC 50,000 (accounts receivable) + FC 14,000 (cash) – FC 100,000 (accounts payable)

** FC 70,000 (accounts receivable) + FC 89,000 (cash) – FC 98,000 (accounts payable) – FC 20,000 (tax payable)

The exposed items under remeasurement are the monetary assets and monetary liabilities. (A) represents the unadjusted net monetary assets (in $) as it is the sum of the opening net monetary liabilities brought forward at the previous closing rate and the increases or decreases in monetary assets or liabilities translated at the average and actual rates during the year. Since increases in monetary assets exceeded increases in monetary liabilities during the year, there is a net monetary assets position at year-end. (B) is the net monetary assets remeasured at the closing rate.

The difference between (A) and (B) is the remeasurement gain for the year. In this case, although the FC has depreciated relative to the dollar, there was a net monetary liabilities balance at the beginning of the year. Hence, the depreciation of the FC has a favorable impact on remeasurement as the liabilities have "shrunk" in dollar terms at year-end.

If there is any revaluation of assets during the year (for example, fair value adjustments to trading securities or FVOCI securities), the exposed items under the remeasurement would include the assets that are subject to revaluation. An exchange difference will arise because the exchange rate at the date of revaluation will be different from the rate applied previously to the brought-forward balance of the asset.

What should be included in the movement of monetary items in the schedule above? The schedule includes only transactions that give rise to changes in either monetary assets or monetary liabilities, for example:

1. Transactions recorded in the income statement such as sales that result in an increase in cash or accounts receivables, and purchases and operating expenses that result in a reduction in cash or an increase in accounts payables; and
2. Statement of financial position items such as the purchases of fixed assets or the issue of new equity for cash.

Conversely, transactions that have no effect on net monetary items are excluded. For example, payment to a creditor will entail a decrease in a monetary asset (cash) and a decrease in a monetary liability (accounts payable). They cancel out each other. It should be noted that the reconciliation format is not meant to be an extract of the cash book.

In the illustration above, the financial statement items are translated directly from the foreign currency to the group reporting currency, item by item. In the process, it is necessary to calculate the translation difference, particularly for the remeasurement method. A simpler approach is to reformat the financial statements into a trial balance to derive the translation difference as a balancing figure. Appendix 8B shows the translated financial statements of Apple Pie for the year 20x2 using this approach. The following worked example shows the translated financial statements of Apple Pie for 20x2 under the assumption that the functional currency of Apple Pie is the currency of the parent ie the $, and the financial statements had been prepared in the local currency of the subsidiary (FC) using the remeasurement method.

APPLE PIE
Income Statement
For the Year Ended 31 December 20x2

	FC	Rate	$
Sales	800,000	0.75	600,000
Cost of goods sold	(430,000)	(Note 1)	(325,100)
Gross profit	370,000		274,900
Depreciation expense	(43,000)	(Note 2)	(34,030)
Insurance expense	(6,000)	0.81	(4,860)
Operating expense	(84,000)	0.75	(63,000)
Remeasurement loss		(Note 3)	(9,360)
Profit before tax	237,000		163,650
Taxation	(48,000)	0.75	(36,000)

Profit after tax	189,000		127,650
Dividends paid	(50,000)	0.72	(36,000)
Retained earnings, 1 January	84,000	(Note 4)	62,790
Retained earnings, 31 December	223,000		154,440

APPLE PIE
Statement of Financial Position
As at 31 December 20x2

	FC	Rate	$
Fixed assets (net)	334,000	(Note 5)	256,340
Current assets:			
Inventories	100,000	0.74	74,000
Accounts receivable	105,000	0.70	73,500
Cash	150,000	0.70	105,000
Total assets	689,000		508,840
Less:			
Current liabilities:			
Accounts payable	(116,000)	0.70	(81,200)
Tax payable	(30,000)	0.70	(21,000)
	(146,000)		(102,200)
Net assets	543,000		406,640
Share capital	300,000	0.81	243,000
Retained earnings	223,000	(from profit or loss)	154,440
Revaluation surplus	20,000	(Note 6)	9,200
Total equity	543,000		406,640

Note 1: Cost of goods sold

	FC	Rate	$
Opening inventories	80,000	0.77	61,600
Purchases	450,000	0.75	337,500
Closing inventories	(100,000)	0.74	(74,000)
	430,000		325,100

Note 2: Depreciation expense

	FC	Rate	$
Acquired assets	33,000	0.81	26,730
New assets	10,000	0.73	7,300
	43,000		34,030

Note 3: Translation difference

	FC	Rate	$	
Net monetary assets at 1 January	41,000	0.76	31,160	
Sales	800,000	0.75	600,000	
Purchases of inventories	(450,000)	0.75	(337,500)	
Operating expenses	(84,000)	0.75	(63,000)	
Purchase of fixed assets	(100,000)	0.73	(73,000)	
Taxation	(48,000)	0.75	(36,000)	
Dividends	(50,000)	0.72	(36,000)	
			85,660	(A)
Net monetary assets at 31 December	109,000	0.7	76,300	(B)
Translation difference on monetary items (B – A)			(9,360)	

Revalued item:				
Land	50,000	0.81	40,500	
Revaluation surplus	20,000	0.71	14,200	
			54,700	(C)
Land at revalued amount at 31 December	70,000	0.71	49,700	(D)
Translation difference on revalued item (D – C)			(5,000)	

Note 4: This figure cannot be translated as it represents the cumulative retained earnings over the years. However, it is readily obtained from the translated financial statements of the previous year.

Note 5: Fixed assets

	FC	Rate	$
Land	70,000	0.71	49,700
Building	90,000	0.81	72,900
Acquired equipment	84,000	0.81	68,040
New equipment	90,000	0.73	65,700
	334,000		256,340

Note 6: Revaluation surplus

IAS 21 paragraph 30 requires the translation gain or loss arising from the revaluation of a non-monetary item to be taken directly to other comprehensive income. Hence, the revaluation surplus will include the translation loss on the revalued item as follows:

Revaluation surplus (FC 20,000 × 0.71)	$14,200
Translation loss on revalued asset	(5,000)
Balance of revaluation surplus at the end of the year	$ 9,200

APPENDIX 8B

Translation Using a Trial Balance Format

An alternative approach to translation (which is simpler) is to reformat the financial statements into a trial balance and translate the debit and credit columns. The difference between the aggregate debit amount and the aggregate credit amount is the translation difference. A translation loss appears on the debit side and a translation gain appears on the credit side.

Assumption 1: The functional currency is the local currency (closing rate method)

APPLE PIE
Trial Balance
As at 31 December 20x2

	FC	Rate	$
Cash	150,000	0.70	105,000
Accounts receivable (net)	105,000	0.70	73,500
Inventories	100,000	0.70	70,000
Fixed assets (net)	334,000	0.70	233,800
Cost of sales	430,000	0.75	322,500
Depreciation expense	43,000	0.75	32,250
Insurance expense	6,000	0.75	4,500
Operating expense	84,000	0.75	63,000
Taxation	48,000	0.75	36,000
Dividends paid	50,000	0.72	36,000
Foreign currency translation reserves		Balancing figure	49,580
Total debits	1,350,000		1,026,130
Accounts payable	116,000	0.70	81,200
Tax payable	30,000	0.70	21,000

Share capital	300,000	0.81	243,000
Retained earnings	84,000		66,730
Revaluation surplus	20,000	0.71	14,200
Sales	800,000	0.75	600,000
Total credits	1,350,000		1,026,130

Note: Retained earnings balance are the opening retained earnings. This figure is obtained from the previous year's translated financial statements.

Assumption 2: The functional currency is the parent's currency (remeasurement method).

APPLE PIE
Trial Balance
As at 31 December 20x2

	FC	Rate	$
Cost of sales	430,000	(Note 1)	325,100
Depreciation expense	43,000	(Note 2)	34,030
Insurance expense	6,000	0.81	4,860
Operating expense	84,000	0.75	63,000
Taxation	48,000	0.75	36,000
Dividends paid	50,000	0.72	36,000
Cash	150,000	0.70	105,000
Accounts receivable (net)	105,000	0.70	73,500
Inventories	100,000	0.74	74,000
Fixed assets (net)	334,000	(Note 5)	256,340
Remeasurement loss (I/S)		Balancing figure	9,360
Total debits	1,350,000		1,017,190
Accounts payable	116,000	0.70	81,200
Tax payable	30,000	0.70	21,000
Share capital	300,000	0.81	243,000
Retained earnings	84,000	(Note 4)	62,790
Revaluation surplus	20,000	(Note 6)	9,200
Sales	800,000	0.75	600,000
Total credits	1,350,000		1,017,190

Note: For Notes 1, 2, 4, 5 and 6, please refer to translated financial statements (remeasurement method).

APPENDIX 8C

Disposal of Foreign Operations

As discussed in the preceding sections above, paragraph 44 of IAS 21 requires an entity to use the closing rate method to translate the results and financial position of a foreign operation into a presentation currency to facilitate the inclusion of the foreign operation in the financial statements of the reporting entity by consolidation, or the equity method. In a nutshell, all assets and liabilities of the foreign operation are translated at the closing rate; income and expenses are translated at the exchange rates at the dates of transactions[16] and all resulting exchange differences are recognized in other comprehensive income and accumulated in a separate component within equity.

Paragraph 48 of IAS 21 provides guidance on the treatment of the cumulative exchange differences when a foreign operation is disposed[17]. Specifically, the cumulative amount of the exchange differences relating to that foreign operation, recognized in other comprehensive income and accumulated in the separate component of equity, is reclassified from equity to profit or loss when the gain or loss on disposal is recognized. Whilst IAS 21 is silent on which line item the cumulative exchange differences is to be included within the profit or loss, we are of the view that it should be included as part of the calculation on the gain or loss on disposal. This is consistent with the requirements in B98 of IFRS 10 on the accounting treatment when a parent loses control of a subsidiary. This paragraph requires the gain or loss on disposal to be calculated after the amounts recognized in other comprehensive income in relation to the disposed subsidiary are reclassified to the profit or loss[18] amongst other requirements.

ILLUSTRATION 8C.1 Accounting for the disposal of a foreign operation

An US parent company with functional and presentation currency of US$ acquired 100% of a Singapore subsidiary on 31 December 20x1 at cash consideration of S$4.2 million. The fair value of net identifiable assets and liabilities at the date of acquisition was S$3.2 million and the exchange rate at the date of acquisition was 1.79. On 1 March 20x5, the Singapore subsidiary with balance sheet in S$ as reflected below was disposed for cash consideration of US$20 million. The relevant exchange rates are also set out as follows.

page 735

Balance Sheet at 1 March 20x5	S$'000	Breakdown of retained earnings		S$'000
FVOCI equity instruments	5,000		Date of incorporation	
Other assets	21,000	20x1	Profit for the year	3,000
Other liabilities	(3,800)	20x2	Profit for the year	4,500
	22,200	20x2	Less: Dividends paid	(500)
Represented by:		20x3	Profit for the year	5,000
Share capital	200	20x3	Less: Dividends paid	(1,500)
Retained earnings	18,000	20x4	Profit for the year	6,500
Fair value reserves	4,000	20x5	Profit up to 1/3/20x5	1,000
	22,200			18,000

Breakdown of Fair Value Reserves		S$'000	Exchange rates		
				Closing rates	Average rates
	Balance b/f (date of purchase	–	20x1	1.70	1.79
20x3	Fair value changes	2,000	20x2	1.75	1.80
20x4	Fair value changes	1,000	20x3	1.71	1.74
20x5	Fair value changes up to 1/3/20x5	1,000	20x4	1.65	1.69
		4,000	20x5	1.64	1.66

The exchange rates at the date of dividend payment is 1.76 and 1.72 for 20x2 and 20x3 respectively. Calculate the gain or loss on disposal and prepare the accounting entries in the separate and consolidated financial statements. Ignore tax effects.

Analysis

Calculate and translate the goodwill on acquisition of Singapore subsidiary

Date of acquisition

	S$'000	Transaction rate	US$'000
Consideration	4,200	1.79	2,346
Less: Net identifiable assets at fair value	(3,200)	1.79	(1,787)
Goodwill	1,000		559

page 736

Translation of goodwill

		S$'000	Closing rate	US$'000
20x1	Balance at beginning	1,000	1.79	559
	Exchange differences	–		12^
20x2	Balance at end	1,000	1.75	571
	Exchange differences	–		14^
20x3	Balance at end	1,000	1.71	585
	Exchange differences	–		21^
20x4	Balance at end	1,000	1.65	606
	Exchange differences	–		4^
20x5	Balance at date of disposal	1,000	1.64	610

Cumulative exchange difference = Sum of ^ = US$51,000

Translate the financial position and determine the foreign currency translation reserve of the Singapore subsidiary at the date of disposal on 1 March 20x5

Balance Sheet at 1 March 20x5	S$'000	Rate	US$'000
FVOCI equity instruments	5,000	1.64	3,049
Other assets	21,000	1.64	12,805
Other liabilities	(3,800)	1.64	(2,317)
	22,200		13,537
Represented by:			

Share capital	200	1.79	112	
Retained earnings	18,000	*	10,342	
Fair value reserves	4,000	*	2,385	
Foreign currency translation reserve	–		698#	(Balancing)
	22,200		13,537	

* At the respective average rates. Please refer to the computation under analytical check.

Exchange differences on translation of goodwill have yet to be included.

	US$'000
Foreign currency translation reserve	698
Add: Exchange differences on translation of goodwill	51
Total foreign currency translation reserve	749

Analytical check on the foreign currency translation reserve at the date of disposal

The cumulative exchange difference in the foreign currency translation reserve comprises the cumulative exchange differences arising from translating the share capital, retained earnings and fair value reserves at the closing rates versus the transaction rates. Hence,

		S$'000	Transaction Rate	US$'000	Closing Rate	US$'000	Difference
		(1)	(2)	(3) = (1)/(2)	(4)	(5) = (1)/(4)	(6) = (5)-(3)
	Share capital	200	1.79	112	1.64	122	10
	Retained earnings						
20x1	Profit for the year	3,000	1.79	1,676	1.64	1,829	
20x2	Profit for the year	4,500	1.80	2,500	1.64	2,744	
20x2	Less: Dividends paid	(500)	1.76	(284)	1.64	(305)	
20x3	Profit for the year	5,000	1.74	2,874	1.64	3,049	
20x3	Less: Dividends paid	(1,500)	1.72	(872)	1.64	(915)	
20x4	Profit for the year	6,500	1.69	3,846	1.64	3,964	
20x5	Profit up to 1/3/20x5	1,000	1.66	602	1.64	610	
		18,000		10,342		10,976	634
	Fair value reserves						
20x3	Fair value changes	2,000	1.71	1,170	1.64	1,219	
20x4	Fair value changes	1,000	1.65	605	1.64	610	
20x5	Fair value changes up to 1/3/20x5	1,000	1.64	610	1.64	610	
		4,000		2,385		2,439	54
					Exchange difference arising from translation of goodwill		51
					Cumulative exchange difference		749

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements

	US$'000
Sales proceeds	20,000
Less: Cost of investment in separate financial statements	(2,346)
Gain on disposal	17,654

In the consolidated financial statements

	US$'000
Sales proceeds	20,000
Less: Carrying value of net assets at the date of disposal	(13,537)
Less: Goodwill	(610)
Add: Fair value reserves (Note 1)	2,385
Add: Foreign currency translation reserves (Note 1)	749
Gain on disposal	8,987

Explanatory notes:

1. The cumulative balance in the fair value reserve and foreign currency translation reserve are reclassified from equity to profit or loss upon disposal of the Singapore subsidiary in accordance with paragraph 55b of IFRS 9 and paragraph 48 of IAS 21.
2. By reclassifying the foreign currency translation reserves from equity to the profit or loss in the calculation of the gain on disposal, the effects of the translation over the years are unwound and the carrying value of the net assets (previously translated at closing rate) derecognized are effectively reinstated back to their respective average rates.
3. Gain on disposal on the consolidated level is effectively as follows:

Gain on disposal at consolidated level	=	Gain on disposal in separate financial statements	−	Post-acquisition profits of Singapore subsidiary (at transaction rates)
	=	US$ 17,654,000	−	US$8,667,000#
	=	US$ 8,987,000		

is derived as:

	Retained earnings	S$'000	Average rate	US$'000
20x2	Profit for the year	4,500	1.80	2,500
20x2	Less: Dividends paid	(500)	1.76	(283)
20x3	Profit for the year	5,000	1.74	2,874
20x3	Less: Dividends paid	(1,500)	1.72	(872)
20x4	Profit for the year	6,500	1.69	3,846
20x5	Profit up to 1/3/20x5	1,000	1.66	602
		15,000		8,667

Prepare the accounting entries

In the separate financial statements

Dr Cash	20,000,000	
Cr Cost of investment in subsidiary		2,346,000
Cr Gain on disposal of investment		17,654,000

Being disposal of investment in subsidiary in the separate financial statements

In the consolidated financial statements

Dr Gain on disposal	8,667,000	
Cr Share of results of subsidiary up to date of disposal@		602,000
Cr Beginning retained profits		8,065,000

Being adjustment of gain on disposal of subsidiary at group level

@ For the purpose of illustration, this entry is reflected as a net Cr balance. The $602,000 should be distilled to the individual profit and loss line items for the current year in the US parent's financial statements up to the date of disposal.

In addition to the disposal of an entity's entire interest in a foreign operation, paragraph 48A of IAS 21 clarifies that the following partial disposals are accounted for as disposals:

(a) when the partial disposal involves the loss of control of a subsidiary that includes a foreign operation, regardless of whether the entity retains a non-controlling interest in its former subsidiary after the partial disposal; and

(b) when the retained interest after the partial disposal of an interest in a joint arrangement or a partial disposal of an interest in an associate that includes a foreign operation is a financial asset that includes a foreign operation.

It should be emphasized here that IAS 21 requires the entire amount of cumulative exchange differences in respect of the foreign entity for which the parent/investor lost control, significant influence or joint control to be reclassified to profit or loss even if the parent/investor continues to retain an interest after the transaction. For example: an entity which previously held 100% interest in a foreign operation is required to reclassify 100% of the cumulative exchange difference accumulated in a separate component within equity, relating to that foreign operation to the profit and loss when it disposes 80% to an external party. This is notwithstanding that entity continues to retain 20% in the foreign operation after the disposal.

When the subsidiary that contains the foreign operation is not wholly-owned by the parent, the cumulative amount of the exchange differences arising from the translation of the subsidiary is attributed to both the parent and the non-controlling interests. The cumulative exchange differences allocated to the non-controlling interests is recognized within the carrying value of the non-controlling interests on the statement of financial position. On disposal of the subsidiary, the carrying value of non-controlling interests which includes the cumulative amount of the exchange differences attributed to them is derecognized, but is not reclassified to profit or loss.

ILLUSTRATION 8C.2 Accounting for loss of control of a foreign partially-owned subsidiary

An US parent company with functional and presentation currency of US$ has 80% interest in a Singapore subsidiary which it incorporated in 20x2 with Company A (NCI). The share capital of the Singapore subsidiary at the date of incorporation is S$400,000 and the exchange rate on that date is 1.55. On 31 December 20x5, the US parent sells its 80% interest to a third party at cash consideration of US$7.5 million. The financial position of the Singapore subsidiary at the date of disposal and the relevant exchange rates are set out as follows.

Balance Sheet at 31 December 20x5	S$'000	Breakdown of retained earnings	S$'000
Other assets	16,000	20x2 Balance at beginning	–
Other liabilities	(3,200)	20x3 Profit for the year	1,400
	12,800	20x4 Profit for the year	5,000
		20x5 Profit for the year	6,000
Represented by:			12,400
Share capital	400		
Retained earnings	12,400		
	12,800		

Exchange rates

	Closing rates	Average rates
20x3	1.71	1.74
20x4	1.65	1.69
20x5	1.64	1.66

Calculate the gain or loss on disposal and prepare the accounting entries in the separate and consolidated financial statements.

Analysis

Translate the financial position of the Singapore subsidiary and determine non-controlling interests, retained earnings and the foreign currency translation reserve attributable to the parent at the date of disposal on 31 December 20x5

Balance Sheet at 31 December 20x5	S$'000	Rate	US$'000	
Other assets	16,000	1.64	9,756	
Other liabilities	(3,200)	1.64	(1,951)	
	12,800		7,805	
Represented by:				
Share capital	400	1.55	258	
Retained earnings	12,400	*	7,378	
Foreign currency translation reserve	–		169	(Balancing)
Non-controlling interests	–		–	
	12,800		7,805	

* At the respective average rates. Please refer to the computation under analytical check.

Non-controlling interest at date of disposal^	= Non-controlling interest's share of share capital	+ Non-controlling interest's share of beginning retained and current year profits (at average rates)	+ Non-controlling interests share of foreign currency translation reserve
	= 20% × (400,000/1.55)	+ 20% × (805,000+2,959,000) + 20% × 3,614,000	+ 20% × 169,000
	= 20% × (400,000/1.55)	+ 20% × 7,378,000	+ 20% × 169,000
	= 52,000	+ 753,000 + 723,000	+ 33,000
	= 52,000	+ 1,476,000	+ 33,000
	= 1,561,000		

^Rounded to the nearest '000.

Hence,

Retained earnings attributable to parent at the date of disposal	= Retained earnings for the Singapore subsidiary	– Retained earnings attributable to NCI
	= 7,378,000	– 1,476,000
	= 5,902,000	

Foreign currency translation reserve attributable to parent at the date of disposal	= Foreign currency translation reserve for the Singapore subsidiary	– Foreign currency translation reserve attributable to NCI
	= 169,000	– 33,000
	= 136,000	

Analytical check on the foreign currency translation reserve at the date of disposal

		S$'000	Transaction Rate	US$'000	Closing Rate	US$'000	Difference
		(1)	(2)	(3) = (1)/(2)	(4)	(5) = (1)/(4)	(6) = (5)–(3)
	Share capital	400	1.55	258	1.64	244	(14)
	Retained earnings						
20x3	Profit for the year	1,400	1.74	805	1.64	853	
20x4	Profit for the year	5,000	1.69	2,959	1.64	3,049	
20x5	Profit for the year	6,000	1.66	3,614	1.64	3,659	
		12,400		7,378		7,561	183
				Cumulative exchange difference			169

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements

	US$'000
Sales proceeds	7,500
Less: Cost of investment in separate financial statements	(206)^
Gain on disposal	7,294

^Derived as 80%*(400,000/1.55)

In the consolidated financial statements

	US$'000
Sales proceeds	7,500
Less: Carrying value of net assets	(6,244)*
Add: Foreign currency translation reserves (Note 1)	136
Gain on disposal	1,392

* Derived as 80%*carrying value of assets of US$7,805,000

Explanatory notes:

1. The cumulative balance in the foreign currency translation reserve is reclassified from equity to profit or loss upon disposal of the Singapore subsidiary in accordance with paragraph 48 of IAS 21. This is derived as 80%*cumulative exchange difference of US$169,000.
2. By reclassifying the foreign currency translation reserves from equity to the profit and loss in the calculation of the gain on disposal, the effects of the translation over the years are unwound and the carrying value of the net assets (previously translated at closing rate) derecognized are effectively reinstated back to their respective average rates.
3. Gain on disposal at the consolidated level is effectively as follows:

Gain on disposal at consolidated level	=	Gain on disposal in separate financial statements	– Parent's share of post-acquisition profits of Singapore subsidiary (at average rates)
	=	7,294,000	– 80% × 7,378,000#
	=	7,294,000	– 5,902,000
	=	1,392,000	

is derived as:

Retained earnings	S$'000	rate	US$'000
20x3 Profit for the year	1,400	1.74	805
20x4 Profit for the year	5,000	1.69	2,959
20x5 Profit for the year	6,000	1.66	3,614
	12,400		7,378

Prepare the accounting entries

In the separate financial statements

Dr Cash	7,500,000	
Cr Cost of investment in subsidiary		206,000
Cr Gain on disposal of investment		7,294,000

Being disposal of investment in subsidiary in the separate financial statements

In the consolidated financial statements

Dr Gain on disposal	5,902,000		
Cr Share of results of subsidiary up to date of disposal*		2,891,000	[80% × 3,614,000]
Cr Beginning retained profits		3,011,000	[80% × (805,000+2,959,000)]

Being gain on disposal of investment in subsidiary at group level

*For the purpose of illustration, this entry is reflected as a net Cr balance. The $2,891,000 should be distilled to the individual profit and loss line items for the current year in the US parent's financial statements up to the date of disposal.

Explanatory notes:

1. Non-controlling interests are not featured in this set of accounting entries as the US parent has disposed all its shareholding interest (i.e. 80%) at 31 December 20x5. Accordingly, the Singapore entity is no longer a subsidiary at the date of disposal as control is lost. Non-controlling interests is accordingly derecognized from the balance sheet without reclassifying through profit or loss account.

PARTIAL DISPOSAL OF FOREIGN OPERATIONS

A partial disposal of an entity's interest in a foreign operation is defined by paragraph 48D of IAS 21 as any reduction in an entity's ownership interest in a foreign operation, except those reductions that are accounted for as disposals as discussed above. Paragraph 49 further clarifies that a write-down of the carrying amount of a foreign operation, either due to its own losses or as a result of an impairment recognized by the investor does not constitute a partial disposal. Accordingly, in this situation, the accounting treatment of exchange differences for partial disposal of foreign operation does not apply.

Paragraph 48C of IAS 21 requires the entity to re-attribute the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income to the non-controlling interests in that foreign operation when the entity partially disposes a subsidiary that includes a foreign operation. In this case, as the parent has not lost control, the subsidiary continues to be consolidated as part of the group and the partial disposal is accounted for as an equity transaction i.e. transactions with owners in their capacity as owners in accordance with paragraph 23 of IFRS 10. In this case, the interests disposed will form part of non-controlling interests and the parent will adjust the carrying amounts of the controlling and non-controlling interests to reflect the changes in their relative interests in the subsidiary in accordance with B96 of IFRS 10. Hence, the requirement in paragraph 48C of IAS 21 to re-attribute the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income to the non-controlling interests is consistent with the principle in paragraph B96 of IFRS 10.

ILLUSTRATION 8C.3 Accounting for partial disposal of foreign subsidiary

Using the same fact pattern as in illustration 8C.1 Instead of disposing 100% of the Singapore subsidiary, assume that the US parent company sells 20% of its shareholding interests to a third party for US$4 million i.e. the US parent company continues to retain control over the Singapore subsidiary post-disposal.

Calculate the gain or loss on disposal and prepare the accounting entries in the separate and consolidated financial statements.

Analysis

In this case, because control continues to be retained by the US parent company, the transaction is accounted for as a partial disposal and the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income is re-attributed to the non-controlling interests in that foreign operation.

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements

	US$'000
Sales proceeds	4,000
Less: Cost of investment in separate financial statements	(469)+
Gain on disposal	3,531

+Derived as 20% × 2,346,000

In the consolidated financial statements

	US$'000	
Sales proceeds	4,000	
Less: Proportionate share of net assets	(2,707)	[20% × 13,537,000]
Less: Proportionate share of goodwill	(122)	[20% × 610,000]
Add: Proportionate share of fair value reserves	477	[20% × 2,385,000]
Add: Proportionate share of foreign currency translation reserves	150	[20% × 749,000]
Premium on disposal of interests to NCI (Note 1)	1,798	

Explanatory notes:

1. As the US parent company still retains control, the partial disposal is accounted for as an equity transaction, i.e. transactions with owners in their capacity as owners in the consolidated financial statements. Accordingly, the difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration received is recognized in equity and attributed to the owners of the US parent in accordance with B96 of IFRS 10.
2. Gain on disposal on the consolidated level is effectively as follows:

Gain on disposal at consolidated level	= Gain on disposal in separate financial statements	−	Parent's disposed share of post-acquisition profits of Singapore subsidiary (at average rates)
	= 3,531,000	−	20% × 8,667,000#
	= 1,798,000		

is derived as:

Retained earnings		S$'000	rate	US$'000
20x2	Profit for the year	4,500	1.80	2,500
20x2	Less: Dividends paid	(500)	1.76	(283)
20x3	Profit for the year	5,000	1.74	2,874
20x3	Less: Dividends paid	(1,500)	1.72	(872)
20x4	Profit for the year	6,500	1.69	3,846
20x5	Profit up to 1/3/20x5	1,000	1.66	602
		15,000		8,667

Calculate the relative proportion of equity items and exchange effects of translation of goodwill to be allocated to non-controlling interests

			Non-controlling interests (20%)	Parent's interest (80%)
		US$'000	US$'000	US$'000
	Share capital	112	23	89
	Retained earnings			
20x1	Profit for the year – pre-acquisition reserves*	1,676	335	1,341
20x2 to 1/3/20x5	Profit for the year – post-acquisition reserves*	8,666	1,733	6,933
		10,342	2,068	8,274
	Fair value reserves	2,385	477	1,908
	Foreign currency translation reserve	698	150	548
		13,537	2,718	10,819
	Goodwill at transaction rate	559	112	447
	Exchange difference on translation of goodwill	51	10	41
	Goodwill at closing rate	610	122	488

* The concept of pre-acquisition and post-acquisition reserves is only relevant for the parent's interest.

Prepare accounting entries

In the separate financial statements

Dr Cash	4,000,000		
Cr Cost of investment in subsidiary		469,000	
Cr Gain on disposal		3,531,000	

Being disposal of 20% interests in investment in subsidiary in the separate financial statements

In the consolidated financial statements

Dr Share capital	89,000		
Dr Retained earnings	1,341,000		
Dr Goodwill	447,000		
Cr Investment in subsidiary		1,877,000	[2,346,000 – 469,000]

Being elimination of parent's investment in subsidiary and share capital as well as pre-acquisition reserves of subsidiary

Dr Goodwill	41,000	
Cr Foreign currency translation reserve		41,000

Being parent's share of exchange differences on translation of goodwill

Dr Gain on disposal of investment	3,531,000	
Cr Premium on disposal of interests to NCI		3,531,000

Being reclassification of gain on disposal of investment to premium on disposal of interest to NCI – Note 1

Dr Premium on disposal of interests to non-controlling interests	1,733,000	
Dr Share capital	23,000	
Dr Retained profits	335,000	
Dr Fair value reserves	477,000	
Dr Foreign currency translation reserve	150,000	
Dr Goodwill	122,000	
Cr Non-controlling interests		2,840,000

Being reattribution of other comprehensive income and elimination of share capital attributable to non-controlling interests

Explanatory notes:

1. The reclassification entry is required as the partial disposal is accounted for as an equity transaction in the consolidated financial statements and the difference between the amount by which the non-controlling interests are adjusted for and the fair value of the consideration received is recognized in equity.

PARTIAL DISPOSALS OF FOREIGN ASSOCIATES OR JOINT ARRANGEMENTS

Paragraph 48C further stipulates that the entity is required to reclassify only the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income to profit or loss in any other partial disposal of a foreign operation. Other partial disposal of foreign operations in this case would include partial disposal of interests in a foreign associate or joint arrangement. The rationale why this accounting treatment is different from that required in a partial disposal of a subsidiary that includes a foreign operation is because in the cases mentioned above, the investor accounts for only its share of net assets and results i.e. to the extent of its interests in the associate in its financial statements. The amount attributed to other interests is not included within the investor's financial statements. Accordingly, these changes in ownership interests without loss of significant influence or joint control including the proportionate cumulative exchange differences are accounted for in profit or loss.

ILLUSTRATION 8C.4 Accounting for other partial disposal of foreign operations

An US parent company with functional and presentation currency of US$ acquired 40% of a Singapore associate on 31 December 20x2 at cash consideration of S$500,000. The fair value of the net identifiable assets at the date of acquisition was S$320,000 and the exchange rate at the date of acquisition was 1.55. On 31 December 20x5, 20% of the interests in the Singapore associate with balance sheet in S$ as set out below was disposed for cash consideration of US$4 million. The relevant exchange rates are also set out as follows.

Balance Sheet at 31 December 20x5	S$'000
Other assets	18,200
Other liabilities	(2,400)
	15,800
Represented by:	
Share capital	600
Retained earnings	15,200
	15,800

Breakdown of retained earnings		S$'000
20x2	Balance at beginning	200
20x3	Profit for the year	4,000
20x4	Profit for the year	5,000
20x5	Profit for the year	6,000
		15,200

Exchange rates

	Closing rates	Average rates
20x2	1.75	1.55
20x3	1.71	1.74
20x4	1.65	1.69
20x5	1.64	1.66

Calculate the gain or loss on disposal and prepare the accounting entries in the separate and consolidated financial statements. Assume that the US parent company has other subsidiaries and it prepares both consolidated and separate financial statements. Ignore tax effects.

Analysis

Calculate and translate the goodwill on acquisition of associate

Date of acquisition based on US parent's 40% interest

	S$'000	Transaction Rate	US$'000
Consideration paid	500	1.55	322
Less: Fair value of net identifiable assets	(320)	1.55	(206)
Goodwill	180		116

Translation of goodwill

		S$'000	Closing rate	US$'000
20x2	Balance at beginning and end	180	1.55	116
	Exchange differences	–		(11)^
20x3	Balance at end	180	1.71	105
	Exchange differences	–		4^
20x4	Balance at end	180	1.65	109
	Exchange differences	–		1^
20x5	Balance at date of disposal	180	1.64	110

Cumulative exchange difference = Sum of^ = (US$6,000)

Translate the financial position and determine the parent's share of foreign currency translation reserve of the Singapore associate at the date of disposal on 31 December 20x5

Balance Sheet at 31 December 20x5	S$'000	Rate	US$'000	Parent's 40% Interest
Other assets	18,000	1.64	11,098	4,439
Other liabilities	(2,400)	1.64	(1,464)	(585)
	15,800		9,634	3,854
Represented by:				
Share capital	600	1.55	387	155
Retained earnings	15,200	*	9,001	3601
Foreign currency translation reserve	–		246	98
	15,800		9,634	3,854

* At the respective average rates. Please refer to computation under analytical check.

	US$'000
Parent's share of foreign currency translation reserve	98
Add: Exchange differences on translation of goodwill	(6)
Parent's share of total foreign currency translation reserve	92

Analytical check on the total foreign currency translation reserve at the date of disposal before accounting for parent's share of exchange difference on translation of goodwill

		S$'000	Transaction Rate	US$'000	Closing Rate	US$'000	Difference
		(1)	(2)	(3) = (1)/(2)	(4)	(5) = (1)/(4)	(6) = (4)–(2)
	Share capital	600	1.55	387	1.64	366	(21)
	Retained earnings						
20x2	Balance b/f	200	1.55	129	1.64	122	
20x3	Profit for the year	4,000	1.74	2,299	1.64	2,439	
20x4	Profit for the year	5,000	1.69	2,959		3,049	
20x5	Profit for the year	6,000	1.66	3,614	1.64	3,659	
		15,200		9,001		9,268	267
	Cumulative exchange difference before exchange difference on translation of goodwill						246

Calculate the gain on disposal in the separate and consolidated financial statements

In the separate financial statements

	US$'000
Sales proceeds	4,000

Less: Cost of investment in separate financial statements	(161)*
Gain on disposal	3,839

* Derived as 50% × carrying value of US$322,000

In the consolidated financial statements

	US$'000
Sales proceeds	4,000
Less: Cost of investment in separate financial statements	(1,982)
Add: Foreign currency translation reserves (Note 2)	46
Gain on disposal	2,064

Explanatory notes:

1. The carrying value of net assets is derived as:

Investment in associate	US$'000	
Cost	323	
Share of beginning retained profits	2,103	[40% × (2,299,000+2,959,000)]
Share of profits for the year	1,446	40% × 3,614,000]
Share of foreign currency translation reserve	92	(inclusive of exchange difference of translation of goodwill)
	3,964	
Analytical check:		
Share of carrying value of associate	3,854	[40% × 9,634,000]
Parent's share of goodwill	110	
	3,964	
Therefore:		
50% of carrying value disposed	1,982	

2. Derived as 50%*Balance in foreign currency translation reserve of US$92,000. As this is a partial disposal of a foreign operation, the proportionate share of the cumulative amount of the exchange differences disposed (i.e. 50% in this case) is reclassified from other comprehensive income to profit or loss in the calculation of the gain on disposal.
3. Gain on disposal at the consolidated financial statements level is effectively as follows:

page 750

Gain on disposal at consolidated financial statements level	= Gain on disposal in separate financial statements	− Parent's disposed share of post-acquisition profits of Singapore associate (at average rates)
	= 3,839,000	− 20% × 8,872,000#
	= 3,839,000	− 1,774,000
	= 2,064,000	

is derived as:

Post-acquisition retained earnings	S$'000	Average rate	US$'000
20x3 Profit for the year	4,000	1.74	2,299
20x4 Profit for the year	5,000	1.69	2,959
20x5 Profit for the year	6,000	1.66	3,614
	18,000		8,872

Prepare the accounting entries

In the separate financial statements

Dr Cash	4,000,000	
Cr Cost of investment in associate		161,000
Cr Gain on disposal		3,839,000

Being disposal of 20% interests in investment in associate in the separate financial statements

In the consolidated financial statements

Dr Investment in associate	3,647,000	
Cr Share of beginning retained profits		2,103,000
Cr Share of associate's profit for the year		1,446,000
Cr Share of associate's foreign currency translation reserve		98,000

Being equity accounting for associate's share of results up to the date of disposal

Dr Share of associate's foreign currency translation reserve	6,000	
Cr Investment in associate		6,000

Being parent's share of exchange difference of translation of goodwill

Dr Gain on disposal	1,775,000	
Dr Share of associate's foreign currency translation reserve	46,000	
Cr Investment in associate (Note 1)		1,821,000

Being adjustment for gain on disposal at consolidated financial statements level

Explanatory note:

1. Credit entry relates to the US parent's 20% share of associate's post-acquisition results and foreign currency translation reserve up to the date of disposal given up. Subsequent to this entry, the investment in associate account in the US parent's consolidated financial statements stands at:

Investment in associate	US$'000	
Cost	161	
Share of beginning retained profits	1,052	
Share of profits for the year	723	
Share of foreign currency translation reserve	46	
	1,982	
Analytical check:		
Share of carrying value of associate	1,927	[20% × 9,634,000]
Parent's share of goodwill	55	
	1,982	

APPENDIX 8D

Step-by-Step Versus Direct Method of Consolidation and Its Effects on Disposals

Paragraph 48 of IAS 21 requires a parent to reclassify the cumulative amount of the exchange differences relating to a foreign operation, recognized in other comprehensive income and accumulated in the separate component of equity to profit or loss when the parent disposes that foreign operation. In appendix 8C, the application of this requirement in situations where a parent disposes a direct subsidiary were explored in details.

This requirement applies equally when an indirect subsidiary is sold i.e. where the subsidiary sold is held by an intermediate parent. However, in this instance, if the functional and presentation currencies of both the intermediate parent company and the indirect subsidiary are different from the group presentation currency, the amount of cumulative exchange differences recorded on translation and subsequently reclassified to profit or loss upon disposal is affected by the method of consolidation adopted by the group.

There are two methods of consolidation that can be applied. They are namely the direct method of consolidation or step-by-step method of consolidation. In the direct method of consolidation, the financial statements of foreign operations are translated into the ultimate parent company's functional currency (or the presentation currency if the functional currency of the ultimate parent company is different from the presentation currency) for purposes of consolidation. On the other hand, in the case of the step-by-step method, the financial statements of the foreign operations are translated into the functional currency (or presentation currency if different) of the intermediate holding company for consolidation. The consolidated financial statements of the intermediate holding company in turn are translated into the functional currency of the ultimate parent company (or group presentation currency if different) for consolidation.

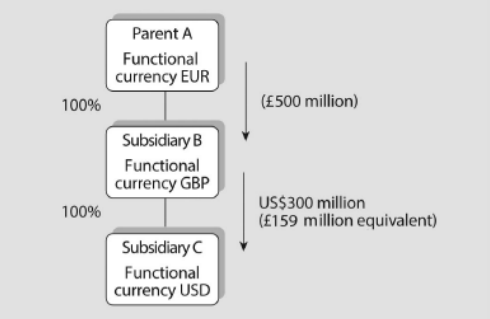
In terms of accounting effect, paragraph 17 of IFRIC 16 *Hedges of a Net Investment in a Foreign Operation* explains that the aggregate net amount recognized in the foreign currency translation reserve in respect of all foreign operations is not affected by the consolidation method in the ultimate parent company's consolidated financial statements. Effectively, what this means is that, regardless of whether the direct method or step-by-step method is used, the balance in the foreign currency translation reserve in respect of all foreign operations in both cases is the same. However, the amount included in the foreign currency translation reserve in respect of an individual foreign operation may be affected by the type of consolidation method used. Accordingly, if a foreign operation is disposed, the amount of cumulative difference reclassified from the equity to profit and loss may differ depending on the method used.

The IFRIC, as set out in BC38 to IFRIC 16, noted that the amount of foreign currency translation reserve for an individual foreign operation calculated by the direct method is conceptually correct as it reflects the economic risk between the functional currency of the foreign operation and that of the ultimate parent company (if both the parent's functional and presentation currency are the same). However, as IAS 21 does not require an entity to use this method or make adjustments to produce the same results, IFRIC permitted the use of either of these methods as an accounting policy choice in IFRIC 16.

page 753

Adapting the illustrative example in IFRIC 16, the accounting effects of the different types of consolidation as well as the difference in the amount of cumulative exchange difference to be reclassified from equity to profit or loss in respect of the disposal of an individual foreign operation is demonstrated below.

ILLUSTRATION 8D.1 Direct Method versus Step-by-Step Method of Consolidation



January 20x5, a German parent company (Parent A) with functional currency Euro incorporates a wholly-owned UK subsidiary (Subsidiary B) by injecting £500 million as share capital. On the same day, UK subsidiary B incorporates a wholly-owned US subsidiary (Subsidiary C) by injecting £159 million (or US$263 million equivalent) from the share capital injected by the German parent A. The functional currency of the UK and US subsidiary are pounds and US dollars respectively. For the purposes of demonstrating the effects of direct method and step-by-step method of consolidation, it is assumed that the 3 entities did not generate any income during the year. On 31 December 20x5, the German parent disposes the US subsidiary to a third party for US$263 million. The relevant exchange rates are as follows:

Exchange rates		
1 January 20x5	1 GBP = 1.2013 EUR	1 USD = 0.7252 EUR
31 December 20x5	1 GBP = 1.2824 EUR	1 USD = 0.8235 EUR

Analysis

Scenario 1: Consolidating using the direct method of consolidation

In the direct method of consolidation, the financial statements of the UK and US subsidiaries will be translated into Euro which is the functional and presentation currency of the German parent company for direct consolidation.

page 754

As at 1 January 20x5, the consolidated financial statements of German parent and its subsidiaries are as follows:

	German Parent A	UK Subsidiary B		US Subsidiary C		Consolidation Adjustments	Consol Total
In millions	Euro	GBP	Euro	US$	Euro	Euro	Euro
			1.2013		0.7252		
Investment in UK subsidiary B	601	–	–	–	–	(601)	–
Investment in US subsidiary C	–	159	191	–	–	(191)	–
Other assets	224	341	410	263	191	–	825
	825	500	601	263	191		825
Share capital	825	500	601	263	191	(792)	825

Explanatory notes:

1. The consolidation entries passed are as follows:

(In millions)		
Dr Share capital	792	
Cr Investment in UK subsidiary B		601
Cr Investment in US subsidiary C		191

(Being elimination of share capital and investment in subsidiaries)

As at 31 December 20x5, the consolidated financial statements of German parent and its subsidiaries are as follows:

	German Parent A	UK Subsidiary B		US Subsidiary C		Consolidation Adjustments	Consol Total
In millions	Euro	GBP	Euro	US$	Euro	Euro	Euro
			1.2824		0.8235		
Investment in UK subsidiary B	601	–	–	–	–	(601)	–
Investment in US subsidiary C	–	159	204	–	–	(204)	–
Other assets	224	341	437	263	217	–	878
	825	500	641	263	217		878
Share capital-German parent A ...	825	–	–	–	–		825
Share capital-UK subsidiary B	–	500	601	–	–	(601)	–
Share capital- US subsidiary C	–	–	–	263	191	(191)	–
FCTR – UK subsi B	–	–	40	–	–	(13)	27
FCTR – US subsi C	–	–	–	–	26		26
	825	500	641	263	217		878

FCTR denotes foreign currency translation reserve.

Explanatory notes:

1. The consolidation entries passed are as follows:

(In millions)		
Dr Share capital – UK subsi B	601	
Dr Share capital – US subsi C	191	
Dr FCTR – UK subsidiary B	13	
Cr Investment in UK subsidiary B		601
Cr Investment in US subsidiary C		204

Being elimination of share capital and investment in subsidiaries

2. Gain/Loss on disposal at the consolidated financial statements of German Parent

(In millions)	Euro
Sales proceeds (US$263 million × 0.8235)	217
Less: Carrying value of net assets disposed	(217)
Add: Foreign currency translation reserves	26
Gain on disposal	26

Under the direct method of consolidation, the cumulative exchange difference arising from translating the financial statements of the US subsidiary C into Euro, the presentation currency of the German parent A amounted to Euro $26 million as at 31 December 20x5. Upon disposal of the US subsidiary C, this is the amount that will be reclassified from equity to profit or loss in accordance with paragraph 48 of IAS 21.

Scenario 2: Consolidating using the step-by-step method of consolidation

In the step-by-step method of consolidation, the financial statements of the US subsidiary C are translated into Sterling Pounds for the subgroup consolidation at the UK subsidiary B level. Following that, the consolidated financial statements of the UK subgroup in Sterling Pounds is translated into Euro for consolidation at the German parent level.

As at 1 January 20x5, the subgroup consolidated financial statements of the UK subsidiary are as follows:

	UK Subsidiary B	US Subsidiary C		Consolidation Adjustments	Consol Total
In millions	GBP	US$	GBP	GBP	GBP
			0.6037*		
Investment in US subsi C	159	–	–	(159)	–
Other assets	341	263	159		500
	500	263	159		500
Share capital-UK subsi B	500	–	–		500
Share capital- US subsi C	–	263	159	(159)	–
	500	263	169		500

* Derived as 0.7252/1.2013.

Explanatory notes:

1. The consolidation entries passed are as follows:

(In millions)

Dr Share capital – US subsidiary C 159

Cr Investment in UK subsidiary B 159

Being elimination of share capital and investment in subsidiaries

Consolidation of the UK Subgroup with the financial statements of the German Parent A

	German Parent A	UK subgroup		Consolidation Adjustments	Consol Total
In millions	Euro	GBP	Euro	Euro	Euro
			1.2013		
Investment in UK subsidiary B	601	–	–	(601)	–
Other assets	224	500	601	–	825
	825	500	601		825
Share capital-German parent A	825	–	–		825
Share capital- UK subsidiary B	–	500	601	(601)	–
	825	500	601		825

Explanatory notes:

1. The consolidation entries passed are as follows:

(In millions)

Dr Share capital – UK subsidiary B 601

Cr Investment in UK subsidiary B 601

Being elimination of share capital and investment in subsidiaries

As at 31 December 20x5, the subgroup consolidated financial statements of UK subsidiary B are as follows:

	UK Subsidiary B	US Subsidiary C		Consolidation Adjustments	Consol Total
In millions	GBP	US$	GBP	GBP	GBP
			0.6422[+]		
Investment in US subsidiary C	159	–	–	(159)	–
Other assets	341	263	169		510
	500	263	169		510
Share capital-UK subsidiary B	500	–	–		500
Share capital- US subsidiary C	–	263	159	(159)	–
FCTR – US subsi C	–	–	10		10
	500	263	169		510

[+] Derived as 0.8235/1.2824.

Explanatory notes:

1. The consolidation entries passed are as follows:

(In millions)

Dr Share capital – US subsidiary 159

Cr Investment in US subsidiary 159

Being elimination of share capital and investment in subsidiaries

Consolidation of the UK Subgroup with the financial statements of the German Parent

	German Parent A	UK subgroup		Consolidation Adjustments	Consol Total
In millions	Euro	GBP	Euro	Euro	Euro
			1.2824		
Investment in UK subsidiary	601	–	–	(601)	–
Other assets	224	510	654	–	878
	825	510	654		878
Share capital-German parent A	825	–	–		825
Share capital- UK subsidiary B	–	500	601	(601)	–
FCTR – US subsi C	–	10	13		13
FCTR – UK subsi B	–	–	40		40
	825	510	654		878

Explanatory notes:

1. The consolidation entries passed are as follows:

(In millions)		
Dr Share capital – UK subsidiary B	601	
Cr Investment in UK subsidiary B		601
Being elimination of share capital and investment in subsidiaries		

Under the step-by-step method of consolidation, the cumulative exchange differences arising from translating the financial statements of the US subsidiary C into Euro, the presentation currency of the German parent A amounted to Euro 13 million as at 31 December 20x5. Upon disposal of the US subsidiary C, this is the amount that will be reclassified from equity to profit or loss in accordance with paragraph 48 of IAS 21.

Comparison between the direct and step-by-step method of consolidation

As evident from the illustrations above, regardless of whether the direct method or step-by-step method is used, the balance in the foreign currency translation reserve in respect of all foreign operations in German parent A's consolidated financial statements is the same in both cases i.e. Euro 53 million.

However, the amount included in the foreign currency translation reserve in respect of an individual foreign operation may be affected by the type of consolidation method used and this is obvious especially when the foreign operation is disposed. In this case, when the direct method is used, the cumulative exchange difference of the US subsidiary C reclassified to the profit or loss upon disposal is Euro 26 million. Conversely, the cumulative exchange difference reclassified is Euro 13 million when the step-by-step method is used.

CONCEPT QUESTIONS

CQ8.1

Distinguish between operating exposure and accounting exposure.

CQ8.2

What are the two types of accounting exposure and how do they arise?

CQ8.3

Explain what a "functional" currency is and discuss its significance.

CQ8.4

Explain the conceptual basis for the closing rate method and the remeasurement method.

CQ8.5

Explain the treatment of translation differences under the translation process (closing rate method) and the remeasurement method.

CQ8.6

How is a change in the functional currency of a foreign operation accounted for?

CQ8.7

If the functional currency of a foreign subsidiary is the local currency, is there any translation adjustment arising from goodwill on acquisition of a foreign subsidiary? Explain.

CQ8.8

A Singapore company has a subsidiary in England and another subsidiary in the United States. Both subsidiaries maintain their books and accounting records in their respective currencies. The functional currency of both the subsidiaries is the US dollar. What methods will the Singapore parent use to translate each of the subsidiary's financial statements into its presentation currency, the Singapore dollar?

(a) Both subsidiaries will use the closing rate method to translate their financial statements.

(b) The US subsidiary will use the closing rate method and the subsidiary in England will use remeasurement method.

(c) The US subsidiary will use the closing rate method while the subsidiary in England will first remeasure its financial statements into the US dollar and then translate using the closing rate method.

(d) The US subsidiary will use the closing rate method while the subsidiary in England will first use the closing rate method to translate its financial statements into the US dollar and then remeasure the financial statements into the presentation currency.

EXERCISES

Use the following information to answer E8.1 and E8.2

On 31 December 20x3, Zeus Ltd, whose functional currency is the dollar ($), incorporated a subsidiary, Apollo (X) Ltd, in country X, whose currency was the FC. Apollo operated a car rental business. The company was incorporated with a paid-up capital of FC 2,000,000. On 31 December 20x3, Apollo purchased a fleet of cars that cost FC 2,000,000. During 20x4, Apollo earned FC 1,000,000 from rental income. Depreciation for the year was FC 200,000. At the end of 20x4, Apollo had a cash balance of FC 1,000,000. Exchange rates are as follows:

31 December 20x3	FC 1 = $0.50
31 December 20x4	FC 1 = $0.70
Average for 20x4	FC 1 = $0.60

Ignore taxation.

E8.1 If Apollo's functional currency is the dollar, Apollo's translated net profit is:

(a) $700,000
(b) $600,000
(c) $500,000
(d) $480,000

E8.2 If Apollo's functional currency is the FC, which of the following statements holds?

(a) A translation gain of $480,000 is recorded in income.
(b) A translation loss of $480,000 is taken to Foreign Currency Translation Reserve.
(c) A translation gain of $480,000 is taken to Foreign Currency Translation Reserve.
(d) A translation gain of $100,000 is recorded in income.

The following information applies to E8.3 and E8.4

The information below relates to Company Y, a foreign subsidiary of Solitaire Corporation. Company Y records its books in FC, the currency of the country in which it operates.

	FC
Net assets at 1 January 20x1	60,000
Net monetary assets/(liabilities) at 1 January 20x1	(100,000)
Transactions during the year:	
Sales during 20x1	500,000
Salaries, rent and utilities during 20x1	350,000
Depreciation of office furniture	50,000
Unearned revenue received during the year	60,000
Issue of new shares for cash	1,000,000

page 760

Exchange rates at the following dates:	FC 1: $
At date of purchase of office equipment (30 June 20x0)	0.58
1 January 20x1	0.60
Average rate	0.55
At date of receipt of unearned revenue	0.48
At date of issue of new shares	0.50
31 December 20x1	0.50

E8.3 If Company Y's functional currency is the dollar, and Company Y's financial statements are to be consolidated into Solitaire's group financial statements, what is the net exposed amount in FC units as at 31 December 20x1 that may give rise to gains or losses as a result of exchange rate movements?

(a) Net assets of FC 1,160,000
(b) Net monetary assets of FC 110,000
(c) Net monetary assets of FC 1,110,000
(d) Net assets of FC 160,000

E8.4 What is the gain or loss in dollars that arose in 20x1 arising from the movement in net exposed items?

(a) Remeasurement loss of $3,700
(b) Remeasurement gain of $3,700
(c) Translation loss taken to equity of $11,000
(d) Translation gain taken to equity of $11,000

E8.5 Translation of a foreign associate

On 31 December 20x1, Quixote Company, whose functional and presentation currency is the dollar, acquired 30% of the share capital of Sanchoz Company, whose functional currency is the FC, for $396,000. Quixote Company is able to exert significant influence over the business policy decisions of Sanchoz Company. The book value and fair

value of Sanchoz's net assets at the date of acquisition were FC 1,380,000 and FC 1,430,000, respectively. The difference between fair value and book value of net assets was attributable to a piece of freehold land. Sanchoz reported net earnings before tax of FC 187,500 for the year ended 31 December 20x2. Tax rate is 20%. The following are the relevant exchange rates:

	FC 1 =
31/12/20x1	$0.88
31/12/20x2	$0.84
Average rate for 20x2	$0.85

Required:

1. Show the foreign currency translation reserves (FCTR) attributable to the investment in Sanchoz Company in the consolidated statement of financial position of Quixote Company at 31 December 20x2.
2. Show the balance in the Investment in Sanchoz Account in the consolidated statement of financial position of Quixote Company at 31 December 20x2.

PROBLEMS

P8.1 Foreign exchange exposure

PT Corporation, a Singapore Company, has subsidiaries in China and Australia. Both subsidiaries have intercompany transactions with other group members and with other companies. The functional currency of PT Corporation is the Singapore dollar (S$). The functional currencies of the subsidiaries are the local currencies. The following table shows the amount of receivables and payables (denominated in the original currency of transaction) of each company in the group at 31 December 20x7. Figures are in thousands of units of currency.

	PT Corporation	Subsidiary 1 (Functional currency is the renminbi)	Subsidiary 2 (Functional currency is the Australian dollar)
Accounts receivable:			
Subsidiary 1	RMB 18,000 (S$0.20/RMB 1)		A$500
Subsidiary 2	A$250 (S$1.20/A$1)	RMB 25,000	
Company A	S$200	US$300 (RMB 8/US$1)	US$80 (A$1.3/US$1)
Company B	€150 (S$2/€1)	€200 (RMB 10/€1)	A$180
Company C	US$280 (S$1.60/US$1)	–	
Company D			A$100
PT Corporation		RMB 8,000	A$200
Accounts payable:			
Subsidiary 1	RMB 8,000(RMB 4.9/S$1)		RMB 25,000 (RMB 6/A$1)
Subsidiary 2	A$200 (S$1.20/A$1)	A$500 (RMB 6.05/A$1)	
Company A		US$150 (RMB 7.8/US$1)	
Company B			€110 (A$1.67/€1)
Company C		US$130 (RMB 7.9/US$1)	
Company D			A$230
PT Corporation		RMB 18,000	A$250

Exchange rate in brackets is the exchange rate on the date of transaction.

Exchange rates at year-end:	
S$/US$	1.55 (S$1.55 = US$1)
S$/A$	1.18 (S$1.18 = A$1)
S$/€	1.98 (S$1.98 = €1)
A$/€	1.68 (A$1.68 = €1)
A$/US$	1.31 (A$1.31 = US$1)
RMB/€	9.80 (RMB 9.80 = €1)
RMB/S$	4.95 (RMB 4.95 = S$1)
RMB/US$	7.67 (RMB 7.67 = US$1)
RMB/A$	5.85 (RMB 5.85 = A$1)

Required:

1. Calculate the transaction gains or losses for each company in the group for the year ended 31 December 20x7.
2. Quantify the foreign exchange transaction exposure for each company in the group and for the group as a whole at 31 December 20x7.

P8.2 Translation and remeasurement

On 31 December 20x4, Continental Ltd, whose functional currency is the dollar ($), incorporated a wholly owned foreign subsidiary, Four Seas Corporation, which purchased the assets of another company that was under liquidation. The expenditure was financed by share capital and a loan of FC 6,500,000 from a local bank. The statement of financial position of Four Seas Corporation as at 31 December 20x4, stated in local currency (the FC), is shown below.

FOUR SEAS CORPORATION
Statement of Financial Position
As at 31 December 20x4

	FC '000
Fixed assets (at cost)	10,500
Stocks (at cost)	3,000
Cash	2,000
	15,500
Share capital	9,000
Long-term loan	6,500
	15,500

The financial statements of Four Seas Corporation for the year ended 31 December 20x5 are as follows:

FOUR SEAS CORPORATION
Income Statement
For the Year Ended 31 December 20x5

	FC '000
Sales	87,500
Cost of sales	(68,000)
Gross profit	19,500
Operating expenses:	
Depreciation	(2,100)
Other operating expenses	(12,000)
	(14,100)
Net profit before tax	5,400
Taxation	(1,600)
Profit after tax	3,800

FOUR SEAS CORPORATION
Statement of Financial Position
As at 31 December 20x5

	FC '000
Fixed assets (net)	8,400
Stocks (at cost)	5,000
Accounts receivables	18,000
Cash	120
	23,120
Accounts payables	(13,720)
Long-term loan	(5,000)
	(18,720)
Total assets less liabilities	12,800
Share capital	9,000
Retained profit	3,800
	12,800

Four Seas Corporation's main business is the sub-assembly of components using materials provided by Continental Ltd. The sub-assembled components are then returned to Continental Ltd for the manufacture of final products. All other resources such as labor, indirect materials, and services are sourced locally. Four Seas Corporation adopts FIFO inventory accounting. Relevant exchange rates are given below:

	FC 1 =
31 December 20x4	$0.33
31 December 20x5	$0.25
Average rate for 20x5	$0.28
Average rate at which closing stocks were purchased	$0.26

Required:

1. Translate the financial statements of Four Seas Corporation for the year ended 31 December 20x5 in each of the following scenarios:
   (a) The functional currency of Four Seas Corporation is the local currency
   (b) The functional currency of Four Seas Corporation is the dollar
2. Explain the difference in the translation results (translation gain or loss) in Scenario 1 and Scenario 2. (Computation of translation differences is required as part of the answer to this question.)
3. Compare each of the following ratios for Four Seas Corporation in the two scenarios:
   (a) Gross profit margin ratio
   (b) Operating profit margin ratio (defined as the ratio of profit from operations before tax, non-operating items and exchange differences to sales)
   (c) Net profit margin
   (d) Return on asset
   (e) Return on equity

page 764

Briefly explain how the movements in exchange rates affected the above ratios in the two scenarios.

P8.3 Translation of foreign currency financial statements

On 31 December 20x1, Major Corporation, whose functional and presentation currency is the dollar, acquired Minor Company, which operated in country X whose currency is the FC, by purchasing the entire share capital at book value. Minor's financial statements for the years ended 31 December 20x2 and 20x3 are shown below.

MINOR COMPANY
Income Statements
For the Years Ended 31 December 20x2 and 20x3

	20x2 FC	20x3 FC
Sales	450,000	500,000
Cost of goods sold	(220,000)	(230,000)
Gross profit	230,000	270,000
Less:		
Depreciation expense	(22,500)	(30,000)
Amortization expense	(6,000)	(12,000)
Operating expenses	(138,000)	(152,300)
Insurance expense	(800)	(3,200)
	(167,300)	(197,500)
Operating profit before tax	62,700	72,500
Taxation	(12,700)	(14,000)
Profit after tax	50,000	58,500
Dividends paid	(25,000)	(25,000)
Retained earnings, 1 January	25,000	50,000
Retained earnings, 31 December	50,000	83,500

MINOR COMPANY
Statements of Financial Position
As at 31 December 20x2 and 20x3

	20x2 FC	20x3 FC
Fixed assets (net)	207,500	277,500
Patent	54,000	42,000
Current assets:		
Inventories	95,000	88,000
Prepaid insurance	5,600	2,400
Accounts receivable	83,900	82,700
Cash	25,000	13,000
	209,500	186,100
Current liabilities:		
Accounts payable	(20,000)	(24,000)
Tax payable	(30,000)	(27,000)
Note payable	(20,000)	(20,000)
Other payables	(1,000)	(1,100)
	(71,000)	(72,100)
Net current assets	138,500	114,000
Total assets less current liabilities	400,000	433,500

page 765

Long-term loan	120,000	120,000
Share capital	230,000	230,000
Retained earnings	50,000	83,500
	400,000	433,500

Additional information:

(a) At the date of acquisition, Minor Company's equity comprised share capital of FC 230,000 and retained earnings of FC 25,000.

(b) Minor used FIFO inventory valuation. Purchases were made uniformly throughout the year. Opening inventories for 20x2 amounted to FC 87,000. Ending inventories for 20x2 and 20x3 were composed of units purchased when the exchange rates were FC 1 = $0.39 and FC 1 = $0.35, respectively.

(c) The insurance premium for a two-year policy was paid on 1 October 20x2.

(d) Fixed assets comprised plant and equipment that were acquired as follows:

Date purchased	Cost (FC)
1 January 20x1	200,000
10 July 20x2	50,000
1 July 20x3	100,000

(e) Plant and equipment were depreciated over ten years on a straight line basis with no residual value. A full month's depreciation was taken in the month of acquisition.

(f) The patent was acquired on 10 July 20x2 at a cost of FC 60,000. The estimated life of the patent was five years from the date of purchase.

(g) Minor Company was incorporated on 1 January 20x1.

(h) Payments of dividends for 20x2 and 20x3 are as follows:

page 766

Date	Amount paid
31 March 20x2	FC 10,000
31 October 20x2	FC 15,000
31 March 20x3	FC 10,000
31 October 20x3	FC 15,000

Exchange rates are as follows:

	FC 1 =
1 January 20x1	$0.45
31 December 20x1	$0.43
31 March 20x2	$0.42
10 July 20x2	$0.40
1 October 20x2	$0.41
31 October 20x2	$0.405
31 December 20x2	$0.38
20x2 average rate	$0.415
31 March 20x3	$0.385
1 July 20x3	$0.37
31 October 20x3	$0.35
31 December 20x3	$0.34
20x3 average rate	$0.36

Required:

Assume that the functional currency of Minor Company is the local currency, the FC. Translate the financial statements of Minor Company for the purpose of consolidation into Major's presentation currency for the years ended 31 December 20x2 and 20x3. Prepare a schedule to show the proof of translation gain or loss.

P8.4 Translation of foreign currency financial statements

Refer to the information provided in P8.3. Assume that the functional currency of Minor Company is the dollar. Translate the financial statements of Minor Company for the purpose of consolidation into Major's presentation currency for the years ended 31 December 20x2 and 20x3. Prepare a schedule to show the proof of translation gain or loss.

P8.5 Change in functional currency

Refer to the information in P8.3. In 20x2, Minor Company decided that its functional currency was the local currency, the FC. In 20x3, due to changes in the economic environment, which resulted in a change in the nature of the operating relationship between Major Corporation and Minor Company, it was decided that the functional currency of Minor Company be changed to the dollar with effect from 1 January 20x3. (Assume that the exchange rates on 1 January 20x3 were the same as that on 31 December 20x2.)

page 767

Required:

Translate the financial statements of Minor Company for the purpose of consolidation into Major's presentation currency for the years ended 31 December 20x2 and 20x3. Prepare a schedule to show the proof of translation gain or loss.

P8.6 Change in functional currency

Refer to the information in P8.4. In 20x2, Minor Company decided that its functional currency was the dollar. In 20x3, due to changes in the economic environment, which resulted in a change in the nature of the operating relationship between Major Corporation and Minor Company, it was decided that the functional currency of Minor Company be changed to the local currency with effect from 1 January 20x3. (Assume that the exchange rates on 1 January 20x3 were the same as those on 31 December 20x2.)

Required:

Translate the financial statements of Minor Company for the purpose of consolidation into Major's presentation currency for the years ended 31 December 20x2 and 20x3. Prepare a schedule to show the proof of translation gain or loss.

P8.7 Translation of financial statements of a foreign subsidiary and a foreign associate

Asian Macro Ltd, a Singapore company, has an 80% interest in AMCO Inc in the United States, and a 40% interest in OZCO Corporation in Australia. The financial statements of AMCO and OZCO for the years ended 31 December 20x3 and 20x4 are as follows:

Comparative Income Statements
For the Years Ended 31 December 20x3 and 20x4

	AMCO		OZCO	
	20x4 US$ '000	20x3 US$ '000	20x4 A$ '000	20x3 A$ '000
Sales	48,000	42,000	25,000	38,000
Cost of goods sold	(36,000)	(29,000)	(18,000)	(30,000)
Gross profit	12,000	13,000	7,000	8,000
Operating expenses	(7,000)	(6,000)	(4,000)	(5,000)
Profit before tax	5,000	7,000	3,000	3,000
Taxation	(2,000)	(3,000)	(1,000)	(1,000)
Profit after tax	3,000	4,000	2,000	2,000

Comparative Statements of Financial Position
As at 31 December 20x3 and 20x4

	AMCO		OZCO	
	20x4 US$ '000	20x3 US$ '000	20x4 A$ '000	20x3 A$ '000
Fixed assets (net)	200,000	185,000	40,000	35,000
Current assets	200,000	250,000	18,000	15,000
Current liabilities	(150,000)	(170,000)	(10,000)	(8,000)
Long-term liabilities	(125,000)	(130,000)	(23,000)	(20,000)
Net assets	125,000	135,000	25,000	22,000
Share capital	100,000	100,000	10,000	10,000
Retained earnings	25,000	35,000	13,000	12,000
Revaluation surplus			2,000	
Shareholders' equity	125,000	135,000	25,000	22,000

Additional information:

(a) AMCO Inc was incorporated by Asian Macro on 31 December 20x1. There had been no change in the share capital of the company since then.

(b) Asian Macro acquired the 40% interest in OZCO on 31 December 20x2 when the share capital and retained earnings of OZCO were A$10,000,000 and A$10,000,000, respectively. The investment cost was A$8,000,000. The fair values of assets and liabilities were similar to their book values.

(c) On 1 December 20x4, OZCO revalued its properties, which resulted in a revaluation surplus of A$2,000,000.

(d) OZCO paid a dividend of A$1,000,000 on 31 December 20x4. AMCO paid a dividend of US$13,000,000 on the same date.

(e) Relevant exchange rates are as follows:

	US$1 = S$	A$1 = S$
31 December 20x1	1.80	1.10
31 December 20x2	1.78	1.13
31 December 20x3	1.73	1.16
1 December 20x4	1.70	1.20
31 December 20x4	1.68	1.21
Average rate for 20x2	1.79	—
Average rate for 2003	1.75	1.15
Average rate for 20x4	1.72	1.18

(f) The functional currencies of AMCO and OZCO are the US dollar (US$) and the Australian dollar (A$), respectively. The presentation currency of Asian Macro Ltd is the Singapore dollar (S$).

Required:

1. Translate the financial statements of AMCO Inc for 20x3 and 20x4.
2. Show the amount reported under Foreign Currency Translation Reserves in Asian Macro's consolidated Statement of Financial Position as at 31 December 20x4.
3. Show the amount under the account "Investment in OZCO Corporation" in Asian Macro's consolidated Statement of Financial Position as at 31 December 20x4.

P8.8 Translation and consolidation of a foreign operation

Blue Sky Corporation incorporated a wholly owned subsidiary, Evergreen Enterprise, in country X with an initial paid-up capital of FC 1,500,000 on 1 November 20x1. This was subsequently increased by FC 1,000,000 on 15 December 20x1. Evergreen's products were marketed principally in country X with the sales invoiced in FC, and the prices determined by local competitive conditions. Expenses (labor, materials and other production costs) were mostly local, although significant quantities of components are imported from Blue Sky. Evergreen Enterprise was Blue Sky's only subsidiary.

The financial statements of Blue Sky Corporation for the year ended 31 October 20x3 are as follows: The functional and presentation currency of Blue Sky Corporation is the dollar ($).

BLUE SKY CORPORATION
Income Statement
For the Year Ended 31 October 20x3

Sales	$8,750,000
Cost of goods sold	(6,800,000)
Gross profit	1,950,000
Operating expenses	(1,410,000)
Dividend income	38,500
Profit before tax	578,500
Taxation	(143,500)
Profit after tax	435,000
Retained profit, 1 November	2,052,000
Retained profit, 31 October	$2,487,000

BLUE SKY CORPORATION
Statement of Financial Position
As at 31 October 20x3

Fixed assets (net)	$ 8,400,000
Investment in Evergreen Enterprise	1,810,000
Loan receivable from Evergreen Enterprise	1,560,000
Current assets:	
Inventories	500,000
Accounts receivable	1,800,000
Cash	50,000
Total assets	14,120,000
Current liabilities:	
Accounts payable	(1,495,000)
Tax payable	(138,000)
Net assets	$12,487,000
Share capital	10,000,000
Retained earnings	2,487,000
	$12,487,000

Evergreen's summary financial statements for the year ended 31 October 20x3 are as follows:

EVERGREEN ENTERPRISE
Income Statement
For the Year Ended 31 October 20x3

	FC
Sales	7,800,000
Cost of goods sold	(4,835,000)
Gross profit	2,965,000
Operating expenses	(2,300,000)
Depreciation	(375,000)
Amortization of patent	(50,000)
Exchange (loss)/gain on loan	50,000
	(2,675,000)

Profit/(loss) for the year	290,000
Taxation	(87,000)
Profit after tax	203,000
Retained profit, 1 November	311,000
Dividend paid	(50,000)
Retained profit, 31 October	464,000

EVERGREEN ENTERPRISE
Statement of Financial Position
As at 31 October 20x3

	FC
Fixed assets	3,920,000
Patent	200,000
	4,120,000
Current assets:	
Inventories	600,000
Deposits	100,000
Receivables	979,000
Cash	80,000
	1,759,000
Current liabilities:	
Trade creditors	(878,000)
Tax payable	(87,000)
	(965,000)
Net current assets	794,000
	4,914,000
Share capital	2,500,000
Retained earnings	464,000
	2,964,000
Loan from Blue Sky Corporation	1,950,000
	4,914,000

Additional information:

(a) Fixed assets and accumulated depreciation as at 31 October 20x3 are as follows:

Cost FC	Depreciation rate	Accumulated depreciation	Exchange rate at acquisition date
300,000	10%	90,000	FC 1 = $0.70
600,000	20%	240,000	FC 1 = $0.72
1,800,000	12.5%	450,000	FC 1 = $0.75
2,000,000	25%	0	FC 1 = $0.78
4,700,000		780,000	

Depreciation on the fixed asset costing FC 2,000,000 (purchased in October 20x3) will be provided in the next financial year.

(b) Sales, purchases, and operating expenses occurred evenly throughout the period. The exchange rates when opening and closing inventories were acquired are as follows:

	FC	Exchange rate: FC 1 =
Opening inventories	500,000	$0.72
Closing inventories	600,000	$0.79

(c) The patent was purchased in October 20x2 at a cost of FC 250,000 when the exchange rate was FC 1 = $0.76. The patent was amortized over a period of five years on a straight line basis from 1 November 20x2.

(d) Exchange gain on the loan arose from a loan (denominated in dollars) that Blue Sky Corporation extended to Evergreen Enterprise in August 20x3 (exchange rate FC 1 = $0.78). The loan amount was $1,560,000. The loan carries an interest of 5%, which approximated the market interest rate and has a fixed schedule of repayment. Interest on the loan is payable at 31 December and the interest expense has been included under operating expenses.

(e) Other relevant exchange rates:

	FC 1 =
1 November 20x1	$0.70
15 December 20x1	$0.76
31 October 20x2	$0.73

31 October 20x3	$0.80
Exchange rate when dividend was paid	$0.77
Average rate for the period 1 November 20x2 to 31 October 20x3	$0.75

Required:

1. Translate the financial statements of Evergreen Enterprise for the year ended 31 October 20x3 for the purpose of consolidation with the accounts of Blue Sky Corporation. Assume that the FC is the functional currency of Evergreen Enterprise. Show workings for the translation difference. Assume that the the translation reserves at 31 October 20x2 were nil.
2. Prepare consolidation journal entries to consolidate the accounts of Evergreen Enterprise.
3. Show the consolidated financial statements of Blue Sky Corporation and its subsidiary for the year ended 31 October 20x3.

P8.9 Translation and consolidation

Using the information in P8.8, assume that Evergreen's functional currency is the dollar. Prepare the financial statements of Evergreen for the year ended 31 October 20x3 in dollars. Show the consolidated financial statements of Blue Sky Corporation and its subsidiary for the year ended 31 October 20x3.

P8.10 Foreign currency transactions

One of Company Y's business units transacts in the FC. However, the functional currency of Company Y is the dollar. The following transactions are denominated in the FC and should be translated to the dollar in accordance with IAS 21 paragraphs 20–34. Exchange rates ($ to FC 1) at the date of the transaction are shown next to the item.

	FC
Transactions that were evenly spread throughout 20x5	
Sales	2,000,000
Purchases	1,500,000
Operating expenses	260,000
Interest expense	50,000
Tax expense	20,000

Details of the FVOCI equity security and the trading security are shown below.

	FC	Rate
31 May 20x4: Purchase of FVOCI equity security		
Purchase price of FVOCI security (FC)	900,000	1.72
Fair value of FVOCI security at 31 December 20x4 (FC)	880,000	
Fair value of FVOCI security at 31 December 20x5 (FC)	1,000,000	
Balance in fair value adjustment (equity) as at 31 December 20x4	(20,000)	

Changes in fair value of the FVOCI are to be taken directly to equity as required under IFRS 9. Exchange gains or losses on the FVOCI are to be accounted in accordance with IAS 21 paragraph 30.

	FC	Rate
30 June 20x5: Purchase of trading securities		
Purchase price of trading security (FC)	350,000	1.74
Fair value of trading security as at 31 December 20x5 (FC)	400,000	

Changes in fair value of the trading security are to be taken direct to income as required under IFRS 9. Exchange gains or losses on trading security are to be accounted in accordance with IAS 21 paragraph 30.

	FC	Rate
Transactions relating to fixed assets		
1 July 20x4: Purchase of plant and equipment (useful life: 5 years)	1,000,000	1.71
1 July 20x5: Purchase of motor vehicles (useful life: 10 years)	100,000	1.75
30 September 20x5: Sale proceeds of plant and equipment purchased on 1 July 20x4 (original cost: FC 200,000)	180,000	1.78
Fixed assets are carried at historical cost, less accumulated depreciation.		
Transactions relating to inventory		
Opening inventory	100,000	1.68
Closing inventory	200,000	1.78
Transactions relating to prepayments		
1 October 20x4: Payment for fire insurance for period 1 October 20x4 to		

30 September 20x5	50,000	1.73
1 October 20x5: Payment for fire insurance for period 1 October 20x5 to 30 September 20x6	60,000	1.78

Exchange rates:

1 January 20x5	1.70
Average rate for 20x5	1.75
31 December 20x5	1.79

FC-denominated monetary liabilities and assets as at 1 January 20x5 and 31 December 20x5 are as follows:

	FC
Net monetary liabilities as at 1 January 20x5	(700,000)
FC bank overdraft	(740,000)
FC accounts receivable	340,000
FC accounts payable	(300,000)
Net monetary liabilities as at 31 December 20x5	(860,000)
FC bank overdraft	(740,000)
FC accounts receivable	230,000
FC accounts payable	(350,000)

Required:

1. What are the reported amounts of the following in dollars as at 31 December 20x5?
   (a) Fixed assets, net book value
   (b) Depreciation expense
   (c) Profit/(loss) on sale of fixed assets
   (d) Cost of sales
   (e) FVOCI security
   (f) Fair value adjustment (equity) relating to FVOCI
   (g) Trading securities
   (h) Fair value change in profit and loss relating to trading securities
   (i) Prepaid insurance
   (j) Insurance expense for the year
2. Compute the exchange gain or loss from the movements in exposed FC monetary assets/(liabilities) for the year ended 31 December 20x5.

P8.11 Translation

Refer to P6.7. Assume that the presentation currency of Y Co is the FC while the functional currency is the dollar ($). P Co's investment in Y Co is FC 1,980,000. The exchange rates are as follows:

At date of acquisition	FC 1.1 to $1
On 1 January 20x5	FC 1.2 to $1
Average for 20x5	FC 1.25 to $1
Date of dividend declared	FC 1.28 to $1
On 31 December 20x5	FC 1.3 to $1

Foreign currency translation reserve (FCTR) on 1 January 20x5 arising from the translation of net assets of Y Co (excluding the FCTR relating to goodwill and fair value adjustments) is FC 150,000 (credit balance).

Required:

1. Translate the financial statements of subsidiary Y Co for the year ended 31 December 20x5 into the presentation currency. Perform a reconciliation check on the movement in FCTR.
2. Prepare the consolidation adjusting entries for the year ended 31 December 20x5 in FC to:
   (a) Eliminate the investment in Y Co and allocate the cost of business combination;
   (b) Recognize the FCTR on goodwill and intangible asset.
   (c) Allocate FCTR to non-controlling interests.

P8.12 Translation and remeasurement

StarTech Ltd, whose functional currency is the Singapore dollar, has two subsidiaries: Maysub, which is located in Malaysia, and Ozsub, which is located in Australia. The financial statements of the two subsidiaries for the year ended 31 December 20x3 are as follows:

Comparative Income Statements
For the Year Ended 31 December 20x3

	Maysub RM '000	Ozsub A$ '000
Sales	60,000	35,000
Cost of goods sold	(38,000)	(24,750)
Gross profit	22,000	10,250
Depreciation expense	(3,100)	(2,000)
Amortization expense	—	(500)
Operating expenses	(9,900)	(3,420)
Exchange gain (loss) on loan	(1,000)	—
Net profit for the year	8,000	4,330

Comparative Statements of Financial Position
As at 31 December 20x3

	Maysub RM '000	Ozsub A$ '000
Fixed assets (net)	30,900	16,200
Patent, at amortized cost		2,000
Current assets:		
Prepayments	—	50
Inventories	10,000	2,150
Accounts receivable	17,000	2,800
Cash	6,100	180
	33,100	5,180
Current liabilities:		
Accounts payable	(14,000)	(2,300)
Unearned revenue	—	(800)
	(14,000)	(3,100)
Long-term loan	(22,000)	(2,000)
Net assets	28,000	18,280
Share capital	20,000	10,000
Retained earnings	8,000	8,280
	28,000	18,280

Additional information:

(a) The Malaysian subsidiary was incorporated on 31 December 20x2 with a paid-up share capital of RM 20 million. On the same date, Maysub obtained a loan of S$10 million from a Singapore bank.

(b) Fixed assets of the Malaysian subsidiary comprised the following:

Date acquired	Cost	Accumulated depreciation in RM	Exchange rate at date of acquisition
1 March 20x3	12,000,000	2,000,000	S$1 = RM 2.13
1 July 20x3	22,000,000	1,100,000	S$1 = RM 2.16

(c) The closing inventories of MaySub were acquired at an average rate of S$1 = RM 2.18.

(d) The Australian subsidiary was acquired on 31 December 20x1. At the date of acquisition, the subsidiary had a paid-up capital of A$10,000,000 and retained earnings of A$1,500,000. The exchange rate at the date of acquisition was A$1 = S$1.

(e) Fixed assets of the Australian subsidiary comprise of the following:

Date acquired	Cost in A$	Accumulated depreciation as at 31 December 20x3	Net book value	Exchange rate at date of acquisition
1 July 20x0	8,000,000	2,800,000	5,200,000	A$1 = S$0.90
31 March 20x2	12,000,000	2,100,000	9,900,000	A$1 = S$1.02
25 December 20x3	1,100,000	–	1,100,000	A$1 = S$1.19

(f) Opening inventories (A$2,000,000) at 1 January 20x3 were acquired at an average exchange rate of A$1 = S$1.08. Closing inventories were acquired at an average rate of A$1 = S$1.17.

(g) The patent was acquired on 31 December 20x2. Amortization of the patent is on a straight line basis over five years.

(h) Prepayment is made up of prepaid insurance that was paid on 31 December 20x3 for the following year.

(i) The unearned revenue represents payments made in advance by certain customers at 31 December 20x3. The unearned revenue is refundable in the event that certain conditions are not met.

(j) Exchange rates:

	S$ to A$1	RM to S$1
On 31 December 20x2	S$1.10	RM 2.10
On 31 December 20x3	S$1.18	RM 2.20
Average rate for 20x2	S$1.05	
Average rate for 20x3	S$1.15	RM 2.15

Required:

1. Quantify the translation exposure of the two subsidiaries as at 31 December 20x3.
2. Assume that the functional currency of the Malaysian subsidiary is the Singapore dollar and the functional currency of the Australian subsidiary is the Australian dollar. Translate or remeasure, whichever is applicable, the financial statements of the two subsidiaries for the year ended 31 December 20x3.

P8.13 Translation and remeasurement

Refer to the information provided in P8.12. Assume that the functional currency of the Malaysian subsidiary is the Malaysian ringgit and the functional currency of the Australian subsidiary is the Singapore dollar. Translate or remeasure, whichever is applicable, the financial statements of the two subsidiaries for the year ended 31 December 20x3.

P8.14 Translation and consolidation of a foreign operation

On 31 December 20x4, Magnum Corporation, whose functional and presentation currency is the dollar ($), acquired 75% of the ordinary share capital of Rockford Company, which was situated in a foreign country whose currency was the LC. At the date of acquisition, Rockford Company's share capital was LC120,000,000 and the retained earnings were LC 150,000,000. Rockford had not issued any share capital since its acquisition by Magnum. The following financial statements relate to Magnum and Rockford for the year ended 31 December 20x5.

MAGNUM CORPORATION
Income Statement
For the Year Ended 31 December 20x5

	$ '000
Sales	500,000
Cost of goods sold	(300,000)
Gross profit	200,000
General and administrative expenses	(75,000)
Depreciation expense	(50,000)
Profit before tax	75,000
Taxation	(15,000)
Profit after tax	60,000
Retained earnings, 1 January	463,000
Retained earnings, 31 December	523,000

MAGNUM CORPORATION
Statement of Financial Position
As at 31 December 20x5

	$ '000
Non-current assets	750,000
Investment in Rockford Company	285,000
Loan to Rockford Company	30,000
Current assets:	
Inventory	150,000
Accounts receivable	80,000
Cash	18,000
Total assets	1,313,000
Current liabilities	210,000
Non-current liabilities	80,000
Share capital	500,000
Retained earnings	523,000

Total liabilities and shareholders' equity	1,313,000

page 778

ROCKFORD COMPANY
Income Statement
For the Year Ended 31 December 20x5

	LC '000
Sales	350,000
Cost of goods sold	(240,000)
Gross profit	110,000
General and administrative expenses	(30,000)
Depreciation expense	(15,000)
Exchange loss	(3,000)
Profit before tax	62,000
Taxation	(12,000)
Profit after tax	50,000

ROCKFORD COMPANY
Statement of Financial Position
As at 31 December 20x5

	LC '000
Non-current assets	380,000
Current assets:	
Inventory	30,000
Accounts receivable	60,000
Cash	33,000
Total assets	503,000
Current liabilities	150,000
Non-current liabilities	33,000
Share capital	120,000
Retained earnings	200,000
Total liabilities and shareholders' equity	503,000

Additional information:

(a) The book values of Rockford's assets and liabilities approximated their fair values except for plant and equipment whose fair value was greater than the book value by LC 50,000,000 on 31 December 20x4. Rockford had not revalued its assets since its acquisition by Magnum. The plant and equipment had a remaining economic life of five years from 31 December 20x4 and no salvage value.

(b) Magnum had made a loan of $30,000,000 at an interest rate of 6% per annum to Rockford on 31 December 20x4. The loan was repayable on demand. Rockford had included the loan in its non-current liabilities. The interest expense (paid on 31 December 20x5) has been included under general and administrative expenses.

(c) Although two directors of Magnum sit on the board of Rockford, the management of Rockford had significant autonomy in managing the affairs of the company.

page 779

(d) The following exchange rates are relevant to the financial statements:

Date	LC to $1
31 December 20x4	1
31 December 20x5	1.10
Average rate for 20x5	1.05

(e) There was no impairment of goodwill at 31 December 20x5.

(f) Recognize tax effects at 20%.

Magnum Corporation's functional and presentation currency is the dollar. Rockford's functional currency is the LC.

Required:

Prepare the consolidated financial statements of Magnum Group for the year ended 31 December 20x5.

P8.15 Sale of foreign operation

Alpar Corporation formed a wholly owned subsidiary, Besub Enterprise, in country X (whose currency is the FC) on 31 December 20x0 with an initial paid-up capital of FC 10,000,000. Besub reported earnings of FC 2,000,000 and FC 3,000,000 for the years ended 31 December 20x1 and 20x2, respectively. Besub Enterprise had not declared any dividends since its incorporation and had no other reserves. On 31 December 20x2, Alpar Corporation disposed of its entire investment in Besub Enterprise for FC 18,000,000. Besub's functional currency is the FC. Alpar Corporation's functional and presentation currency is the dollar. Relevant exchange rates are as follows:

	FC 1 =
31 December 20x0	$1.20
Average rate for 20x1	$1.25
31 December 20x1	$1.30
Average rate for 20x2	$1.28
31 December 20x2	$1.23

Required:

1. Show the amount of profit or loss on the sale of Besub in the income statement of Alpar Corporation for the year ended 31 December 20x2.
2. Show the amount of profit or loss on the sale of Besub in the consolidated income statement of Alpar Corporation for the year ended 31 December 20x2.

P8.16 Translations of goodwill and fair value differentials

Co Y is an 80%-owned subsidiary of USCo. The functional currency of Co Y is the Singapore dollar. The functional currency of USCo is the US dollar. The financial statements kept in Singapore dollars are shown below.

Co Y
Income Statement
For the Year Ended 31 December 2012

		SGD	Rate	USD
Sales		2,000,000		
Cost of Sales				
Opening inventory	320,000			
Purchases	1,500,000			
Less closing inventory	(480,000)			
Less Cost of Sales		(1,340,000)		
Gross profit		660,000		
Operating expenses		(100,000)		
Interest expense		(16,000)		
Depreciation		(80,000)		
Profit before tax		464,000		
Tax expense		(120,000)		
Profit after tax		344,000		
Dividends declared		(40,000)		
Profit retained		304,000		
Retained earnings, 1 Jan 2012		400,000		
Retained earnings, 31 Dec 2012		704,000		

Co Y
Statement of Financial Position
As at 31 December 2012

			SGD	Rate	USD
Fixed assets, net book value			640,000		
Inventory			480,000		
Accounts receivable			200,000		
Cash			20,000		
			1,340,000		
Accounts payable			436,000		
Share capital			200,000		
Retained earnings					
Pre-acquisition	240,000				
Post-acquisition		464,000			
Foreign Currency Translation Reserve (FCTR)			704,000		
			1,340,000		

Exchange rates are as follows:	SGD1 to USD
On date of acquisition of Co Y, 1 Jan 2010	0.476
Re-sale of undervalued inventory, 1 July 2010	0.513
Purchase of fixed assets by Co Y, 1 Jan 2011	0.526
Purchase of opening inventory during Dec 2011	0.555
Purchase of closing inventory during Dec 2012	0.610
1 Jan 2012	0.562
Average rate for 2012	0.595
31 Dec 2012	0.625
Date of dividend declaration	0.606

- Assume that sales, purchases, operating expenses, interest and tax occur evenly throughout the year.
- Foreign Currency Translation Reserve (cumulative translation losses to 31 Dec 2011) is a loss of $20,000.
- Fair value of consideration transferred was SGD600,000 and fair value of non-controlling interests as at acquisition date was SGD60,000.
- Under valued inventory at acquisition date was SGD40,000. Tax rate was 20%.
- Under valued inventory was sold on 1 July 20x3 (assuming FIFO).

page 781

Required:

1. Translate the financial statements to its presentation currency.
2. Calculate the translation gains/losses for goodwill and undervalued inventory.
3. Prepare the consolidation journal entries.

P8.17 Change of functional currency

In the first year of incorporation (2013), Co A's functional currency was the US dollars. Co A's economic environment changed in 2014 and its new functional currency from 15 September 2014 is the Singapore dollar.

Co A
Comparative Income Statement
For the Years 2013 and 2014

(US$)	15 September 2014	31 December 2013
Sales	245,000	420,000
Expenses	(189,000)	(296,000)
Net profit before tax	56,000	124,000

Co A
Statement of Financial Position
As at 2013 and 2014

(US$)	15 September 2014	31 December 2013
Fixed assets	490,000	432,000
Inventory	165,000	129,780
Accounts receivable	120,000	148,900
Bank balances	32,000	45,600
	807,000	756,280
Accounts payable	187,000	232,280
Share capital	300,000	300,000
Retained earnings	180,000	124,000
Other comprehensive income	140,000	100,000
	807,000	756,280

page 782

Exchange rates:

Average rate for 2013	1.25
1 January 2014 to 15 September 2014	1.35

Sales and expenses occur evenly throughout the period.

Revaluation surplus arose on 31 Dec 2013 and 30 June 2014.

1 January 2013	1.2
31 December 2013: Year end	1.3
30 June 2014: New revaluation surplus	1.4
15 September 2014: Change of functional currency	1.42

Required:

1. Present the financial statements for the period from 1 January to 15 September 2014 in the new functional currency.
2. Restate the previous year's (2013) comparatives in Singapore dollars.
3. Show the movement in the statement of changes in equity during 2013 and 2014.

P8.18 Exchange rate effects on loss of control of foreign subsidiary

An US parent company with functional and presentation currency of US$ has a wholly owned Singapore subsidiary, which it incorporated in 20x2. The share capital of the Singapore subsidiary at the date of incorporation is S$200,000 and the exchange rate on that date is 1.55. On 31 December 20x6, the US parent sells 70% interest to a third party at cash consideration of US$8 million. Control over the Singapore subsidiary was lost upon the disposal. The financial position of the Singapore subsidiary at the date of disposal and the relevant exchange rates are set out as follows.

Balance Sheet at 31 December 20x6	S$'000	Breakdown of retained earnings		S$'000
Other assets	30,800	20x2	Balance at beginning	–
Other liabilities	(4,800)	20x3	Profit for the year	2,400
	26,000			
Represented by:		20x4	Profit for the year	6,200
Share capital	200	20x5	Profit for the year	7,500
Retained earnings	25,800	20x6	Profit for the year	9,900
	26,000			26,000

Exchange rates

	Closing rates	Average rates
20x3	1.71	1.74
20x4	1.65	1.69
20x5	1.64	1.66
20x6	1.68	1.67

The fair value of the retained interests of 30% as at the date of disposal is $10,500.

Calculate the gain or loss on disposal and prepare the accounting entries for the transaction. Ignore the effects of taxes.

P8.19 Exchange rate effects on partial disposal of foreign subsidiary

Using the same fact pattern as in P8.18. Instead of disposing 70% of the Singapore subsidiary, the US parent company sells 10% of its shareholding interests to a third party for US$4,500,000. The US parent company continues to retain control over the Singapore subsidiary post-disposal.

Calculate the gain or loss on disposal and prepare the accounting entries in the separate and consolidated financial statements.

P8.20 Exchange rate effects on disposal of foreign joint ventures

An US parent company with functional and presentation currency of US$ acquired 35% of a Singapore joint venture on 31 December 20x2 at cash consideration of S$800,000. The fair value of the net identifiable assets of the joint venture at the date of acquisition was S$710,000 and the exchange rate at the date of acquisition was 1.55. On 31 December 20x5, 15% of the interests in the Singapore joint venture with balance sheet in S$ as set out below was disposed for cash consideration of US$4,000,000. The relevant exchange rates are also set out as follows.

Balance Sheet at 31 December 20x5	S$'000	Breakdown of retained earnings		S$'000
Other assets	86,600	20x2	Balance at beginning	3,300
Other liabilities	(5,800)	20x3	Profit for the year	18,200
	80,800	20x4	Profit for the year	22,500
Represented by:		20x5	Profit for the year	36,000
Share capital	800			80,000
Retained earnings	80,000			
	80,800			

Exchange rates

	Closing rates	Average rates

20x2	1.75	1.55
20x3	1.71	1.74
20x4	1.65	1.69
20x5	1.64	1.66

Calculate the gain or loss on disposal, and prepare the accounting entries in the separate and consolidated financial statements. Assume that the US parent company has other subsidiaries and it prepares both consolidated and separate financial statements. Ignore tax effects.

P8.21 Translation and consolidation of foreign subsidiary

Co A is a foreign subsidiary of Parent Co. For purposes of consolidation, the foreign currency financial statements of Company A have to be translated from its functional currency (the USD) to the presentation currency (the SGD). Complete the table below by inserting the appropriate rates and completing the SGD column.

Income Statement
for the year ended 31 Dec 20x5

	USD	Rate	SGD
Sales	3,200,000		
Less			
Opening inventory	300,000		
Purchases	2,000,000		
Less closing inventory	(400,000)		
Cost of sales	(1,900,000)		
Gross profit	1,300,000		
Operating expenses	(320,000)		
Depreciation	(100,000)		
Exchange gain on intercompany loan	20,000		
Profit before tax	900,000		
Tax expense	(180,000)		
Profit after tax	720,000		
Dividends declared	(80,000)		
Profit retained	640,000		
Retained earnings, 1 Jan 20x5	400,000		
Retained earnings, 31 Dec 20x5	1,040,000		

Balance sheet as at 31 Dec 20x5

	USD	Rate	SGD
Fixed assets, net book value	1,200,000		
Inventory	400,000		
FVOCI investments	1,200,000		
Accounts receivable	400,000		
Cash	200,000		
	3,400,000		

Balance sheet as at 31 Dec 20x5

	USD	Rate	SGD
Accounts payable	970,000		
Loan due to Parent Company	500,000		
Share capital	800,000		
Retained earnings			
Pre-acquisition RE:	200,000		
Post-acquisition RE:	840,000		
	1,040,000		
Fair value adjustment for FVOCI security			
As at 31 Dec 20x4	40,000		

Change during 20x5	50,000
	90,000
	3,400,000

Exchange rates are as follows:

	SGD to USD1
1 Jan 20x4: Acquisition of Co A	1.6
Purchase of opening inventory during Dec 20x4	1.62
Purchase of closing inventory during Dec 20x5	1.65
1 July 20x4	1.75
Average for 20x4	1.73
1 Jan 20x5	1.8
Average rate for 20x5	1.76
31 Dec 20x5	1.7
Date of dividend declaration	1.73

Exchange gain and its related tax arose on 31 December 20x5

Sales, purchases, expenses, and related tax are spread evenly throughout the year

Tax rate is 20%

Other information:

(1) Loan due to Parent Company has no fixed terms of repayment and is deemed an extension of the parent's net investment in Co A. *Hint*: The exchange gain should be reclassified to FCTR in the group financial statements.

(2) FVOCI securities was purchased on 1 July 20x4
Revaluation is done on each financial year-end.

(3) Foreign Currency Translation Reserve as at 1 Jan 20x5 arising from book value of equity	CR balance	100,000
(4) Consideration transferred in SGD		2,500,000
(5) Excess of fair value over book value of fixed assets (in USD)		125,000
Remaining useful life at acquisition (number of years)		10
(6) Fair value of non-controlling interests at acquisition date (in USD)		387,500

page 786

(7) Co A sold inventory to Parent as follows:

Date of transfer:	1 July 20x4
Transfer price:	US$100,000
Original cost:	US$80,000
50% was unsold as at 31 December 20x4	
20% was unsold as at 31 December 20x5	

(8) Parent Co sold inventory to Co A as follows:

Date of transfer:	1 Jan 20x5
Transfer price:	US$50,000
Original cost:	US$40,000
60% was unsold as at 31 December 20x5	

(9) Percentage ownership by NCI 20%
Percentage ownership by Parent 80%

Required:

(a) Translate the financial statements into the presentation currency.
(b) Reconcile the ending balance of the foreign currency translation reserve with the movements in net exposed items of Co A for the year ended 31 December 20x5.
(c) Prepare the consolidation adjustments for Co A for the year ended 31 December 20x5 in Singapore dollars.
(d) Perform an analytical check of NCI in Singapore dollars as at 31 December 20x5.

P8.22 Translation and equity accounting of foreign associate

Co Y is an associate of Investor Co. Co Y's **functional currency is the USD.** Translate the USD financial statements into Investor Co's **presentation currency, the SGD**.

		USD	Rate	SGD
Sales		4,500,000		
Cost of Sales				
Opening inventory	400,000			
Purchases	2,000,000			
Less closing inventory	(500,000)			
		(1,900,000)		
Gross profit		2,600,000		
Operating expenses		(700,000)		
Depreciation		(100,000)		
Rental income		60,000		
Interest income		90,000		
Profit before tax		1,950,000		
Tax expense		(390,000)		
Profit after tax		1,560,000		
Dividends declared		(200,000)		
Profit retained		1,360,000		
Retained earnings, 1 Jan 20x5		600,000		
Retained earnings, 31 Dec 20x5		1,960,000		

Balance sheet as at 31 Dec 20x5				
		USD	Rate	SGD
Fixed assets		2,000,000		
Inventory		500,000		
Bond investment		1,200,000		
Accounts receivable		900,000		
Cash		125,000		
		4,725,000		
Accounts payable		1,565,000		
Share capital		800,000		
Retained earnings				
Pre-acquisition RE:	200,000			
Post-acquisition RE:	1,760,000			
		1,960,000		
Revaluation reserves		400,000		
		4,725,000		

Exchange rates are as follows:	SGD to USD1
1 Jan 20x4: Investment in Co Y	1.76
Purchase of opening inventory during Dec 20x4	1.73
Purchase of closing inventory during Dec 20x5	1.68
30 June 20x4	1.70
31 December 20x4	1.60
Average rate for 20x5	1.55
31 Dec 20x5	1.50
Date of dividend declaration	1.54

Co Y revalued its fixed assets on 31 Dec 20x4.

Assume that sales, purchases, other income, operating expenses, and tax are spread evenly throughout the year.

Foreign Currency Translation Reserve as at 1 Jan 20x5 . . . . . (200,000) DR

Investor Co paid US$600,000 to acquire a 40% interest in Co Y on 1 January 20x4. On 1 January 20x4, Co Y had inventory whose fair value exceeded the book value by US$50,000. The inventory was sold on 30 June 20x4. Tax rate is 20% throughout.

Required:

(a) Translate the financial statements into the presentation currency.

(b) Show the movements in net exposed items of Co Y for the year ended 31 December 20x5 as an analytical check of your computation.

(c) Prepare the equity accounting entries for Co Y for the year ended 31 December 20x5.

(d) Perform an analytical check of the Investment in Co Y as at 31 December 20x5.

P8.23 Translation of foreign currency transactions

Co Z's functional currency is the Singapore dollars. It entered into the following transactions in United States dollars during the financial year ended 31 December 20x5.

Transactions prior to 20x5	USD
Purchase of fixed assets on 1 Jan 20x4	1,000,000
Residual value is zero and economic useful life is 10 years	
Prepaid rent for period 1 January 20x5 to 28 Feb 20x5	15,000

Balance as at 31 Dec 20x4	
Accounts receivable	300,000
Cash	185,000
Accounts payable	(900,000)

Transactions during 20x5	USD
Sales on credit	2,000,000
Purchases on credit	1,500,000
Operating expenses paid in cash	150,000
Rental paid on 28 Feb 20x5 for period 1 Mar 20x5 to 31 Oct 20x5	60,000
Rental paid on 31 Oct 20x5 for period 1 Nov 20x5 to 28 Feb 20x6	30,000
Tax expense paid in cash	62,000
Dividends paid on 28 September 20x5	20,000
Purchase of FVOCI securities on 1 December 20x5	90,000
Fair value of FVOCI securities on 31 December 20x5	100,000

Sales, purchases, operating expenses, tax expense and related cash flows are evenly spread out during the year

Balance as at 31 Dec 20x5	
Accounts receivable	800,000
Cash	125,000
Accounts payable	(1,252,000)

Exchange rates are as follows:	SGD to USD1
1 Jan 20x4: Purchase of fixed assets	1.65
1 Nov 20x4, prepayment of rent for period 1 Nov 20x4 to 28 Feb 20x5	1.66
1 Jan 20x5	1.7
28 Feb 20x5, prepayment of rent for period 1 March 20x5 to 31 Oct 20x5	1.73
Average rate for 20x5	1.75
28 Sept 20x5, dividend declared	1.73
31 Oct 20x5, prepayment for rent for period 1 Nov 20x5 to 28 Feb 20x6	1.74
1 Dec 20x5, purchase of FVOCI security	1.78
31 Dec 20x5	1.79

Assume that sales, purchases, operating expenses, and tax are spread evenly throughout the year.

Required:

(a) Show journal entries to record transactions in 20x5 from the available information shown above, including any exchange gain or loss.

(b) Reconcile the exchange gain or loss in (a) with movement in net monetary assets (liabilities) during 20x5.

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[1] The real exchange rate (R) measures the cost of foreign goods relative to domestic goods. It can be defined as $R = SP^1/P^2$ where S is the spot exchange rate, P^1 is the price level in country 1 and P^2 is the price level in country 2.

[2] Sometimes the terms "economic exposure", "strategic exposure" and "operating exposure" are used interchangeably.

[3] Lessard D., and J. Lightstone, 2002. "Volatile Exchange Rates Can Put Operations at Risk", *Harvard Business Review*, No. 86405.

[4] Some academics define accounting exposure strictly as translation exposure and consider transaction exposure as part of economic exposure.

[5] Remeasurement is necessary if the books of the foreign operations are kept in a currency that is not its functional currency.

[6] IAS 21 does not specify the rates to be used for translating equity items (share capital and reserves).

[7] A foreign currency transaction is a transaction denominated in a currency other than the entity's functional currency.

[8] Paragraph 48A clarifies that apart from the disposal of an entity's entire interest in a foreign operation, the following partial disposals are accounted for as disposals: (a) when the partial disposal involves the loss of control of a subsidiary, which includes a foreign operation, regardless of whether the entity retains a non-controlling interest in its former subsidiary after the partial disposal; and (b) when the retained interest after the partial disposal of an interest in a joint arrangement or a partial disposal of an interest in an associate, which includes a foreign operation, is a financial asset that includes a foreign operation.

[9] The exchange gain is included in the gain in fair value. The exchange gain or loss relating to trading securities (fair value through profit or loss) need not be disclosed (IAS 21:52a).

[10] The standard seems to imply that the functional currency of a foreign operation is predominantly the local currency, and the impression we get is that the translation procedures are mainly in respect of the closing rate method. The FASB seems to take a similar view; it considers the case where the functional currency of the foreign operation is the parent's reporting currency as an exceptional case.

[11] In the separate financial statements of the reporting entity or the individual financial statements of the foreign operation, such exchange differences arising from monetary item that forms part of a reporting entity's net investment in a foreign operation is recognized in the profit or loss.

[12] This situation is applicable to an entity whose inventories are traded in foreign markets or a foreign operation whose books are recorded in the local currency, and whose functional currency is the parent's currency; that is, a remeasurement process is used.

[13] IAS 29 paragraph 8 states "The financial statements of an entity whose functional currency is the currency of a hyperinflationary economy, whether they are based on a historical cost approach or a current cost approach, shall be stated in terms of the measuring unit current at the date of statement of financial position".

[14] SFAS 52, paragraph 4. Reproduced with permission. Financial Accounting Standards Board, Statement of Financial Accounting Standards No 52 *Foreign Currency Translation*, Norwalk, CT.

[15] For example, refer to Nobes C.W., 1983. "A Review of the Translation Debate", *International Accounting and Transnational Decisions*, S. Gray (ed.), London: Butterworths & Co, pp. 215–225.

[16] Paragraph 40 of IAS 21 allows a rate that approximates the exchange rates at the dates of the transactions (such as an average rate for the period), to be used to translate income and expense items for practical reasons. However, the standard clarifies that the use of the average rate for a period is inappropriate when exchange rates fluctuate significantly.

[17] Paragraph 49 of IAS 21 explains that an entity may dispose or partially dispose of its interest in a foreign operation through sale, liquidation, repayment of share capital or abandonment of all or part of, that entity.

[18] Specifically, IFRS 10 requires the parent to account for all amounts previously recognized in other comprehensive income in relation to that subsidiary on the same basis as would be required if the parent had directly disposed of the related assets or liabilities when the parent loses control of a subsidiary.

CHAPTER

9

Financial Instruments

Classification, Recognition and Measurement

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand the definition and components of financial instruments;
- **LO2** Distinguish whether a financial instrument is debt or equity;
- **LO3** Understand compound financial instruments and know how to separate the debt and equity components;
- **LO4** Understand the categories of classification of financial assets and liabilities;
- **LO5** Understand the initial recognition and the subsequent measurement of financial assets and financial liabilities;
- **LO6** Account for the impairment of financial assets; and
- **LO7** Know when and how to derecognize financial assets and financial liabilities.

INTRODUCTION

One of the most notable developments in the financial world since the 1970s has been the introduction of several new and innovative financial instruments into the world's financial markets. The terms "financial engineering" and "financial instrument revolution" have often been used to describe this development. Very often, the new financial instruments are a mixture of extant financial instruments with new features added on. An example is the inflation-indexed bonds issued by the United States Department of the Treasury. This is a conventional bond with an embedded call option linked to an inflation index. Other financial instruments combine two or more instruments to create a new "synthetic" instrument, for example, certain types of swaps. Yet, others are a repackaging of existing financial products, for example, collateralized mortgage obligations.

Most new financial instruments have been created for specific purposes[1] in order to:

1. Exploit tax loopholes and asymmetries, for example, zero coupon bonds;
2. Take advantage of financial deregulation, for example, currency swaps;
3. Enable users to mitigate specific risks, for example, interest rate swaps;
4. Reduce transaction costs, for example, convertible bonds; and
5. Reduce agency costs, for example, puttable common stock.

Some instruments have been more successful than others; among these are the derivative instruments that include forward contracts, futures contracts, options contracts, and swaps. These are increasingly widely used for trading, arbitraging, and risk management purposes.

The appearance of these new and innovative financial instruments posed a number of challenges to the accounting profession. Some of those challenging issues include the following:

1. Some financial instruments have both debt and equity characteristics. Should the debt and equity elements be separately recognized? What is the appropriate method of separating them?
2. Many financial contracts are executory contracts and are off-balance sheet, posing significant problems of non-disclosure. Should the obligations under these financial contracts be recognized on the statement of financial position?
3. Some instruments have one or more derivatives embedded in them. Should the derivatives be separated from the host instrument? If so, under what conditions?
4. Some financial instruments, particularly derivatives, are used by business firms to reduce the volatility of earnings. However, the reduction in earnings volatility will not be reflected in the financial statements unless special accounting rules are introduced. Should financial instruments that are used as hedging instruments be accounted for in a different manner from financial instruments that are used for trading?

If investors and users of financial statements are to properly understand the financial instruments for decision-making as well as the assessment of risks, it is important that there is consistent accounting and adequate disclosure of such instruments.

In the past, the accounting profession's response to the new financial instruments was one based on a piece-meal approach, which often focused on one, or a limited number of, financial instruments. Some of these standards were not consistent with regard to the treatment of certain types of financial instruments, for example, derivatives. As this proved to be highly unsatisfactory, the accounting standards setting bodies, notably, the US Financial Accounting Standards Board (FASB) and the then International Accounting Standards Committee (IASC), set out on an ambitious project to establish a comprehensive accounting standard in the 1990s. The IASC proposed an exposure draft on financial instruments, Exposure Draft 40 followed by Exposure Draft 48. After many consultations and revisions, it became apparent to the standard setters that it was impractical to effectively cover all the issues relating to financial instruments in one umbrella standard. The IASC and its reconstituted body, the International Accounting Standards Board (IASB®), have since issued and revised three standards relating to financial instruments – International Accounting Standard (IAS® Standards) 32 *Financial Instruments: Presentation*,

IAS 39 *Financial Instruments: Recognition and Measurement* and IFRS® 7 *Disclosure.* In 2009, the Board commenced its project to review IAS 39 with the aim of replacing it with a new revised standard. The final standard, IFRS 9 *Financial Instruments* was issued in July 2014 and is effective for annual periods beginning on or after 1 January 2018.

OVERVIEW OF STANDARDS PERTAINING TO FINANCIAL INSTRUMENTS

IAS 32 deals mainly with the following issues:

1. Definition and classification of financial instruments into financial assets, financial liabilities, and equity instruments;
2. Distinguishing between financial liability and equity;
3. Accounting for compound financial instruments;
4. Accounting for share repurchase and treasury shares; and
5. Offsetting of financial assets and financial liabilities.

IFRS 9 deals mainly with recognition and measurement issues relating to financial instruments such as:

1. Definition, classification, and reclassification of financial assets and liabilities;
2. Recognition and derecognition of financial assets and liabilities;
3. Measurement at both initial recognition and subsequent measurement; and
4. Accounting for derivatives for trading and hedging purposes.

IFRS 7 deals mainly with the disclosure of financial instruments and risks associated with the use of financial instruments.

The Board decided to review IAS 39 in response to user comments that IAS 39 are difficult to interpret and apply. The project to review the existing financial instrument accounting standards gained impetus with the onset of the global financial crisis, as a lot of blame was placed on the accounting standards for causing the crisis. The situation was exacerbated with the G10 country leaders weighing in to exert pressures on the standard setters to speed up the reform process. With the crisis hitting the United States especially hard, the FASB was motivated to work together with the Board to converge both accounting standards.

In order to speed up the reform process, the Board reviewed and released the exposure draft revisions on different sections of IAS 39 in the following phases:

(a) Phase 1 covered derecognition criteria, with the exposure draft released in April 2009. In October 2010, the IASB decided to carry forward the derecognition criteria from IAS 39.

(b) Phase 2 covered classification and measurement criteria, with the first exposure draft released in July 2009 and second exposure draft in November 2012.

(c) Phase 3 covered the impairment methodology, with the first exposure draft released in November 2009, second exposure draft in March 2013, and the phase was completed in November 2013.

(d) Phase 4 covered hedge accounting, with the review draft published in September 2012 and final standard published in Chapter 6 of IFRS 9 (2013) in November 2013.

The final version of IFRS 9 which houses the requirements and application guidance for all the phases was issued in July 2014 and is effective for annual periods beginning on or after 1 January 2018.

In the following sections, we discuss the classification, measurement and impairment requirements of IFRS 9. Accounting for derivatives and hedge accounting are covered in Chapter 10.

SCOPE OF IAS 32 AND IFRS 9

Generally, an entity is required to apply IFRS 9 to all types of financial instruments. However, some investments, which meet the definition of a financial instrument under IAS 32 and IFRS 9, do not fall within the scope of these two standards as they are accounted for under other financial reporting standards. Some of these include:[2]

1. Interests in joint ventures, associates, and subsidiaries, which are accounted for in accordance with IAS 28 *Investments in Associates* and *Joint Ventures*, IAS 27 *Separate Financial Statements,* or IFRS 10 *Consolidated Financial Statements,* respectively. However, there are exceptions where IAS 28, IAS 27, or IFRS 10 permits or requires accounting treatment for certain interests in subsidiaries, associates, and joint ventures to be accounted for in accordance with IFRS 9. Those exceptions are as follows:
   (a) Where separate financial statements are prepared, and investments in subsidiaries, associates and jointly controlled entities are not classified as held for sale, these investments may be accounted for in accordance with IFRS 9 (IAS 27:10).
   (b) An investment in an associate company should be accounted for in accordance with IFRS 9 when the investor ceases to have significant influence over it (IAS 28:18).
2. Most leases, which are excluded from the scope of IAS 32 and IFRS 9. However, if a lease has an embedded derivative, the embedded derivative comes within the ambit of IFRS 9.
3. Rights and obligations under employee benefit plans. These are dealt with separately under IAS 19 *Employee Benefits*.
4. Insurance contracts, including contracts based on climatic, geological, or other physical variables such as earthquakes and hurricanes.
5. Financial instruments (including options and warrants) issued by the entity that fufills the definition of equity as set out in IAS 32. However, IFRS 9 must be applied by the holders of these equity instruments unless these equity instruments are interests in subsidiaries, associates and joint ventures as mentioned in 1 above.

CLASSIFICATION OF FINANCIAL INSTRUMENTS

Because of the wide range of financial instruments that could be used for a variety of purposes, it is necessary to systematically classify them to facilitate proper financial reporting.

IAS 32 paragraph 11 defines a financial instrument as “any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.” Financial instruments are thus classified into three broad categories — financial assets, financial liabilities and equity. Financial instruments may also be distinguished between primary instruments (such as cash, loan receivable, and equity instruments) and derivative instruments (such as options, futures contracts, and forward contracts) (IAS 32:AG 15).

Financial assets and financial liabilities are made up of various components, as shown in Table 9.1.

TABLE 9.1 Classification of financial instruments

Classification of financial instruments	Examples
Financial assets	
1. Cash	• Local or foreign currencies; cash deposited in a bank
2. Equity instrument of another entity	• Ordinary shares of a listed company
3. A contractual right to: (a) Receive cash or another financial asset from another entity (b) Exchange financial assets or financial liabilities with another entity under conditions that are potentially favorable to the entity	• Accounts receivable and loans receivable • An option that gives the holder the contractual right to receive, and the seller the contractual obligation to deliver shares in another entity
4. A contract that will or may be settled in the entity's own equity instrument and is (a) A non-derivative for which the entity is, or may be, obliged to receive a variable number of the entity's own equity instruments; or (b) A derivative that will, or may be, settled other than by the exchange of a fixed amount of cash, or another financial asset for a fixed number of the entity's own equity instruments[3]	• A contract to receive a variable quantity of the entity's own equity instruments equal in value to 100 ounces of gold • A contract to buy 1,000 shares at $2 if the share price is between $0 and $5 and at $12 if the share price is above $10
Financial liabilities	
1. A contractual obligation to: (a) Deliver cash or another financial asset to another entity; or (b) Exchange financial assets or liabilities with another entity under potentially unfavorable conditions	• Accounts payable and loans payable • A written option
2. A contract that will or may be settled in the entity's own equity instrument and is: (a) A non-derivative for which the entity is, or may be, obliged to deliver a variable number of the entity's own equity instruments; or (b) A derivative that will, or may be, settled other than by the exchange of a fixed amount of cash, or another financial asset for a fixed number of the entity's own equity instruments	• A contract to buy 1,000 barrels of oil that, if exercised, is settled net in the entity's own instruments by the entity delivering a variable quantity of those instruments equal to the value of the oil • An entity's obligation under a forward contract to repurchase a variable number of its own shares equal in value to US$1,000,000
Equity	
Any contract that provides evidence of a residual interest in the net assets of an entity	• Ordinary shares of a firm • Issued share options that give the holder the right to buy a fixed number of shares at a fixed price

DEBT VERSUS EQUITY

The classification of a financial instrument as a financial asset, financial liability, or equity instrument is governed by the principle of substance over form. For most instruments, this is normally not an issue. However, the emergence of financial instruments whose forms are not consistent with their substance, and instruments that contain both equity and debt elements, have made it necessary for standard-setting bodies to issue more specific guidelines for the proper classification of such financial instruments. A proper classification is important to ensure the proper treatment of income or expense (interest, dividend, gains and losses) relating to the instrument, and to facilitate the assessment of risk by the users of financial statements. The following discussions on debt or equity classifications are made from the perspective of an issuer of financial instrument.

page 794

Conditions for Recognition as Equity

IAS 32 paragraph 16 requires a financial instrument to be classified as an equity instrument if the two following conditions under (a) or (b) hold:

(a) The instrument includes no contractual obligation to:
   (i) Deliver cash or another financial asset to another entity; or
   (ii) Exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavorable to the issuer; or

(b) If the instrument will or may be settled in the issuer's own equity instruments, it is:
   (i) A non-derivative that includes no contractual obligation for the issuer to deliver a variable number of its own equity instruments; or
   (ii) A derivative that will be settled only by the issuer exchanging a fixed amount of cash or another financial asset for a fixed number of its own equity instruments. For this purpose, the issuer's own equity instruments do not include instruments that are themselves contracts for the future receipt or delivery of the issuer's own equity instruments.

Both conditions must hold in order for a financial instrument to be classified as an equity instrument.

Consider the following cases:

1. *Case A:* Company X issues 1,000 units of mandatorily redeemable preference shares (MRPS). There is a fixed redemption period for these shares; holders of these shares can also opt to redeem the shares at any time for a fixed amount of cash.
2. *Case B:* Company Y enters into a contract to purchase oil by issuing a variable amount of its own shares that is equivalent to the market value of 1,000,000 barrels of oil.
3. *Case C:* Company Z issues 100 warrants to Company S. Company Z will have to issue 100 units of its own shares to Company S if the latter exercises the warrants. The exercise price is $0.20 per share.

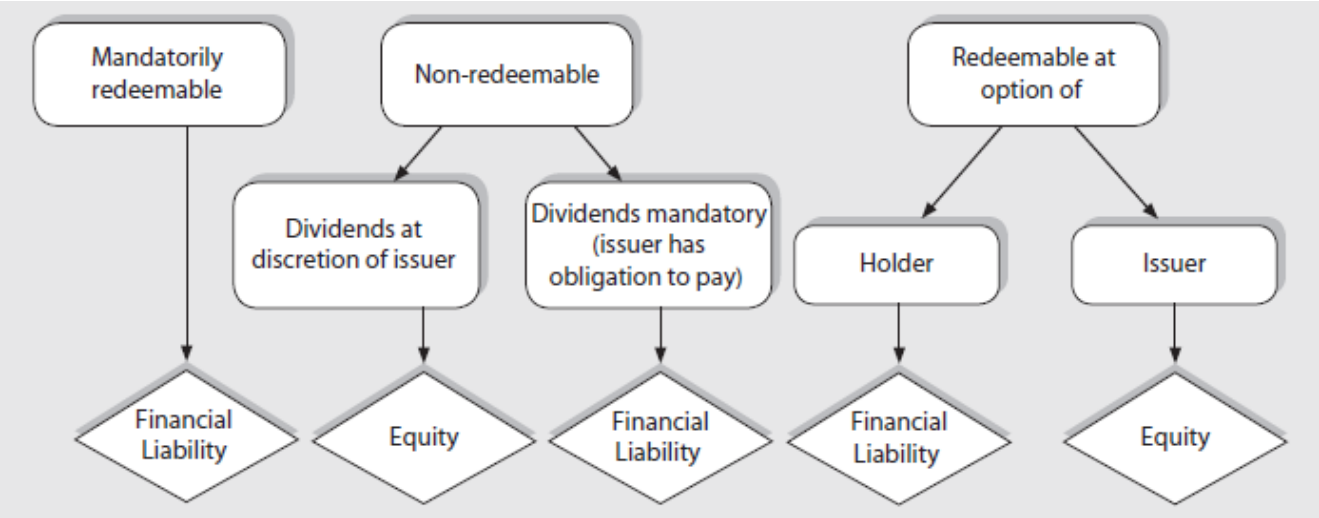
In Case A, the issuer, Company X, has no unconditional right to avoid delivering cash to settle its contractual obligation when the holders redeem their MRPS. In form, the MRPS are equity instruments, but in substance, they are financial liabilities. The obligation to redeem for cash and the inability to avoid this obligation mean that the MRPS fail to meet condition (a)(i) set out in IAS 32 paragraph 16 and, therefore, have to be classified as a financial liability. Since MRPS are financial liabilities, the dividend paid on this instrument is recognized in the income statement as an interest expense (IAS 32:35).

In Case B, the contract is a non-derivative. Under that contract, Company Y issues its own equity instruments to settle its obligation. The amount of obligation to be settled depends on the price of oil at the date of settlement. The fact that the obligation is settled by Company Y issuing a variable number of its own shares indicates it is a financial liability. Condition (b)(i) of IAS 32 paragraph 16 is not met.

As for Case C, the warrants are derivative instruments that are settled by Company Z issuing a fixed quantity of its own shares in exchange for a fixed amount of cash. The warrants meet the conditions to be classified as an equity instrument, i.e., condition (b)(ii) is met. For determining whether there is a contractual obligation to deliver cash or

another financial asset, it should be noted that an entity's own equity instruments does not meet the definition of financial asset. Figure 9.1 provides the classification into liability and equity.

FIGURE 9.1 Classification of liability and equity instruments



Contingency Settlement Provisions

IAS 32 paragraph 25 provides further guidelines to help determine if a financial instrument is classified as a financial liability, if the financial instrument contains *contingency settlement provisions*. A financial instrument is classified as a financial liability if the contract contains an unavoidable obligation on the part of the issuer to deliver cash or another financial asset upon the occurrence or non-occurrence of certain future events that are beyond the control of the issuer and the holder of the instrument. These uncertain future events set out in the terms and conditions to the financial instrument may be the issuer's revenue, net earnings, or a specified financial ratio such as the debt-equity ratio or a change in a benchmark interest rate. The exception to this requirement is when (a) the part of the contingent settlement provision that could require settlement in cash or another financial asset is not genuine; (b) the issuer can be required to settle the obligation in cash or another financial asset only in the event of liquidation of the issuer; or (c) the instrument has all the features of a puttable instrument and meets the conditions in paragraphs 16A and 16B of IAS 32. If one of these 3 conditions is met, the financial instrument will be classified as equity.

COMPOUND FINANCIAL INSTRUMENTS

Compound financial instruments are instruments that have both debt and equity components. They are a subset of hybrid instruments, which are instruments consisting of a non-derivative host instrument and an embedded derivative. The host instrument in this case is a debt instrument, and the embedded derivative is an equity option. IAS 32 deals with the accounting for compound financial instruments from the issuer's perspective. IFRS 9 deals with the accounting for hybrid instruments from the investor's perspective. Other embedded derivatives in compound financial instruments may include prepayment options, swaptions, commodity indices, and put options for holders to buy back instrument.

A class of compound financial instruments that has proven to be popular with the financial community is the convertible security such as a convertible bond. A convertible bond is a bond that provides an option for the holder to convert it into ordinary shares or common stock. A convertible bond, therefore, has the features of both a financial

liability and an equity instrument (the option). Compound financial instruments are popular with both issuers and investors. From the investor's perspective, the equity option provides the holder with an opportunity to convert the debt into ordinary shares so as to enable the holder to benefit from possible future capital appreciation. Investors, therefore, are willing to accept a much lower coupon rate compared to the prevailing market interest rate in return for the right to exercise the equity option. From the issuer's perspective, the lower coupon rate means a lower cash outflow although not necessarily a lower interest expense. Of course, the downside to the issuing firm is the potential dilution in earnings per share should the holders exercise their conversion right.

Other compound financial instruments are structured deposit products, for example, dual-currency deposits (deposit with a put foreign currency option), equity-linked deposits, equity structured products such as principal protected notes, and range-accruals. Equity-linked deposits have the total returns calculated by reference to changes in market prices of a share or a basket of shares, or a stock market index.

If the compound financial instrument contains a host that is an asset not within the scope of IFRS 9 e.g. a lease or insurance contract, the embedded derivative shall be separated from the host if and only if:

a) the economic characteristics and risks of the embedded derivative are not closely related to the host;
b) a separate instrument with the same terms as the embedded derivative meets the definition of derivative; and
c) the compound financial instrument is not measured at FVTPL. (Paragraph 4.3.3 IFRS 9)

Accounting from the Holder's Perspective

Under IFRS 9, compound financial assets where the host is an asset within the scope of IFRS 9 are not bifurcated, i.e. the liability and equity components are not separately accounted for.[4] The entire instrument is (including all embedded derivatives) classified on the basis of their business model and their contractual cash flow characteristics (IFRS 9.4.3.2). Generally, the embedded derivative with its host instrument is likely to contain cash flows that are not solely payments of principal and interest. Accordingly, the entire instrument will fail the contractual cash flow characteristic test. Therefore, the hybrid instrument would not quality for amortized cost measurement and would be carried at fair value through profit or loss. We will discuss the business model and contractual cash flow characteristics test in more details below.

The rationale for not bifurcating compound financial assets is that there could be two financial assets with similar characteristics but accounted for differently due to bifurcation. For example, compare two financial assets. A financial asset with contractual cash flow characteristics, solely principal and interest, and embedded derivative such as debt with contractual cash flows linked to equity or commodity prices. Another financial asset with similar characteristics, contractual cash flows not solely principal and interest, but embedded derivative closely related to the host instrument such as a levered debt with interest rate at 1.75 times LIBOR. The former would have been bifurcated, while the latter could be measured at FVTPL in its entirety. Further, as set out in BC 4.89 to IFRS 9, the elimination of the embedded derivative guidance for hybrid contracts with financial host that was in IAS 39 would reduce complexity in financial reporting of financial assets and improves the reporting for financial instruments.

An alternative model that has been assessed and ruled out by the Board is "principal and interest" bifurcation. Under this approach, the financial instrument is assessed to determine if the host contract has cash flows that are solely payments of principal and interest, and an embedded residual feature. The Board noted that this approach requires an assessment of the financial management of individual instrument, which is inconsistent with the assessment of business model at a higher level of aggregation (IFRS 9 paragraph BC68).

Accounting from the Issuer's Perspective

IAS 32 prescribe the accounting treatment for the issuer of a compound financial instrument. In particular, paragraph 28 of IAS 32 requires an issuer of a non-derivative financial instrument to evaluate the terms of the financial instrument to determine if it contains both a liability and an equity component. If the instrument does, the components should be classified separately as financial liabilities, financial assets or equity instruments accordingly i.e. the

financial liability and its equity element are bifurcated. As we will describe in more details below, on initial recognition, the issuer will measure the fair value of the liability first. The equity component (i.e. the equity conversion option) is the residual arising from the difference between the total proceeds from the financial instrument and the fair value of the liability component.

Controversies Relating to the Accounting of Compound Financial Instruments

Accounting of compound financial instruments has been a controversial issue in the accounting profession. The main issue is whether the debt and the equity components should be separately recognized in the financial statements. Even among accounting standards' setting bodies, there is no unanimous agreement on the issue. In the United States, the equity element is not recognized separately, and a convertible bond is accounted for in the same way as a conventional unconvertible bond.[5] The main argument for adopting this treatment is that the equity option is not separable from the debt instrument and, therefore, no independent value can be assigned to it. IAS 32, however, requires that the debt and equity elements be separately recognized in the financial statements. The main argument for separate recognition is that the information provided is more relevant as it reflects the substance of the instrument and results in the portrayal of the effective borrowing cost.

Under IAS 32, the total proceeds of the issue are allocated to the debt and equity elements using what is known as the *incremental method*. Under this method, the fair value of the debt component is determined first by calculating the present value of the cash flows from the instrument (interest payments and principal sum discounted at the interest rate of a bond without a conversion feature). The residual, after deducting the fair value of the debt component from the total proceeds, is allocated to the equity component under an account "Capital Reserve — Equity Options" in the equity section of the statement of financial position. Because the fair value of the debt component is less than the principal amount of the debt, a discount on the bond arises. The discount is amortized over the life of the bond using the effective interest rate method. The amortization of the bond discount, together with the coupon interest payments, is equal to the effective borrowing cost of the bond.

There may be anti-dilution clauses in convertible bonds that provide for issuance of additional shares in certain circumstances. This may change the character of conversion option from equity to liability, if certain conditions are present. We will discuss this in more details below.

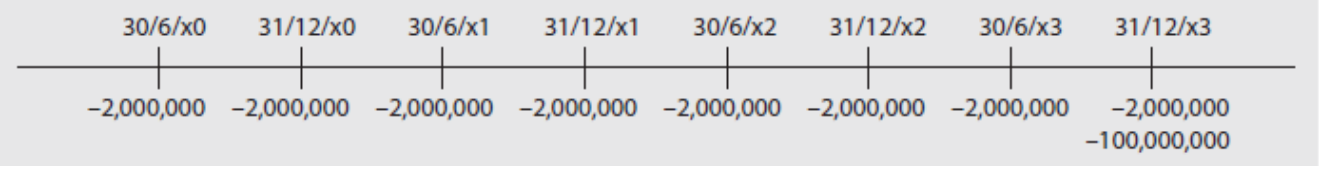
The separate recognition of the debt and equity components of a compound financial instrument is shown in Illustration 9.1.

ILLUSTRATION 9.1 Initial recognition of debt and equity

On 1 January 20x0, Alpha Corporation issued at par a convertible bond with a nominal value of $100,000,000. The bond was repayable on 31 December 20x3. The coupon rate of the bond was 4% per annum. Interest payments were paid at the end of each half-yearly period (i.e. at the rate of 2% per half-year). The bond was convertible to equity shares at the ratio of $1 of bond for 0.75 ordinary share at any time up to the date of maturity. A similar bond issued by this enterprise, which did not have a convertible feature, paid interest of 6% per annum (i.e. at the rate of 3% per half-year).

page 798

A timeline of the cash flows for the convertible bond is shown below.



Incremental Method of Allocation between Debt and Equity Components

The fair value of the debt component is the present value of the interest payments and the repayment of the principal amount at maturity discounted at the market interest rate at inception. The present value of the bond's cash flows can be calculated using either a spreadsheet function, a financial calculator or a present value table. We use present value tables to calculate the value of the debt component, as shown below.

Present value of interest payments (2,000,000 × $PVIFA_{3\%,8}$)	$14,039,380
Present value of principal at maturity (100,000,000 × $PVF_{3\%,8}$) . . .	78,941,000
Present value of debt component	$92,980,380[6]

Note the following:

1. The discount rate is based on the effective market interest rate at the time of issue. Since the effective interest rate is 6% per annum, the rate for semi-annual payments is 3%.
2. $PVIFA_{3\%,8}$ is the present value interest factor of an ordinary annuity at a discount rate of 3% for eight (semi-annual) periods.
3. $PVF_{3\%,8}$ is the present value of $1 at the end of the eighth period at a discount rate of 3%.

The value of the equity component is the difference between the proceeds from the bond and the fair value of the debt component:

$$\begin{aligned}\text{Value of equity} &= \$100{,}000{,}000 - \text{Value of debt component} \\ &= \$100{,}000{,}000 - \$92{,}980{,}380 \\ &= \$7{,}019{,}620\end{aligned}$$

Note that the bond is issued at a discount of $7,019,620 (the difference between the fair value and the nominal value). This is equal to the value of the equity component. Had the bond been issued at other than par value, the discount on the bond will not be equal to the value of the equity component.

At the date of issue of the convertible bond, the following journal entry is recorded:

Dr Cash	100,000,000	
Dr Unamortized discount on bonds (SFP)	7,019,620	
Cr 4% Bonds payable (SFP)		100,000,000
Cr Capital reserve – Equity options (SFP)		7,019,620

Recognition of debt and equity elements in convertible debt at date of issue

Measurement of Interest Expense

The interest expense should reflect the effective borrowing cost of the bond after taking into account the issuer's risk characteristics. The effective interest rate is the market interest rate at the time of issue of the bond. The coupon interest payment is lower than the market rate and, therefore, does not reflect the true cost of capital of the debt instrument. If interest expense is recorded based on the coupon rate, the interest expense will be understated and net earnings will correspondingly be overstated. There is an implicit exchange of equity rights for a lower coupon rate. The reduction in interest rate (in the form of a lower coupon rate) is, therefore, not a "free lunch" enjoyed by the issuer. The income statement should reflect the economic cost of borrowing. The effective interest expense is the sum of the interest expense based on the coupon rate and the amortization of the discount on the bond.

Effective interest expense = Coupon interest expense + Amortization of discount on the bond

In order to calculate the periodic amortization of discount on the bond, a bond discount amortization schedule is prepared using the effective interest rate method. This is shown in Table 9.2.

TABLE 9.2 Amortization schedule of bond discount[7]

Date	Cash interest (a) = 2% per semi-annual period × principal	Effective interest (b) = 3% per semi-annual period × carrying amount b/f	Amortized discount = (b) – (a)	Unamortized discount = Balance b/f – Amortized discount	Carrying amount = Principal – Unamortized discount
1 January 20x0				$7,019,620	$ 92,980,380
30 June 20x0	$ 2,000,000	$ 2,789,411	$ 789,411	6,230,209	93,769,791
31 December 20x0 ...	2,000,000	2,813,094	813,094	5,417,115	94,582,885
30 June 20x1	2,000,000	2,837,487	837,487	4,579,628	95,420,372
31 December 20x1 ...	2,000,000	2,862,611	862,611	3,717,017	96,282,983
30 June 20x2	2,000,000	2,888,489	888,489	2,828,528	97,171,472
31 December 20x2 ...	2,000,000	2,915,144	915,144	1,913,384	98,086,616
30 June 20x3	2,000,000	2,942,598	942,598	970,786	99,029,214
31 December 20x3 ...	2,000,000	2,970,786	970,786*	0	100,000,000
Total.....	$16,000,000	$23,019,620	$7,019,620		

* Rounded off

The following entries record the amortization of the discount on the bond and the payment of interest expense on 30 June 20x0:

30 June 20x0	Dr Amortization of discount (I/S) . . .	789,411		
	Cr Unamortized discount (SFP) .			789,411
	Amortization of discount for the first half-year			
	Dr Interest expense (I/S)	2,000,000		
	Cr Cash (SFP)			2,000,000
	Cash interest paid			

Or the two entries can be combined as follows:

30 June 20x0	Dr Interest expense (I/S)	2,789,411		
	Cr Cash (SFP)			2,000,000
	Cr Unamortized discount (SFP) .			789,411
	Interest expense for period ended			

Partial Conversion of a Bond before Maturity

Normally, convertible bonds are convertible at specified time intervals so as to spread out the dilution effect of conversion. Of course, holders of convertible bonds will exercise the conversion rights only if it is in their economic interest to do so; for example, when the stock price has appreciated considerably and when conversion will yield an immediate capital gain.

If there is partial conversion during the life of the bond (see Illustration 9.2), the following are recorded:

1. Issue of paid-up shares on conversion;[8]
2. The balance in the unamortized discount on the bond that is adjusted proportionately in relation to the unconverted portion of the bond; and
3. A proportionate amount of capital reserve that is transferred to issued share capital.
4. The carrying value of the bond attributable to the partial conversion is derecognized.

ILLUSTRATION 9.2 Partial conversion of a convertible bond

Continuing with Illustration 9.1, assume that on 30 June 20x1, 20% of the convertible debt holders exercised their right to convert the bonds to equity. Subsequent to this date, the share prices performed badly and by expiry date, no other conversions were made. The amortization schedule for the discount on the bond is revised accordingly in Table 9.3.

TABLE 9.3 Schedule of bond amortization with partial conversion

Date	Cash interest (a) = 2% per semi-annual period × principal	Effective interest (b) = 3% per semi-annual period × Carrying amount	Amortized discount = (b) – (a)	Unamortized discount = Balance b/f – Amortized discount	Carrying amount = Principal – Unamortized discount
1 January 20x0				$7,019,620	$92,980,380
30 June 20x0	$2,000,000	$2,789,411	$789,411	6,230,209	93,769,791
31 December 20x0 ...	2,000,000	2,813,094	813,094	5,417,115	94,582,885
30 June 20x1	2,000,000	2,837,487	837,487	4,579,628	95,420,372
Partial conversion.....				(915,926)	(19,084,074)
31 December 20x1 ...	1,600,000	2,290,089	690,089	2,973,613	77,026,387
30 June 20x2	1,600,000	2,310,792	710,792	2,262,821	77,737,179
31 December 20x2 ...	1,600,000	2,332,115	732,115	1,530,706	78,469,294
30 June 20x3	1,600,000	2,354,079	754,079	776,627	79,223,373
31 December 20x3 ...	1,600,000	2,376,701*	776,627*	0	80,000,000

* Rounded off

The following journal entry is to record the partial conversion:

30 June 20x1	Dr 4% Bonds payable	20,000,000	(20% × $100,000,000)		
	Dr Capital reserve – Equity options	1,403,924	(20% × $7,019,620)		
	Cr Ordinary shares			20,487,998	(Residual)
	Cr Unamortized discount on bond			915,926	(20% × $4,579,628)
	Conversion of bond to equity				

Redemption of Compound Financial Instruments

It may make economic sense for the issuing firm to redeem the instrument if there are interest rate changes subsequent to the issue of a compound financial instrument. For example, if the interest rate had fallen significantly since the date of issue, the issuing firm could redeem the instrument and reissue another one with a lower interest rate, thereby saving on interest expense. IAS 32 AG33 guides accounting for redemption. The consideration paid and transaction costs are allocated to the liability and equity components of instrument at transaction date. An example of early redemption of a convertible bond is shown in Illustration 9.3.

ILLUSTRATION 9.3 Early redemption of compound financial instruments

Assume the same facts as in Illustration 9.1. On 31 December 20x1, the market interest rate for a similar bond with no conversion feature was 4% per annum. Alpha Corporation decided to redeem the convertible bond by repurchasing it for 108,000,000 from the holders who accepted the offer. The redemption price is allocated between the debt and the equity components as follows:

Present value of interest payments (remaining four payments of $2,000,000 at 2%)	$ 7,615,457
Present value of principal at maturity	92,384,543
Value of debt component	$100,000,000
Value of equity component (residual)	8,000,000
Redemption price	$108,000,000

At the date of the redemption, the carrying values of the debt and equity components of the convertible bond are as follows:

Carrying amount of debt component	$ 96,282,983*
Carrying amount of equity component	7,019,620
	$103,302,603

* Carrying amount as at 31 December 20x1 (refer to Table 9.2).

The difference between the redemption amount and the carrying value of the compound financial instrument is $4,697,397, which is allocated to the debt and equity components as follows:

Difference between fair value and carrying value of debt component	$3,717,017
Difference in value of equity component	980,380
	$4,697,397

The entry to record the redemption of the convertible bond is as follows:

31 Dec 20x1	Dr 4% Bonds payable	100,000,000	
	Dr Bond redemption expense .	3,717,017	
	Dr Capital reserve – Equity options	8,000,000	
	Cr Unamortized discount on bonds		3,717,017
	Cr Cash		108,000,000
	Redemption of convertible bond		

The bond redemption expense is the difference between the fair value of debt and its carrying amount. The unamortized discount on bonds is the balance as at 31 December 20x1 (refer to Table 9.2).

The equity component remains in equity, but may be transferred from one item within the equity section to another.

Inducing Early Conversion of a Bond

There may be situations where it may be impractical or impossible to redeem a compound financial instrument. An alternative solution is to provide incentives to induce early bond conversion by amending the conversion terms of the compound instrument (see Illustration 9.4).

ILLUSTRATION 9.4 Inducing early conversion of compound financial instruments

Assume the same facts as in Illustration 9.1. On 1 January 20x2, Alpha Corporation changed the conversion ratio to 0.8 ordinary shares (from 0.75) for every $1 nominal value bond if the bondholders converted the bond before 31 January 20x2. The share price on 2 January 20x2 was $2 per share.

The original conversion ratio would require the issue of 75,000,000 additional shares if the entire amount of the convertible bond were converted. With the change in the conversion ratio, the new shares to be issued on full conversion would be 80,000,000, an increase of 5,000,000 new shares. The cost of inducing conversion was therefore

the price of Alpha's share multiplied by the incremental number of new shares, that is, $10,000,000 ($2 × 5,000,000). This amount was recognized as an expense in 20x2 (assuming that conversion is effected on 2 January 20x2).

Dr 4% Bonds payable	100,000,000	
Dr Capital reserve – Equity options	7,019,620	
Dr Inducement expense	10,000,000	
Cr Share capital		113,302,603
Cr Unamortized discount on bonds		3,717,017

Inducement of early conversion

Special Issues

In this section, we discuss some special issues associated with the issuance of convertible bonds.

Early redemption option

It is not uncommon for issuers of convertible bonds to include other terms and conditions in connection with the issuance of the financial instrument. A typical example is early redemption option (or also known as prepayment option). As the name implies, this option allows the issuer to redeem the convertible bond in advance of its stipulated redemption date. Such early redemption may or may not be required on the occurrence of any events in which case it becomes a contingent settlement provision.

Early redemption options are embedded derivatives and the issuer must assess carefully whether these options are to be accounted for separately from the host instrument. The assessment criteria is set out in paragraph 4.3.3 of IFRS 9 which states an embedded derivative in a hybrid contract[9] must be separated from the host contract if 3 conditions are met. They are namely (1) the economic characteristics and risks of the embedded derivative are not closely related, (2) a separate instrument with the same terms as the embedded derivative would qualify as a derivative and (3) the hybrid contract is not measured at fair value through profit or loss. Upon separation from the host contract, the embedded derivative is accounted for as a derivative (i.e. at fair value through profit or loss) in accordance with IFRS 9.

Paragraph B4.3.5 of IFRS 9 sets out examples where the economic characteristics and risks of the embedded derivative are not closely related to that of the host contract. Paragraph B4.3.8 of IFRS 9, on the other hand illustrates examples where the economic characteristics and risks of the embedded derivative are closely related to that of the host contract.

For instance, assuming that the first two criteria are met, if the option's exercise price arising from the exercise of the early redemption option does not approximate the amortized cost of the financial liability on each exercise date or the amount that is paid on the exercise of the early redemption option does not compensate the lender for an amount that approximates the present value of the lost interest for the remaining term of the host contract, the early redemption option is not closely related to the underlying financial liability host. Accordingly, the embedded derivative is required to be accounted for separately.

Once, it is determined that the embedded derivative is to be accounted for separately, the question becomes how to account for this embedded derivative if there are other components within the hybrid financial instrument.

Paragraph 31 of IAS 32 states that the equity component of a convertible bond is assigned as the residual amount after deducting the amount separately determined for the liability component from the fair value of the instrument as a whole on initial allocation of the carrying amount of a compound financial instrument to its equity and liability

components. The values of the derivative features other than the equity component (such as an equity conversion option) are included in the liability component. Therefore, on initial recognition, the sum of the carrying amounts assigned to the liability and equity components always equal to the fair value of the instrument as a whole. Consequently, no gain or loss arises on initial recognition from the application of split accounting.

The following example which is an adaptation of Example 10 in Implementation Examples to IAS 32 demonstrates this.

ILLUSTRATION 9.5 Issuer's accounting for multiple embedded derivative in a compound financial instrument

On 1 January 20x20, Company Butternut (with December year end) issued 4% convertible bonds with a term of 5 years. The proceeds received on the issuance amounted to $600,000. Embedded within the convertible bond is an early redemption clause which allows Company Butternut to redeem the convertible bond before its due date. Upon the exercise of the early redemption option, Company Butternut is required to pay the holders at 80% of the issue price. The holder of the convertible bond is entitled to convert all or any of the convertible bond at the rate of 1 for 1 into 600,000 fully paid ordinary shares of Company Butternut. At the end of the 5th year, if the bonds are not converted, Company Butternut will redeem the bonds through payment of cash. The value of a similar bond without the early redemption option or equity conversion option is $570,000. In respect of the embedded early redemption option, it has been determined based on an option pricing model, that the value to Company Butternut in a similar bond, but without an equity conversion option is $2,000.

Account for the various elements of the convertible bond from the perspective of Company Butternut and prepare the accounting entries for the year ended 31 December 20x20 and 31 December 20x21. Assume that the fair value of the early redemption option as at 31 December 20x20 and 20x21 is $2,500 and $3,000 respectively.

Analysis

Determine the components of the convertible bond and the accounting treatment for each component

There are 3 components in this instrument. They are namely:

1. Host instrument – Financial liability bonds
2. Early redemption option – financial asset
3. Equity conversion option

Host instrument – Financial liability bonds

The underlying host instrument is the bonds issued by Company Butternut. As discussed in the fact pattern, Company Butternut has the obligation to redeem the bonds at the end of the 5th year through payment of cash if the bonds are not converted. Accordingly, the host instrument meets the definition of a liability in IAS 32 and that host instrument component which is a debt instrument will be accounted for in accordance with IFRS 9.

Early redemption option

The early redemption clause is, in essence a call option which gives Company Butternut the option but not the obligation to redeem the convertible bond before its due date. Another separate instrument with the same terms and conditions would have qualified as a derivative. The issue at hand here is whether this embedded derivative is required to be accounted for separately. This would depend on whether the economic characteristics and risks of the early redemption option are closely related to the underlying financial liability (i.e. loan component). Paragraph B4.3.5(e) of IFRS 9 states that a call, put or prepayment option embedded in a host debt contract is not closely related to the host contract unless the option's exercise price is approximately equal on each exercise date to the amortized

cost of the host debt instrument or the exercise price of early redemption option reimburses the lender for an amount up to the approximate present value of lost interest for the remaining term of the host contract. In this case, the amortized cost of the debt instrument without separation of the equity component is equal to its cost[10]. Hence, the amount paid on exercise of the redemption option which is at 80% of the issue price does not approximate the amortized cost on each exercise date. Therefore, the embedded derivative is not closely related to the loan host contract. Accordingly, split accounting of the embedded early redemption option is required.

page 805

Equity conversion option

In this case, the holder of the convertible bond has the option to convert all or any of the convertible bond at the rate of 1 for 1 into 600,000 fully paid ordinary shares of Company Butternut. From the perspective of Company Butternut, the equity conversion option is a contract that will be settled by the Company Butternut delivering a fixed number of its own equity instruments (i.e. 600,000 if all are converted) in exchange for a fixed amount of cash (i.e. $600,000 if all are converted). Accordingly, the equity conversion option meets the definition of and will be accounted for as an equity instrument in IAS 32.

Allocation of value to each component

The fair value of a similar bond without the early redemption option or equity conversion option is $570,000. The early redemption option is a financial asset from the perspective of Company Butternut. As set out in the fact pattern, the value of the option is $2,000. Accordingly, the value allocated to the equity component is $32,000 ($600,000 – $570,000 + $2,000). No gain or loss arises on initial recognition.

Prepare the amortization table for the liability component

The effective interest rate which is the rate that exactly discounts the future cash flows arising from the 5-year bond to the gross carrying amount of $570,000 works out to approximately 5.16%.

Date	Beginning carrying value	Cash interest (4%)	Effective Interest (5.16%)	Amortized Discount	Ending carrying value
	$	$	$	$	$
1 Jan 20x20	570,000				
31 Dec 20x20	570,000	24,000	29,412	5,412	575,412
31 Dec 20x21	575,412	24,000	29,691	5,691	581,103
31 Dec 20x22	581,103	24,000	29,985	5,985	587,088
31 Dec 20x23	587,088	24,000	30,294	6,294	593,382
31 Dec 20x24	593,382	24,000	30,618	6,618	600,000

page 806

Prepare accounting entries

		$	$	
1 Jan 20x20	Dr Cash	600,000		Note 1
	Dr Early redemption option (derivative)	2,000		
	Cr Financial Liability – Loan		570,000	
	Cr Equity – equity conversion feature		32,000	
	Being issuance of convertible bonds			
31 Dec 20x20	Dr Interest expense	29,412		
	Cr Cash		24,000	
	Cr Financial Liability – Loan		5,412	
	Being accretion of financial liability and recognition of effective interest for the year			
	Dr Early redemption option (derivative)	500		
	Cr Fair value changes in option (P/L)		500	
	Being fair value changes in early redemption option			
31 Dec 20x21	Dr Interest expense	29,691		
	Cr Cash		24,000	
	Cr Financial Liability – Loan		5,691	
	Being accretion of financial liability and recognition of effective interest for the year			
	Dr Early redemption option (derivative)	500		
	Cr Fair value changes in option (P/L)		500	
	Being fair value changes in early redemption option			

Note 1. If the fact pattern were to be varied such that the early redemption option is not required to be separated (i.e. it is closely related), then the accounting entries on 1 January 20x20 will take the following form.

		$	$
1 Jan 20x20	Dr Cash	600,000	
	Cr Financial Liability – Loan		568,000
	Cr Equity – equity conversion feature		32,000
	Being issuance of convertible bonds		

In this case, applying paragraph 31 of IAS 32, the value of the derivative feature other than the equity component is included in the liability component. Hence, the value allocated to the liability component of the convertible bond is therefore $568,000 ($570,000-$2,000). The value allocated to the equity component is $32,000 ($600,000-$568,000). The effective interest rate for the liability component in this case would be 5.24%.

Adjustment Provisions

In the discussion above, the equity conversion option meets the definition of equity under IAS 32 as it meets the fixed-for-fixed requirement, that is, the convertible debt instrument is settled by delivering a fixed number of shares for a fixed amount of cash received upon redemption. Hence, the carrying value of the equity conversion option is

derived as the residual after deducting the fair value of the debt component from the total proceeds received from the issuance of the convertible instrument as set out in IAS 32.

It is not uncommon for such convertible instruments to contain adjustment clauses, which change the conversion ratio upon the occurrence of certain events. Such events, which are described in greater detail below, could include structural changes in the issuer's ordinary shares such as share split or shares consolidation. The intent of such clauses is to avoid any dilution in the convertible instrument holder's interests in the issuer's equity arising from the event that was not originally envisaged when the conversion ratio was first established. The issue here is whether such adjustment provisions in a compound financial instrument results in the entity delivering a variable amount of shares and thereby causing the equity conversion feature to be a derivative as opposed to an equity instrument.

In our view, such clauses should generally not taint the fixed-for-fixed requirement, resulting in the instrument being classified as a financial liability if such clauses for adjustment are in the terms and conditions of the original instrument and the nature as well as the extent of the adjustment is designed effectively to compensate for any dilution on the part of the holders of the instrument caused by the event. Table 9.4 shows some common adjustment clauses encountered in practice.

TABLE 9.4 Common adjustment clauses in compound financial instruments

Events	Detailed description
Consolidation, subdivision, or reclassification of shares	If and whenever there shall be an alteration to the number of issued shares as a result of consolidation, sub-division, or reclassification, the conversion price shall be adjusted by multiplying the conversion price in force immediately before such alteration by the following fraction: $\frac{A}{B}$ Where: A = the aggregate number of issued shares immediately before such alteration B = the aggregate number of issued shares immediately after such alteration
Capitalization of profits or reserves	If and whenever the issuer shall issue any shares credited as fully paid to the holders of shares by way of capitalization of profits or reserves including shares paid out of distributable profits or reserves (except scrip dividend) and would not have constituted a capital distribution, the conversion price shall be adjusted by multiplying the conversion price in force immediately before such issue by the following fraction: $\frac{A}{B}$ Where: A = the aggregate number of issued shares immediately before such alteration B = the aggregate number of issued shares immediately after such alteration
Capital distributions	If and whenever the issuer shall pay or make any capital distribution to shareholders (except by way of scrip dividend or capitalization of profits), the conversion price in force immediately before such capital distribution by the following fraction: $\frac{A-B}{B}$ Where: A = the current market price of one share on the last trading day immediately preceding the date on which the capital distribution is publicly announced B = the fair market value on the date of such announcement of the portion of the capital distribution attributable to one share

Effects of the Separation of Debt and Equity Elements in a Compound Financial Instrument

There are certain accounting effects when a compound instrument is separated into its debt and equity elements (also known as "split accounting") as compared to non-separation where the instrument is treated purely as a debt instrument. The impact on reported earnings may be significant, particularly if the amount of the bond is large and the difference between the coupon rate on a straight bond (without the conversion feature) and a convertible bond is large. This in turn may affect the value of the shares of the entity. The difference in accounting treatment also has an impact on certain financial ratios. Ratios such as the net profit margin and the return on equity are adversely affected by the separate recognition of the debt and equity elements. However, there is a positive effect on the debt-equity ratio, which will be lower in the earlier years,[11] and this may have implications for debt covenants. However, in subsequent years, the cumulative effects of amortization will reduce equity and increase debt. Whether the effects in the earlier years will be reversed out in the later years depends on the magnitude of the unamortized discount and the equity option.

The effects of split accounting for convertible bonds on the financial statements and on selected financial ratios are summarized in Table 9.5.

TABLE 9.5 Effect of split accounting on selected financial ratios

	No split accounting	Split accounting
Income statement	Net earnings higher because of lower interest expense	Net earnings lower because of amortization of bond discount
Statement of financial position	Carrying amount of bond is higher; equity is lower	Carrying amount of bond is lower; equity is higher because of the Capital reserve – Equity options in the earlier years but the cumulative effects of amortization will increase debt and reduce equity in the later years
Selected financial ratios		
Net profit margin (Net earnings/Sales)	Higher	Lower
Debt-equity ratio (Debt/Shareholders' equity)	Higher	Lower at inception (lower debt and higher equity)
Return on equity (Net earnings/Shareholders' equity)	Higher (higher net earnings, no equity option)	Lower (lower net earnings, higher equity because of equity option)
Times interest earned (Earnings before interest and tax/Interest expense)	Higher (lower interest expense, higher earnings)	Lower (higher interest expense, lower earnings because of amortization of bond discount)

ALLOCATION OF TRANSACTION COSTS

Entities normally incur costs in issuing debt instruments, and convertible bonds are no exception. Transaction costs include professional fees, registration fees, stamp duty, and advertising costs. Transaction costs incurred in issuing debt and equity instruments are accounted for differently. Transaction costs on debt instruments are accounted for as

yield adjustments to the effective interest rate (IFRS 9:B5.4.1). Transaction costs on equity instruments are accounted for as a deduction from equity after deducting any related income tax benefit (IAS 32:35). Examples of fees that are part of effective interest rate include origination fees received to create the debt, commitment fees received to originate a loan, and origination fees paid on issuing debt. Fees not part of effective interest rate are investment management services fees charged for servicing a loan (B5.4.2, B5.4.3, IFRS 9). In the case of compound financial instruments, the transaction costs should be allocated to the debt and equity components proportionately as shown in Illustration 9.6.

ILLUSTRATION 9.6 Allocation of transaction costs between debt and equity components

Assume that transaction costs incurred in the issue of the convertible bond by Alpha Corporation in Illustration 9.1 amounted to $500,000. Other facts remain the same. The transaction costs of $500,000 are allocated to the debt and equity components as follows:

$$\text{Allocated to debt } \frac{\$92,980,380}{\$100,000,000} \times \$500,000 = \$464,902$$

$$\text{Allocated to equity } \frac{\$7,019,620}{\$100,000,000} \times \$500,000 = \$35,098$$

The equity component reported as capital reserves will then be $6,984,522 ($7,019,620 – $35,098) assuming that there is no related tax benefit.

SHARE REPURCHASE

In recent years, it is a common practice for listed companies to buy back their own shares. Share buy-backs, or repurchases, are often undertaken to provide support for the price of the buying company's shares. One reason entities repurchase their own shares is to signal to the market that the share is undervalued. Share buy-backs can also be employed to boost the share price of the company. By reducing the number of shares, earnings per share will improve, and assuming that the price-earnings ratio remains unchanged, the price of the share should rise.

Treasury Shares

Treasury shares are a pool of shares issued by a company that the company subsequently repurchased. They are not an asset of the company as a company cannot own part of itself. The appropriate treatment is to deduct treasury shares from the total shareholders' equity. No gain or loss is recorded on the purchase, sale, and issue or cancellation of the company's own shares (IAS 32:33). Treasury shares may be kept indefinitely, reissued, or cancelled. Illustration 9.7 shows the accounting for a share repurchase.

ILLUSTRATION 9.7 Share repurchase

Beta Company Ltd, a listed company, had shareholders' equity of $15,000,000 on 1 January 20x4 as follows:

Issued share capital	$12,000,000
Retained earnings	3,000,000
Total shareholders' equity	$15,000,000

On 1 June 20x4, Beta Company Ltd purchased 20,000 of its own shares at a price of $1.50 each. The journal entry to record the transaction is as follows:

1 June 20x4	Dr Treasury shares	30,000	
	Cr Cash		30,000
	Repurchase of treasury shares		

The shareholders' equity section after the share buy-back is as follows:

Issued share capital	$12,000,000
Retained earnings	3,000,000
	$15,000,000
Less; Treasury shares	(30,000)
Total shareholders' equity	$14,970,000

On 1 October 20x4, the company decided to cancel the treasury shares. The entry to record the cancellation is as follows:

1 Oct 20x4	Dr Issued share capital	30,000	
	Cr Treasury shares		30,000
	Cancellation of treasury shares		

RECOGNITION

On initial recognition, paragraph 3.1.1 of IFRS 9 requires an entity to recognize a financial asset or financial liability in its statement of financial position when the entity becomes a party to the contractual provisions of the financial instrument. Hence, an entity on applying this principle, recognizes all of its contractual rights and obligations under derivatives as assets or liabilities on initial recognition in its statement of financial position[12].

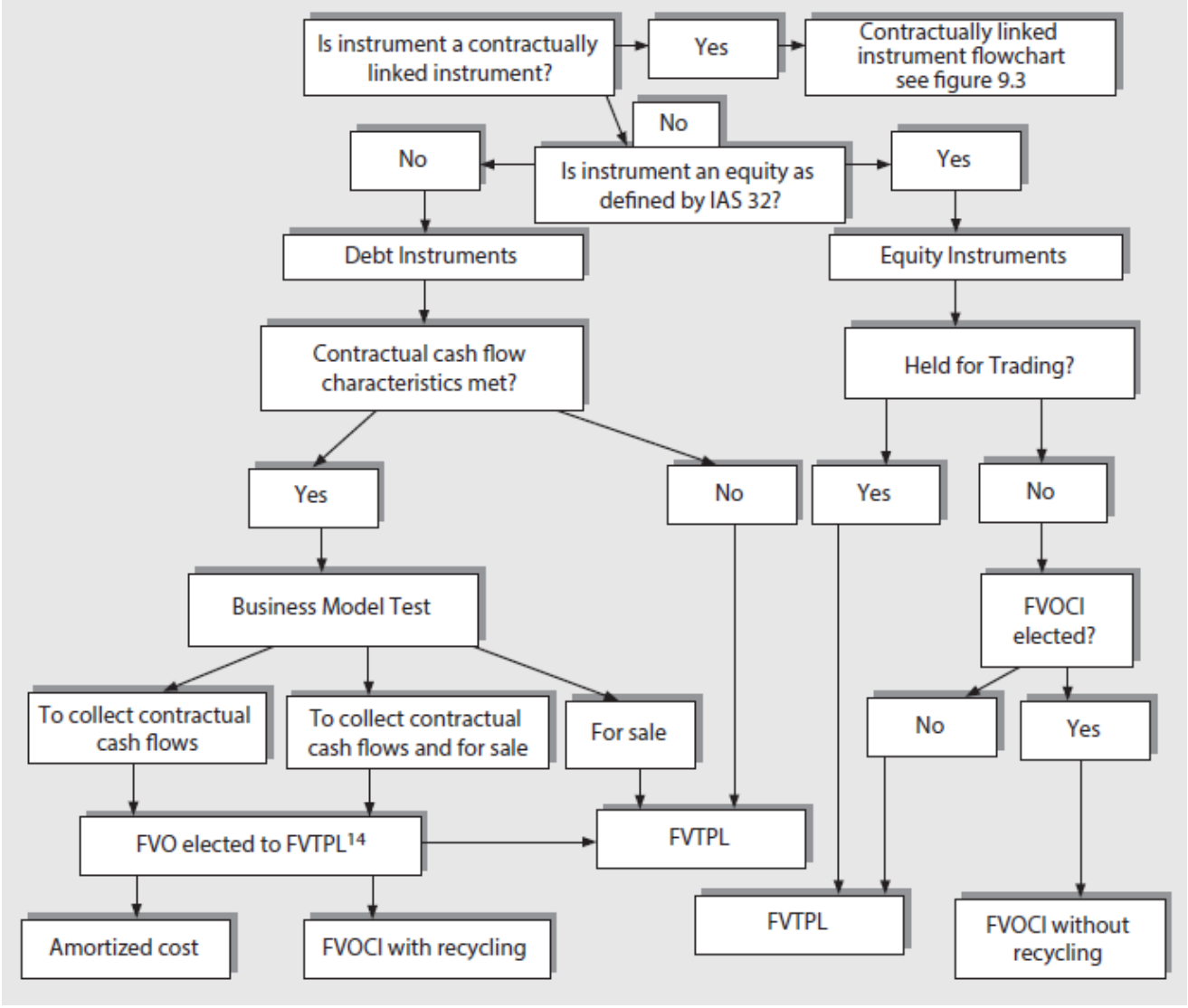
In addition, IFRS 9 requires the entity to classify the financial assets on initial recognition as either amortized cost, fair value through other comprehensive income or fair value through profit or loss for purposes of subsequent measurement[13]. The classification will be done on the basis of both the entity's business model for financial assets and the contractual cash flow characteristics of the financial asset.

With regard to financial liabilities, the entity is required to classify all financial liabilities as amortized cost for subsequent measurement except for a few scenarios as set out in B4.2.1 of IFRS 9. An example of the scenario would be when the entity classifies the financial liabilities as fair value through profit or loss.

CLASSIFICATION OF FINANCIAL ASSETS

The classifications under IFRS 9 are "fair value" and "amortized cost." These classifications are determined on the basis of the entity's business model and the contractual cash flow characteristics of the financial asset. The IFRS 9 classification flowchart on debt and equity instruments is shown in Figure 9.2.

FIGURE 9.2 Classification of debt and equity instruments into measurement categories (IFRS 9)



In summary, as set out in paragraphs 4.1.2 and 4.1.2A of IFRS 9,

- A debt financial asset will be measured at amortized cost if:
  a) the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows and

b) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

- A debt financial asset will be measured at fair value through other comprehensive income if:

  a) the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and

  b) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

- In all other cases, the debt financial asset will be measured at fair value through profit or loss (i.e. if it is not measured at amortized cost or at fair value through other comprehensive income). However, in the case of investments in equity instruments not held for trading, an entity may make an irrevocable election at initial recognition to present subsequent changes in fair value in other comprehensive income.

BUSINESS MODEL TEST

How Business Model is Determined

As discussed above, the business model test is one of the two steps that an entity needs to consider in classifying its financial assets. Paragraph B4.1.2A of IFRS 9 explains that an entity's business model refers to how it manages its financial assets in order to generate cash flows. In other words, the entity's business model would determine how cash flows from the financial asset will be generated. It could be generated by the entity collecting the contractual cash flows from the asset itself, selling the financial asset or both.

The business model can be determined on portfolio basis and not on the individual instrument itself or reporting entity level. An entity may have more than one business model for managing its financial assets, e.g. one portfolio for collecting contractual cash flows and another portfolio for trading.

The business model is determined based on the way the financial assets are managed and performance evaluated by key management personnel. The factors to be considered include but not limited to:

1. How the performance of the financial assets are reported to key management personnel. However, consideration of fair values from the liquidity perspective does not contradict the objective of holding the assets to collect contractual cash flows.
2. How managers of the business are compensated (e.g. based on fair value changes of the financial assets managed)
3. Frequency, timing, and volume of sales in prior periods. Infrequent sales, sales of insignificant amounts, sale of investments close to maturity may be consistent with the objective of holding the financial assets to collect contractual cash flows. If the credit quality of financial assets has deteriorated such that they no longer meet the entity's documented investment policy, sales of these assets are not inconsistent with the objective of collecting contractual cash flows. If the financial assets are held to meet liquidity needs in a stress case scenario, the sale of these assets to meet liquidity needs or maintain maturity profiles are not inconsistent with the objective of collecting contractual cash flows. If the purpose is to maintain liquidity requirements and recurring as well as significant sales are required for business or regulatory reasons, the objective is not to collect contractual cash flows.
4. Modification of cash flows from floating rates to fixed rates via derivatives such as interest rate swaps does not change the business model.

page 813

Examples of Business Model Test

Example 1

An entity holds quoted bonds to collect their principal and interest but would sell the investments to fund capital expenditures if the need arises. The business model is to hold bonds to collect contractual cash flows as sale is expected to be infrequent.

Example 2

An entity holds bonds to meet its daily liquidity needs. The entity actively manages the returns on the bonds.

The business model is to both hold bonds to collect contractual cash flows and for sale.

Example 3

An entity originates loans to customers and sells the loans to a securitization vehicle. The securitization vehicle issues instruments to investors. The entity originates loans for sale. Further, the entity controls and consolidates the securitization vehicle. The consolidated group and the securitization vehicle originate loans to collect contractual cash flows.

Example 4

An entity buys loans, including loans that are credit-impaired. If payments are not made, the entity contacts borrowers to collect the cash flows. The entity also enters into interest rate swaps to convert the interest flows from fixed rate to floating rates. The business model is to collect contractual cash flows. The presence of an interest rate swap to modify the cash flows does not affect the business model.

Example 5

An entity manages its loans with the objective of realizing cash flows through sale of the loans. The decisions are made based on the fair values of the loans, which result in active buying and selling of loans. The business model is to hold the loans for sale.

CONTRACTUAL CASH FLOW CHARACTERISTICS TEST

The contractual cash flow test is the other step that an entity need to consider in classifying its financial assets. The entity will have to determine whether the financial asset's contractual cash flows are solely payments of principle and interest on the principal amount outstanding. This test is also known as the "SPPI" test.

The debt instrument meets the contractual cash flow characteristic test when the contractual terms give rise to payments of principal[15] and interest[16] only on specified dates. The principal and interest payments should be payments for credit risk and time value of money in a lending arrangement. The payments could include compensation for liquidity risk and profit margin. However, if the payments are related to other forms of volatilities and risks such as equity price risk, commodity price risk or volatility risk, the debt instrument would not satisfy the contractual cash flow characteristic test.

Examples of Contractual Cash Flow Characteristics Test

Example 1

A bond's contractual terms specify payments of principal and interest on principal linked to an inflation index. The inflation link is not levered and the principal is protected. The bond meets the contractual cash flow characteristics test. The interest rate is reset to "real" interest rate based on the inflation link.

Example 2

A bond's contractual terms specify payments of principal and interest on principal linked to an equity index. The bond does not meet the contractual cash flow characteristics test.

Example 3

A bond's contractual terms specify payments of principal and interest on principal that is reset for a three-month term based on the current three-month LIBOR rate. A floating rate bond meets the contractual cash flow characteristics test.

Example 4

A loan pays an inverse floating interest rate. The loan does not meet the contractual cash flow characteristics test.

Example 5

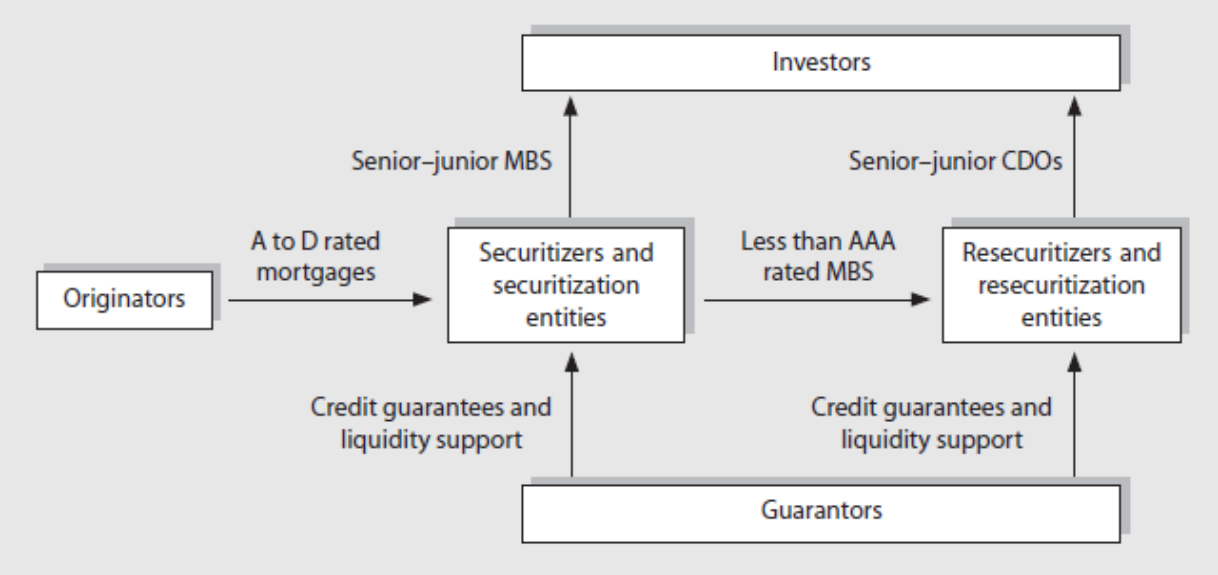
A bond pays a floating interest rate with an interest rate cap. The bond contains payments of both fixed interest rates and variable interest rates. The bond meets the contractual cash flow characteristics test.

Securitization and Structured Vehicles

Stephen Ryan sets out four key players in the securitization activities (see Figure 9.3).[17] The banks, which lend to the borrowers are called the originators. Originators originate mortgages, hold them in inventory and accumulate them for sale. The mortgages are accounted for as held-for-sale, lower of cost or fair value (FAS 65). The securitized assets may be housed in separate securitization entities or vehicles, which are called the securitizers. The latter sell the securitized assets to the investors. The securitized assets are typically of shorter tenures than the original underlying assets so as to enhance the liquidity of the securitized assets. This is especially so for the mortgage loans. It creates a financing risk to the securitizers as the securitized assets are due for rollovers. The securitizers are supported by guarantors in the form of credit guarantees or liquidity support. An accounting question that arises is whether securitized assets in the securitization entity should be consolidated. The securitization entity is consolidated with the issuer when the issuer retains control over the securitization entity. The securities are classified as amortized cost in the originators' books and classified as either trading or FVOCI in the investors' books.

page 815

FIGURE 9.3 Flowchart of securitization



The securitized financial asset transferred by the originator is governed by IFRS 9. Derecognition rules specify that a financial asset is derecognized when the rights to cash flows of the financial asset are expired or transferred, or

when control of the asset is transferred.

HSBC carries out securitization of some of its loans, credit card receivables, debt securities, and trade receivables. The following criteria are used to determine if the securitized assets should be derecognized from its statement of financial position: whether the bank has transferred its contractual right to receive cash flows from the asset; if the bank has not transferred its rights, whether the bank has assumed an obligation to transfer the cash flows to another party; if the bank has transferred substantially all the risks and rewards of ownership of the assets and the extent of the bank's continuing involvement with these assets. HSBC consolidates the special purpose entities (SPE), in which HSBC exercises control.

Contractually-linked financial instrument

An issuer may, in certain transactions, prioritize payments to holders of financial assets using multiple contractually linked instruments that creates different concentrations of credit risks. Such differing concentrations are known as tranches. The tranches will have a subordination ranking which sets out the order in which cash flows generated by the issuer are allocated to each tranche. In such setups, the holders of a tranche have the right to payment of principal and interest on the principal outstanding only if the issuer generates sufficient cash flows to satisfy higher ranking tranches.

A contractually-linked financial instrument is considered to have cash flow characteristics that are payments of principal and interest on the principal outstanding only if all the following characteristics are met.

(a) Contractual cash flows of the tranche are solely payments of principal and interest. This requires an assessment of tranche principal and interest without having to look through the underlying pool of financial instruments;

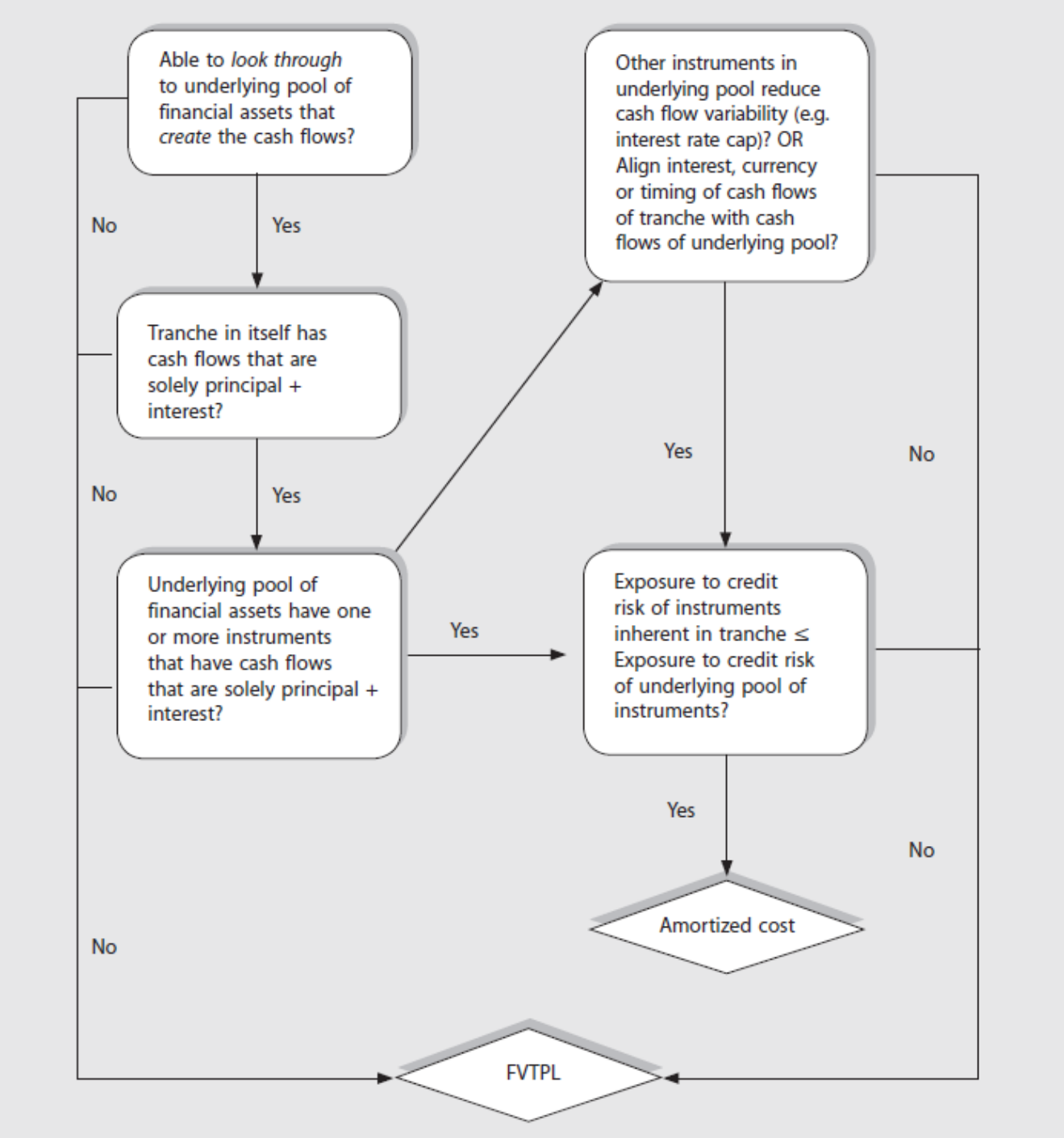
(b) Cash flows of the underlying pool of financial assets are solely principal and interest; and page 816

(c) Credit risk of tranche is not greater than that of the underlying assets and the leverage of the holding cannot be significant.

A tranche is considered to have contractual cash flows even if the tranche is prepayable, contingent on the event of prepayment occurring in the underlying pool or the collaterals are assets that are not measured at amortized cost.

The decision flowchart on contractually-linked financial instrument is shown in Figure 9.4.

FIGURE 9.4 Contractually-linked financial instrument flowchart



MEASUREMENT

Table 9.6 shows the three classifications and the measurement requirements under IFRS 9: fair value changes through profit or loss, amortized cost and fair value changes recognized in other comprehensive income.

Initial Recognition

Paragraph 5.1.1 of IFRS 9 sets out the initial recognition measurement requirements for both financial asset and financial liabilities. Specifically, IFRS 9 requires an entity to measure, at initial recognition:

- Financial asset not at fair value through profit or loss: Fair value plus or minus transaction costs directly attributable to the acquisition or issue of the financial asset.
- Financial liability not at fair value through profit or loss: Fair value plus or minus transaction costs directly attributable to the acquisition or issue of the financial asset.

However, there is an exception to the above requirement. In the case of trade receivables that do not contain a significant financing component in accordance with IFRS 15 *Revenue from contracts with customers* (or when the entity applies the practical expedient in paragraph 63 of IFRS 15), IFRS 9 requires such trade receivables to be measured at their transaction price on initial recognition.

The fair value of a financial instrument at initial recognition is normally the transaction price. If part of the consideration paid is for something other than the financial instrument, the entity is required to measure the fair value of the financial instrument. A case in point is zero-coupon loan. The fair value of the loan is measured as the present value of all future cash receipts discounted using prevailing market interest rates (IFRS 9 B5.1.1). Exceptions to the use of transaction price as fair value are related party transactions, transactions that take place under duress, and when unit of account represented by transaction price differs from unit of account for the asset or liability measured at fair value and market in which transaction takes place differs from the principal market (IFRS 13 B4).

If an entity determines that the fair value at initial recognition differs from the transaction price, the entity shall account for that instrument at that date as follows:

(a) at the measurement required by IFRS 9 paragraph 5.1.1 if that fair value is determined based on Level 1 inputs (i.e. quoted price in an active market for an identical asset or liability) or if that fair value was based on valuation techniques, that valuation technique uses only data from observable markets. The difference between that fair value at initial recognition and the transaction price is recognized in profit or loss as a gain or loss;

(b) in all other cases, at the measurement required by IFRS 9 paragraph 5.1.1, adjusted to defer the difference between the fair value at initial recognition and the transaction price. After initial recognition, the entity shall recognize that deferred difference as a gain or loss over time only to the extent that it arises from a change in a factor that market participants would take into account in pricing the asset or liability. (Paragraph B5.1.2A IFRS 9)

TABLE 9.6 IFRS 9 classifications and measurement for financial assets

Classification	Initial recognition	Subsequent measurement	Gains or losses
FVTPL	Fair Value	Fair Value	• Dividends to PL • FV change to PL • Cash interest to PL
Amortized cost	Fair Value + Transaction costs	Amortized cost	• Effective interest to PL • Impairment loss to PL
FVOCI	Fair Value + Transaction costs	Fair Value	• Dividends to PL • FV change to OCI, not recycled for equity, recycled for debt • Effective interest to PL

page 818

- FX gains or loss to OCI for equity as item is non-monetary, to PL for debt

Subsequent Measurement

Financial asset

For subsequent measurement, paragraph 5.2.1 of IFRS 9 requires an entity to measure a financial asset at either (a) amortized cost, (b) fair value through other comprehensive income or (c) fair value through profit or loss in accordance with its classification set on initial recognition. We will discuss the accounting treatment for each category in more details below.

IFRS 9 requires all investments in equity instruments and contracts on those investments to be measured at fair value. However, the IFRS Standard clarifies that cost may be an approximate estimate of fair value in limited circumstances. Such limited circumstances could be a situation in which there is insufficient recent information to allow the entity to measure the fair value of the equity instrument or a situation where there is a wide range of possible fair value measurements and cost represents the best estimate of fair value within the range (B5.2.4 of IFRS 9). IFRS 9 is also unequivocal in stating that cost is never the best estimate of fair value for investments in quoted equity investments (or contracts on quoted equity investments) (B5.2.6 of IFRS 9).

Financial liability

For financial liabilities, an entity is required to measure its financial liabilities at amortized cost on subsequent measurement with the exception of certain items as set out below:

a) financial liabilities at fair value through profit or loss[18].
b) financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies.
c) financial guarantee contracts.
d) commitments to provide a loan at a below-market interest rate.
e) contingent consideration recognized by an acquirer in a business combination to which IFRS 3 applies. (B4.2.1 of IFRS 9)

Essentially, for subsequent measurement of financial liabilities, IFRS 9 substantially retains the previous requirements of IAS 39 with the exception of the portion of the gain or loss on a financial liability designated as fair value through profit or loss that is attributable to changes in its own credit risk. Generally, IFRS 9 requires that portion to be presented in other comprehensive income with the remaining changes in the fair value recognized in profit or loss (Paragraph B5.7.8 of IFRS 9). Such changes recognized in other comprehensive income cannot be recycled to profit or loss. However, the entity may transfer the cumulative gain or loss within equity (Paragraph B5.7.9 of IFRS 9).

page 819

A case in point on the classification of financial instruments is reflected in HSBC's 2009 financial statements.

In HSBC's 2009 statement of financial position, financial assets classified at fair value through profit or loss include trading assets and financial assets designated at fair values under fair value options, which together make up about 19% of HSBC's total assets. These assets include securities issued by the US government, US government agencies, the UK government, the Hong Kong government and other governments, asset-backed securities, corporate and other debt securities, and equity securities. Besides debt and equity securities, the trading assets also include loans and advances to banks and non-banks. Reverse repos, which are short-term lending against securities held as collaterals, form the largest component of the loans and advances held for trading. The financial assets designated for fair value under fair value option include debt and equity securities.

In HSBC's 2009 statement of financial position, financial liabilities classified at fair value through profit or loss include trading liabilities and financial liabilities designated at fair values under fair value options, which together make up about 15% of HSBC's total liabilities. Trading liabilities include deposits placed by other banks, customer deposits, debt securities issued and net short positions in securities. Financial liabilities include deposits placed by

other banks, customer deposits, liabilities to customers under investment contracts, debt securities issued, subordinated liabilities, and preference shares. The classification into trading liabilities and liabilities designated at fair value mirrors that of the asset classification.

In HSBC's 2009 income statement, the line item "net income/(expense) from financial instruments designated at fair value" includes both the fair value changes as well as the related interest income, interest expense and dividend income of the statement of financial position items "financial assets designated at fair value," "financial liabilities designated at fair value," and derivatives that are managed together with the same financial assets and liabilities. The latter is part of the "Derivatives" asset and liability statement of financial position items. The fair value changes of "debt securities in issue" are also included in this category. HSBC shows the fair value changes of "debt securities in issue" separately from the fair value changes of financial assets or liabilities designated at fair value in its income statement. The net trading income category in HSBC income statement includes net income generated by statement of financial position items "Trading assets," "Trading Liabilities," and "Derivatives" (both assets and liabilities). The trading assets include the government and corporate debt securities and the interest income from such securities are shown separately as "Net interest income on trading activities." Interest rate derivatives such as interest rate and cross-currency swaps also involve interest cash flows. The interest component of the interest rate derivatives are included in the category "Net interest income on trading activities." The fair value changes in the trading assets, trading liabilities and derivatives are shown as "Trading income excluding net interest income."

Debt securities are fixed income instruments and include bonds. Bond prices are quoted as percentages of par (or face) values. Clean prices exclude interest accruals while dirty prices are clean prices plus accrued interests.

Floating rate notes (FRN) are medium to long-term obligations with variable coupons periodically reset every one, three or six months with the coupon fixed at specified spreads to LIBOR.

AMORTIZED COST AND EFFECTIVE INTEREST RATE CALCULATION

Amortized cost

A financial asset is measured at amortized cost if two conditions are met:

1. The business model's objective of holding the assets is to collect contractual cash flows.
2. The contractual terms of the financial assets provide only principal and interest payments on specified dates. The interest is consideration for the time value of money and credit risk.

Prepayment is considered as payment of principal and interest if:

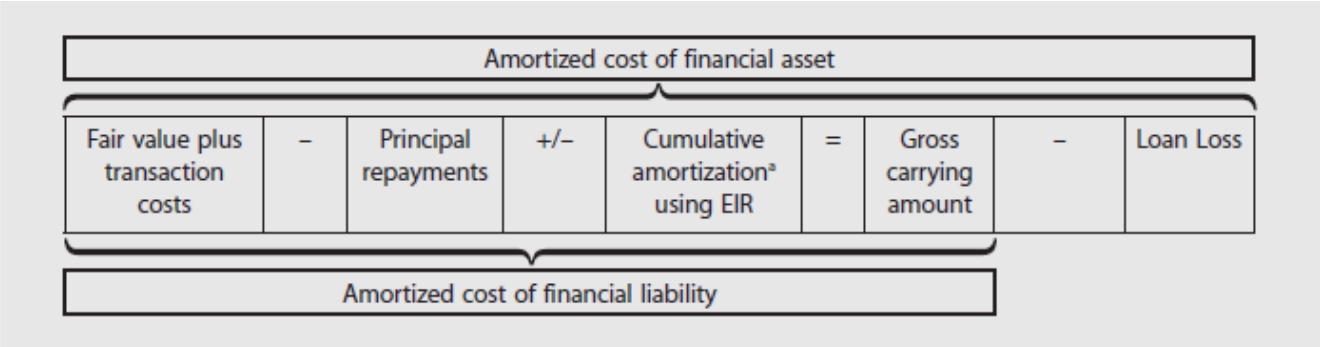
1. The prepayment term is not contingent on future events, except to offer protection from credit deterioration, change in control of issuer, and changes in tax laws; and
2. The prepayment represent unpaid amounts of principal and interest.

Appendix A to IFRS 9 defines the amortized cost of a financial asset as the amount at which the financial asset is measured at initial recognition minus the principal repayments, plus or minus the cumulative amortization using the effective interest method of any difference between that initial amount and the maturity amount and, for financial assets, adjusted for any loss allowance. The loss allowance is the allowance for expected credit loss on financial assets measured in accordance with the requirements of IFRS 9. We will discuss this loss allowance and its measurement in more details in the section below.

The definition of amortized cost of a financial liability is the same as the above with the exception that there is no loss allowance in the case of a financial liability.

Figure 9.5 shows the computation of amortized cost for financial asset and financial liability.

FIGURE 9.5 Amortized cost for financial asset and financial liability



[a] Amortization is on the difference between the initial amount and maturity amount.

The effective interest method referred to in the definition uses the effective interest rate (EIR) in the allocation and recognition of the interest revenue or interest expense in the profit or loss over the relevant period of the financial asset or financial liability.

Effective interest rate

Appendix A to IFRS 9 defines the EIR as the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial asset or financial liability to the gross carrying amount of a financial asset or to the amortized cost of a financial liability. The gross carrying amount is the amortized cost of the financial asset before adjusting for the loss allowance.

When calculating the EIR, IFRS 9 requires an entity to estimate the expected cash flows taking into consideration all the contractual terms of the financial instrument. Such terms could include but not limited to prepayment terms, extension terms, call and similar options. However, the entity should not consider the expected credit losses, i.e. the expected credit losses should not be built into the expected cash flows with the exception of one case[19]. The reason for this is because IFRS 9 considers the expected credit losses and the recognition of the interest revenue (via applying the effective interest rate methodology) separately i.e. the two concepts are de-coupled and separately accounted for. We will cover the concept of expected credit losses in the section below.

Generally, interest revenue on financial asset is calculated by applying the EIR to the gross carrying value of the financial asset. When the financial asset is credit-impaired, the interest revenue is calculated by applying the EIR to the amortized cost, i.e. after taking into consideration the impairment allowance.

The effective interest calculation itself includes all fees and points paid or received between parties to the contract, transaction costs, and all other premiums or discounts. This effectively means that these fees, transaction costs, premiums or discounts will be included in the effective interest calculation and will be amortized over the relevant period of the financial asset or financial liability.

The application of the effective interest method in the calculation of interest revenue and amortized cost is illustrated in Illustration 9.8.

ILLUSTRATION 9.8 Measurement at amortized cost

The relevant particulars are summarized as follows:

Investment cost	$102,700

Principal at maturity	$100,000
Premium on purchase	$ 2,700
Coupon rate	4.5%
Cash interest income per annum	$ 4,500
Years to maturity from inception	6.5 years
Effective interest rate	4.02%
Cash interest income for half-year 20x4	$ 2,250
Fair value at 31 December 20x4	$104,000

The following schedule shows the calculation of the effective interest income and the amortization of the bond premium.

Date	Cash interest 4.5%	Effective interest 4.02%	Amortized premium	Unamortized premium	Principal amount	Ending gross carrying amount
1 July 20x4				$2,700	$100,000	$102,700
31 December 20x4	$ 2,250	$ 2,064	$ 186	2,514	100,000	102,514
31 December 20x5	4,500	4,121	379	2,135	100,000	102,135
31 December 20x6	4,500	4,106	394	1,741	100,000	101,741
31 December 20x7	4,500	4,090	410	1,331	100,000	101,331
31 December 20x8	4,500	4,074	426	905	100,000	100,905
31 December 20x9	4,500	4,056	444	461	100,000	100,461
31 December 20x10	4,500	4,039	461	0	100,000	100,000
	$29,250	$26,550	$2,700			

The journal entries are as follows:

1 July 20x4	Dr Investment in debt security	100,000	
	Dr Unamortized premium	2,700	
	Cr Cash		102,700
	Purchase of investment		
31 Dec 20x4	Dr Cash	2,250	
	Cr Interest income		2,250
	Recognition of interest income.		
	Dr Interest income/amortized premium	186	
	Cr Unamortized premium		186
	Amortization of premium for half-year		

The fees, transaction costs, premiums or discounts are included in the calculation of effective interest rate and amortized over the remaining life of the transaction. In the case where the fees, transaction costs, premiums or discounts are repriced to market rates prior to maturity date, the amortization is the period to the next repricing date. For example, the premium or discount of a floating rate financial instrument is amortized from the last interest repricing or settlement date to the next interest repricing date. Transaction costs include fees or commissions paid to agents, advisors, brokers, and dealers.

Floating rate EIR calculations for financial assets and liabilities

For floating-rate financial assets and floating rate financial liabilities, paragraph B5.4.5 of IFRS 9 states that EIR is altered by periodic re-estimation of cash flows to reflect the movements in the market interest rates. However, IFRS 9 does not specify how the EIR for floating rate instruments should be calculated.

There are two approaches to calculate EIR for a floating rate financial instrument depending on whether expectations of future cash flows are considered (refer to Illustration 9.9).

1. Where the floating rate debt instrument issue/purchase price is close to nominal amount, the EIR is set equal to the spot rate during the current period and future cash flows are not projected. In other words, the actual benchmark interest rate that was set for the relevant period is used. The premium/discount arises from the difference in the coupon interest locked in the current period from the last interest reset date and the current market rate until the next interest reset date. The premium/discount is amortized until the next interest reset date.
2. Future cash flows and future expectations on interest rates are projected. The EIR would differ from the spot interest rates. The carrying amount would differ from nominal amount immediately after interest receipt/payment.

ILLUSTRATION 9.9 Computation of EIR for floating rate loans

On 1 January 20x0, Company Y, issued two-year floating rate loan with interest reset dates on end of year. The expected one-year LIBOR rates are 5%. The one year LIBOR rate on 1 January 20x0 is 10%, which is the same as actual rates.

Approach 1:

EIR equals the current spot interest rates. Carrying amount equals nominal amounts on 31 December 20x0.

Year	Initial carrying amount	Interest expense	Interest paid	Principal paid	Ending gross carrying amount
20x0	1,000	50	50	–	1,000
20x1	1,000	100	100	1,000	0

Approach 2:

EIR = 7.41%, which differs from LIBOR rate of 5%. Interest expense is smoothed over the two years.

Year	Initial carrying amount	Interest expense	Interest paid	Principal paid	Ending gross carrying amount
20x0	1,000	74	50	–	1,024
20x1	1,024	76	100	1,000	0

Revisions to estimated cash flows

IFRS 9 includes specific guidance on the accounting treatment when an entity revises its estimates or payments of cash flows from a financial asset or financial liability. In particular, paragraph B5.4.6 of IFRS 9 requires the entity to adjust the gross carrying amount of the financial asset or amortized cost of a financial liability to reflect actual and revised estimated contractual cash flows.

In order to do that, the entity recalculates the present value of the revised estimated future contractual cash flows using the financial instrument's original effective interest rate. The adjustment is recognized in profit or loss as income or expense.

The IFRS clarifies that such revisions of estimates or payments of cash flows excludes modifications of financial assets for which the accounting treatment is set out in paragraph 5.4.3 to IFRS 9 and changes in estimates of expected credit losses. Illustration 9.10 which is an adaptation of IG.B.26 of the Implementation Guidance to IFRS 9 demonstrates the accounting impact.

page 824

ILLUSTRATION 9.10 Accounting for revisions in estimated cash flows in a debt instrument

Entity Alpha purchases a debt instrument with five years remaining to maturity for its fair value of $1,000 (including transaction costs) on 1 Jan 20x0. The instrument has a contractual par amount of $1,250 and carries fixed interest of 4.7% that is paid annually ($1,250 × 4.7% = $59 per year). The effective interest rate on the debt instrument is 10%. The effects of the impairment provisions of IFRS 9 are ignored for this illustration.

The following amortization table below provides information about the gross carrying amount, interest revenue and cash flows of the debt instrument in each reporting period.

Year	Beginning gross carrying amount	Effective interest income at 10%	Cash flows – cash interest & principal repayment	Ending gross carrying amount
	$	$	$	$
20x0	1,000	100	59	1,041
20x1	1,041	104	59	1,086
20x2	1,086	109	59	1,136
20x3	1,136	113	59	1,190
20x4	1,190	119	1,309*	-
		545	1,545	

* Includes interest revenue of 59 and principal repayment of $1,250.

On 1 January 20X2, Entity Alpha revises its estimate of cash flows. It now expects that 50% of the contractual par amount (i.e. $625) will be prepaid by the issuer at the end of 20x2 and the remaining 50% at the end of 20x4. Accordingly, the cash interest for 20x3 and 20x4 on the remaining contractual amount of $625 would be $30 (4.7%*$625).

In accordance with paragraph B5.4.6 of IFRS 9, Entity Alpha adjusts the gross carrying amount of the debt instrument as at 1 January 20x2 by discounting the amount that Entity Alpha expects to receive in 20x2 and subsequent years using the original effective interest rate of 10%. This results in the new gross carrying amount as at 1 January 20x2 of $1,138 as shown in the revised amortization table below.

Year	Beginning gross carrying amount	Effective interest income at 10%	Cash flows – cash interest & principal repayment	Ending gross carrying amount
	$	$	$	$
20x0	1,000	100	59	1,041
20x1	1,041	104	59	1,086
20x2	1,138 Note 1	114	684 Note 2	568
20x3	568	57	30 Note 3	595
20x4	595	60	655 Note 4	-
		435	1,487	

Explanatory notes:

1. Present value of cash flows in Year 20x2, 20x3 and 20x4 of $684,$30 and $655 respectively at original effective interest rate of 10%
2. Includes 50% repayment of contractual amount of $625 and cash interest of $59
3. Cash interest on remaining contractual amount – 4.7%*$625
4. Includes 50% repayment of contractual amount of $625 and cash interest of $30

The adjustment of $52 ($1,138 − $1,086) between the revised beginning gross carrying value and the previous gross carrying value on 1 January 20x2 is recorded in profit or loss in 20x2. Accordingly, Entity Alpha will pass the following accounting entries.

31/12/20x0	Dr Cash	59	
	Dr Financial asset – debt instrument	41	
	Cr Interest income		100
	Being recognition of interest income using the effective interest method		
31/12/20x1	Dr Cash	59	
	Dr Financial asset – debt instrument	45	
	Cr Interest income		104
	Being recognition of interest income using the effective interest method		
1/1/20x2	Dr Financial asset – debt instrument	52	
	Cr Profit or loss – adjustment for revisions in expected cash flows		52
	Being adjustment to beginning gross carrying value for revisions in expected cash flows		
31/12/20x2	Dr Cash	684	
	Cr Financial asset – debt instrument		570
	Cr Interest income		114
	Being recognition of interest income using the effective interest method and repayment of 50% of contractual amount		
31/12/20x3	Dr Cash	30	
	Dr Financial asset – debt instrument	27	
	Cr Interest income		57
	Being recognition of interest income using the effective interest method		
31/12/20x4	Dr Cash	655	
	Cr Financial asset – debt instrument		595
	Cr Interest income		60
	Being recognition of interest income using the effective interest method and repayment of 50% of contractual amount		

Modifications to financial assets

As opposed to its predecessor standard IAS 39, IFRS 9 introduces new guidance on how an entity should account for financial assets for which the contractual cash flows are modified after renegotiation and such modification does not result in the derecognition of the financial asset in accordance with IFRS 9.

When the entity (holder of the financial instrument) agrees with the issuer of the financial instrument to modify the terms of the financial instrument, the entity must determine if the financial asset should be derecognized. If the conclusion of the assessment is such that the entity does not derecognize the financial asset, paragraph 5.4.3 of IFRS 9 will apply.

page 826

In a nutshell, the accounting treatment is similar to the scenario where the entity revises its expectation of future cash flows as discussed above. Specifically, the entity is required to recalculate the gross carrying value of the financial asset and any modification gain or loss is recognized in profit or loss. The gross carrying amount of the financial asset is recalculated as the present value of the modified contractual cash flows, discounted at the financial asset's original effective interest rate. The modification gain or loss is the difference between the original gross carrying amount and the recalculated gross carrying amount. Any costs or fees incurred in connection with the modification are adjusted against the carrying amount of the modified financial asset and are amortized over the remaining term of the modified financial asset.

On the other hand, if the modification of a financial asset results in the derecognition of the existing financial asset and a recognition of the modified financial asset, the modified asset is considered a new financial asset for the purposes of IFRS 9 (Paragraph B5.5.25 of IFRS 9). The date of the modification is treated as the date of initial

recognition for that financial asset in applying the impairment requirements to the modified financial asset. This typically means that the entity will measure the loss allowance at an amount equal to 12-month expected credit losses until the requirements for the recognition of lifetime expected credit losses are met[20].

MEASUREMENT AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

Debt instrument

A debt instrument is measured at fair value through other comprehensive income (FVOCI) if both conditions are met:

1. The business model's objective of holding the assets is to collect contractual cash flows and for sale.
2. The contractual terms of the financial assets give payments of only principal and interest on specified dates.

The FVOCI model aims to provide amortized cost information in profit or loss and fair value carrying amount in the statement of financial position for financial assets in this category.

Interest income is recognized in profit or loss based on the effective interest method. Expected credit losses and reversals are recognized in profit or loss. The cumulative gain or loss in other comprehensive income is recycled from equity to profit or loss upon derecognition of the financial asset (B5.7.1A of IFRS 9). Consistent with presenting the amortized cost information in the FVOCI model, the foreign exchange differences on the amortized cost (i.e. based on effective interest method and adjusted for impairment) are recognized in profit or loss. Other foreign exchange differences are recognized in other comprehensive income with other fair value changes (IFRS 9 paragraph B5.7.2A). The entity may make an irrevocable election for equity instruments in the "fair value through profit/loss" (FVTPL) category to be measured at FVOCI. For purposes of impairment, the entity shall apply the impairment requirements in IFRS 9 for the recognition and measurement of the loan loss allowance. However, the loss allowance is recognized in other comprehensive income and does not reduce the carrying amount of the financial asset in the statement of financial position (Paragraph 5.5.2 of IFRS 9). This effectively means that the financial asset is carried at fair value on the statement of financial position (refer to Illustrations 9.11 and 9.12 for the accounting entries).

page 827

ILLUSTRATION 9.11 Measurement at fair value through other comprehensive income

The relevant particulars are summarized as follows:

Investment cost	$102,700
Principal at maturity	$100,000
Premium on purchase	$ 2,700
Coupon rate	4.5%
Cash interest income per annum	$ 4,500
Years to maturity from inception	6.5 years
Effective interest rate	4.02%
Cash interest income for half-year 20x4	$ 2,250
Fair value on 31 December 20x4	$104,000

For this illustration, the impairment requirements under IFRS 9 are not illustrated.

The following schedule shows the calculation of the effective interest income and the amortization of the bond premium.

Date	Cash interest 4.5%	Effective interest 4.02%	Amortized premium	Unamortized premium	Principal amount	Ending gross carrying amount
1 July 20x4				$2,700	$100,000	$102,700
31 December 20x4	$ 2,250	$ 2,064	$ 186	2,514	100,000	102,514
31 December 20x5	4,500	4,121	379	2,135	100,000	102,135
31 December 20x6	4,500	4,106	394	1,741	100,000	101,741
31 December 20x7	4,500	4,090	410	1,331	100,000	101,331
31 December 20x8	4,500	4,074	426	905	100,000	100,905
31 December 20x9	4,500	4,056	444	461	100,000	100,461
31 December 20x10	4,500	4,039	461	0	100,000	100,000
	$29,250	$26,550	$2,700			

The journal entries are as follows:

1 July 20x4	Dr Investment in debt security	102,700	
	Cr Cash		102,700
	Purchase of investment.		
31 Dec 20x4	Dr Cash	2,250	
	Cr Interest Income		2,064
	Cr Investment in debt security		186
	Recognition of interest income using effective interest method		

page 828

Dr Investment in debt security	1,486	
Cr Fair value reserve (OCI)		1,486
Fair value adjustment to other comprehensive income (deferred gain): $104,000 – $102,514		

ILLUSTRATION 9.12 Accounting for a foreign-currency-denominated debt security classified as FVOCI

Encore Company, whose functional currency is the dollar, purchased a bond for FC 9,567,052 on 31 December 20x1. The bond, which had a face value of FC 10,000,000, carried a coupon rate of 4% per annum and matured on 31 December 20x6. At the date of purchase of the bond, the effective interest rate applicable to the bond was 5% per annum. Interest payments were made annually on 31 December. Encore Company classified the bond as FVOCI

because the business model was to collect contractual cash flows and for sale. The fair value of the bond on 31 December 20x2 was FC 9,820,624. The relevant exchange rates are as follows:

31 December 20x1	FC 1 = $1.80
31 December 20x2	FC 1 = $1.70
Average rate for 20x2	FC 1 = $1.75

On 31 December 20x1, Encore recorded the following journal entry:

31 Dec 20x1	Dr Bond (FVOCI)	17,220,693	
	Cr Cash		17,220,693
	Purchase of FC-denominated bond: 9,567,052× 1.80		

Since the effective interest method must be used to determine interest income on FVOCI bond, an amortization schedule must be prepared to distinguish the implicit discount on the FVOCI bond at inception. The following table shows the amortization schedule for the discount on the bond.

Date	Cash interest at 4%	Effective interest at 5%	Amortization of bond discount	Unamortized bond discount	Carrying value of bond
				FC 432,948	FC 9,567,052
31 December 20x2	FC 400,000	FC 478,353	FC 78,353	354,595	9,645,405
31 December 20x3	400,000	482,270	82,270	272,325	9,727,675
31 December 20x4	400,000	486,384	86,384	185,941	9,814,059
31 December 20x5	400,000	490,703	90,703	95,238	9,904,762
31 December 20x6	400,000	495,238	95,238	0	10,000,000

At 31 December 20x2, the fair value of the bond was FC 9,820,624.

Fair value of FVOCI (FC 9,820,624 × 1.7)	$16,695,060
Amortized cost at 31 December 20x2 (FC 9,645,405 × 1.7)	16,397,188
Fair value adjustment (to equity)	$ 297,872

The exchange difference on the bond is calculated as follows:

Amortized cost at 31 December 20x2	$16,397,188
Carrying value of bond at 31 December 20x1	(17,220,693)
Amortized discount during 20x2 (FC 78,353 × 1.75)	(137,118)
Exchange loss on bond	$ (960,623)
Add: Exchange loss on interest received [(FC 400,000 x (1.7 – 1.75)]	(20,000)
Exchange loss for 20x2	$ (980,623)

In this example, the total change in fair value of $525,633 ($16,695,060 – $17,220,693) is accounted as follows:

1. Exchange loss of $960,623;
2. Fair value gain to equity of $297,872;
3. Amortization of discount (interest revenue) of $137,118.

The journal entries for 31 December 20x2 are shown below:

31 Dec 20x2	Dr Cash (FC 400,000 × 1.7)	680,000	
	Dr Exchange loss	980.623	
	Cr Interest revenue (FC 478,353 × 1.75)		837,118
	Cr Equity		297,872
	Cr Bond (FVOCI) ($16,695,060 – $17,220,693)		525,633
	Gains and losses on FVOCI		

Alternatively,

31 Dec 20x2	Dr Cash (FC 400,000 × 1.7)	680,000	
	Dr Exchange loss on interest	20,000	
	Cr Interest revenue (FC 400,000 × 1.75)		700,000
	Receipt of interest revenue		
	Dr Bond (FVOCI)	137,118	
	Cr Interest revenue (amortized discount: FC 78,353 × 1.75)		137,118
	Amortization of discount		
	Dr Exchange loss	960,623	
	Cr Bond (FVOCI)		662,751
	Cr Equity		297,872
	Fair value adjustment taken to equity		

Explanatory note:

Exchange loss on interest arose because interest income is translated at average rate but cash receipt of interest is translated at rate on date of receipt. Fair value change on FVOCI bond is taken to fair value adjustment reserve. However, the exchange loss arising from the movement in the FVOCI bond is taken to income statement because the bond is a monetary asset.

Equity Securities

Equity securities that are not held for trading and not contingent consideration recognized by the acquirer in a business combination for which IFRS 3 applies can be measured at FVOCI if the entity makes the FVOCI election. The cumulative gain or loss in other comprehensive income cannot be recycled to profit or loss for FVOCI equity securities. However, the entity may transfer the cumulative gains or losses within equity. (B5.7.1 of IFRS 9) Foreign exchange differences arising from the equity instrument is presented in other comprehensive income as equity instruments are not monetary items. Dividend income on such investments are recognized in profit or loss unless it represents a recovery of part of the cost of investment. The impairment requirements under IFRS 9 are effectively not

applicable for equity instruments measured at FVOCI as the cumulative gain or losses accumulated in other comprehensive income are not allowed to be reclassified to profit or loss. Hence, there is no requirement to test equity securities measured at FVOCI for impairment (refer to Illustration 9.13 for accounting entries).

ILLUSTRATION 9.13 Accounting for FVOCI equity securities

On 1 June 20x4, Omega Company purchased 10,000 units of shares in Delta Technology at $2.80 per share. Omega classified the investment as FVOCI. The price of Delta Technology shares rose to $3.50 per share on 31 December 20x4, the financial year-end of Omega. On 31 March 20x5, Omega sold all its shares in Delta Technology at $3.30 per share. The journal entries to record the purchase and sale of Delta Technology shares are as follows:

1 June 20x4	Dr FVOCI Investment	28,000	
	Cr Cash		28,000
	Purchase of FVOCI investment		
31 Dec 20x4	Dr FVOCI Investment	7,000	
	Cr Fair value reserve (OCI)		7,000
	Fair value adjustment to other comprehensive income (deferred gain)		
31 Mar 20x5	Dr Fair value reserve (OCI)	2,000	
	Cr FVOCI Investment		2,000
	Fair value adjustment to equity (deferred gain)		
	Dr Cash	33,000	
	Cr FVOCI investment		33,000
	Sale of FVOCI investment		

Explanatory notes:

Equity investments must be measured at fair values. Cost may be used as an estimate of fair value if there is insufficient recent information to measure fair value or there is a wide range of fair value estimates with cost representing the best estimate within the range. Cost may not be representative of fair value where there are significant changes in performance of the investee versus plans, significant changes in economic environment or market for the products of investee. (Paragraph 5.2.3 and 5.2.4 IFRS 9)

MEASUREMENT AT FAIR VALUE THROUGH PROFIT OR LOSS

A financial asset is measured at fair value through profit or loss (FVTPL) if it is not measured at amortized cost or measured at FVOCI. Financial assets held for trading and managed on fair value basis are classified in FVTPL category.

As the term FVTPL implies, financial assets or financial liabilities are recognized and measured at fair value with changes in fair value taken to profit or loss. There are two sub-categories:[21]

1. Financial instruments that are "held for trading." A financial asset or a financial liability is considered to be held for trading if there is an intention of selling or repurchasing it in the near term, or if it is an item within a portfolio for which there is evidence of a recent pattern of short-term profit-taking; and
2. Any financial asset or financial liability designated as an item in this category at initial recognition. The designation is also referred to as the application of the "fair value option."

Refer to Illustrations 9.14 and 9.15 for accounting journal entries.

ILLUSTRATION 9.14 Measurement at fair value through profit or loss (Debt security)

Refer to details in Illustration 9.8. The journal entries are as follows:

1 July 20x4	Dr Investment in debt equity	102,700	
	Cr Cash		102,700
	Purchase of investment		
31 Dec 20x4	Dr Cash	2,250	
	Cr Interest income		2,250
	Recognition of interest income		
	Dr Investment in debt equity	1,300	
	Cr Gain in fair value		1,300
	Recognition of increase in fair value: $104,000 – $102,700		

The impact on the statement of financial position at 31 December 20x4 follows:

	Amortized Cost	FVOCI	FVTPL
Investment in debt	$100,000		
Unamortized premium	2,514		
At amortized cost	$102,514		
At fair value		$104,000	$104,000

ILLUSTRATION 9.15 Measurement at fair value through profit or loss (Equity security)

On 1 June 20x4, Omega Company purchased 10,000 units of shares in Delta Technology at $2.80 per share. Omega classified the investment as FVTPL. The price of Delta Technology shares rose to $3.50 per share on 31 December

20x4, the financial year-end of Omega. On 31 March 20x5, Omega sold all its shares in Delta Technology at $3.30 per share. The journal entries to record the purchase and sale of Delta Technology shares are as follows:

1 June 20x4	Dr Investment in equity security	28,000	
	Cr Cash		28,000
	Purchase of equity security		
31 Dec 20x4	Dr Investment in equity security	7,000	
	Cr Gain/Loss in fair value		7,000
	Recognition of increase in fair value to profit/loss: ($3.50 – $2.80) × 10,000		
31 Mar 20x5	Dr Gain/loss in fair value	2,000	
	Cr Investment in equity security		2,000
	Recognition of decrease in fair value to profit/loss: ($3.30 – $3.50) × 10,000		
	Dr Cash	33,000	
	Cr Investment in equity security		33,000
	Sale of equity security		

Financial guarantee

A financial guarantee contract is defined as a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payment when due according to the contract terms. The issuer recognizes the financial guarantee at fair value on initial recognition, which is typically the premium received when it first enters into an irrevocable commitment.

After initial recognition, a financial guarantee is subsequently measured at the higher of the loss allowance amount and the amount initially recognized less cumulative income recognized under IFRS 15. The loss allowance is the expected credit loss measured under IFRS 9. If the issuer designates the financial guarantee at FVTPL, the gains/losses on the financial guarantee are recognized in profit or loss. (IFRS 9: 4.2.1, 5.1.1, 5.5.1, 5.5.6, 5.7.9, B2.5)

DERECOGNITION

Financial Asset

IFRS 9 substantially incorporates the requirements of derecognition of financial assets as well as financial liabilities under IAS 39 without any substantive amendment.

Derecognition of a financial asset refers to the removal of the item from the statement of financial position. In the case of a group (a parent company and its subsidiaries), the financial statements of all subsidiaries and special purpose entities are consolidated before a financial asset is derecognized (Paragraph 3.2.1 of IFRS 9). This is to ensure that decisions on the derecognition of a financial asset are based on the consolidated position.

IFRS 9 clarifies that a financial asset may be derecognized in part or in whole. However, if only a part of a financial asset is to be derecognized, one of the following conditions must be met (Paragraph 3.2.2. of IFRS 9):

1. It contains specifically identified cash flows from the financial asset or group of financial assets; or
2. It forms a fully proportionate (pro-rata) share of the cash flows from the financial asset or group of financial assets; or
3. It forms a fully proportionate (pro-rata) share of specifically identified cash flows from the financial asset or group of financial assets.

For example, an interest rate strip involves the transfer of interest cash flows from a debt instrument to another party while the principal cash flows remain with the transferor. The interest cash flows qualify for derecognition as they represent a specifically identified cash flow from the financial asset.

If none of these conditions is met, the financial asset has to be considered for derecognition in its entirety.

When a financial asset is derecognized in its entirety, a gain or loss is recognized in the profit or loss. The gain or loss is the difference between the carrying amount and the sum of the consideration received (including any new asset obtained less any new liability assumed) and any cumulative gain or loss that had been recognized directly in equity. In the case of partial derecognition, the gain or loss to be recognized in the profit or loss is the difference between the carrying amount allocated to the derecognized part and the sum of the consideration received for the derecognized part (including any new asset obtained less any new liability assumed)[22].

Paragraph 3.2.3 to 3.2.6 of IFRS 9 sets out the derecognition criteria. Specifically, a financial asset is derecognized when any one of the following conditions is met:

1. The rights to the cash flows of the asset have expired; or
2. The entity has transferred its rights to receive the cash flows from the asset and substantially all the risks and rewards associated with the asset; or
3. The entity has retained some risks and rewards that are not considered to constitute substantially all the risks and rewards associated with the ownership of the financial asset, and it has not retained control of the asset.

Condition 1 is straightforward. For example, an investment in a bond is derecognized at maturity when the issuer redeems it. As for the derecognition of a financial asset resulting from a transfer of the cash flows from the asset in condition 2, there are two possible situations:

1. The entity has transferred the contractual rights to receive the cash flows from the asset; or
2. The entity retains the contractual rights to receive the cash flows from the asset and at the same time assumes a contractual obligation to transfer the cash flows from the asset to one or more recipients. This contractual obligation is subject to the following conditions:
   (a) The obligation to transfer the cash flows to the recipient(s) is contingent on the entity collecting an equivalent amount from the original financial asset;
   (b) The entity is prohibited from selling or pledging the original financial asset; and
   (c) The entity is not entitled to reinvest the cash flows it collected from the original financial asset and is obligated to promptly remit the cash flows to the recipient(s).

In condition 2, besides transferring the rights to the cash flows from the asset, there should also be a transfer of substantially all the risks and rewards associated with owning the asset in order for the financial asset to be derecognized (Paragraph 3.2.9 of IFRS 9). If the entity retains substantial ownership of risks and rewards, then the financial asset should not be derecognized.

However, it is not all-or-nothing. It is possible that an entity retains a continuing involvement in the transferred asset; for instance, if it has guaranteed the transferred asset or has purchased or written an option on the asset. In such a situation, the concept of control comes into play in condition 3. If the entity has retained control, it continues to recognize the transferred asset to the extent of its "continuing involvement in the transferred asset" (Paragraph 3.2.16 of IFRS 9). If it has not retained control, the entity derecognizes the transferred

page 834

asset. However, it must be emphasized that the entity must first evaluate whether there has been a transfer of substantially all the risks and rewards. Only when there is neither a transfer nor a retention of substantially all the risks and rewards of ownership that control has to be evaluated.

An indication that there has been a transfer of control is when the transferee has the unrestricted ability to sell the entire financial asset to a third party; for example, the sale comes without an option for the seller to repurchase the asset. In such a situation, the transferee assumes control of the asset and the seller derecognizes the asset. Table 9.7 shows some of the common situations where the conditions for derecognition of a financial asset are met.

TABLE 9.7 Common situations for the derecognition of financial assets

Event	Why it qualifies for derecognition
An unconditional sale	There is transfer of substantially all risks and rewards
A sale, together with an option to repurchase at fair value of the asset at the time of repurchase	The seller has transferred substantially all risks and rewards relating to the financial asset. The seller is not obligated to repurchase the financial asset, hence the seller is not exposed to the risk associated with the change in the fair value of the financial asset.
A sale, together with a put option held by the buyer or a call option held by the seller that is deeply out-of-the-money	The seller is unlikely to be exposed to the risk associated with changes in the fair value of the financial asset as it is highly unlikely that the option will become in-the-money before expiry
Transfer of an asset that is readily repurchased in an active market, together with a call option held by the seller that is neither deeply in-the-money nor deeply out-of-the-money	Because the financial asset can be readily purchased in an active market, there is transfer of control

Situations that generally do not qualify for derecognition of a financial asset are shown in Table 9.8.

TABLE 9.8 Situations that do not qualify for derecognition of financial assets

Event	Why it does not qualify for derecognition
A sale with an agreement by the seller to repurchase the same (or substantially the same) asset at a fixed price	There is no transfer of substantial risks and rewards. In substance, it is a financing transaction
A sale, together with a put or call option that is deeply in-the-money	It is highly unlikely that the option will become out-of-the-money before expiry. The seller is therefore highly likely to repurchase the financial asset
A sale of receivables with recourse	The seller continues to retain an interest in the receivables, and is exposed to the risk of default
A securities lending agreement	There is no transfer of substantial risks and rewards

In summary, under IFRS 9, to determine if the assets should be derecognized in the transferor's books, entities need to follow the derecognition criteria in the following order: any substantial transfer of risks and rewards, who has control over the assets and whether the transferor has continuing involvement in the transferred assets. For example, the transferor considers if the assets have been transferred and if so, whether substantial risks and rewards have been transferred. If the answer is in the affirmative, the entity derecognizes the assets. If not, the entity considers if it has retained control of the asset. If the entity has not retained control over the assets, it derecognizes the assets. If the entity still retains control over the assets, the question is whether it has

page 835

continuing involvement with the assets. The portion of the assets which the entity does not have continuing involvement should be derecognized.

Financial Liability

A financial liability (or part of it) can be derecognized only when the borrower's obligations relating to the liability is extinguished i.e. the obligation is fully discharged, cancelled or expired (Paragraph 3.3.1 of IFRS 9). Other situations relating to a financial liability are treated as follows:

1. A replacement of a debt instrument with another debt instrument on substantially different terms[23] or a substantial modification to the terms of an existing financial liability should be treated as an extinguishment of the original financial liability and the recognition of a new financial liability (Paragraph 3.3.2 of IFRS 9).
2. Partial derecognition of a financial liability is permitted, for example, when an entity repurchases or redeems part of a bond. In this case, the entity will allocate the previous carrying amount of the financial liability between the part that continues to be recognized and the part that is derecognized based on the relative fair values of those parts on the date of the repurchase. Any difference between the carrying amount allocated to the part derecognized and the consideration paid, including any non-cash assets transferred or liabilities assumed, for the part derecognized is recognized in profit or loss.

As with financial assets, a gain or loss is reported in the profit or loss upon the derecognition of a financial liability or part of it. The gain or loss is the difference between the carrying amount of the financial liability (or part of it) that has been derecognized and the consideration paid (Paragraph 3.3.3 of IFRS 9).

A financial liability can be derecognized when an entity issues equity to a creditor to extinguish the liability. This is also known as "debt for equity swaps" in practice. The equity instruments issued are consideration paid in accordance with paragraph 3.3.3 of IFRS 9. These equity instruments are measured at fair value unless their measurements are not reliable, in which case they are measured based on the fair value of the liability extinguished. The difference between the fair value of equity issued and carrying amount of financial liability extinguished is recognized in profit or loss. If only part of the liability is extinguished and it is determined that part of the consideration paid relates to a modification to the terms of remaining liability, the fair value of consideration is allocated between liability extinguished and liability retained (IFRIC 19 *Extinguishing Financial Liabilities with Equity Instruments*).

RECLASSIFICATIONS AMONG CATEGORIES

Paragraph 4.4.1 of IFRS 9 requires an entity to reclassify its financial assets when and only when the entity changes its business model for managing those financial assets. It is expected that such changes of business models will be very infrequent. The IFRS states that the change which is determined by the entity's senior management as a consequence of external or internal changes must be significant to the entity's operations and it must be demonstrable to external parties. Accordingly, a change in the business model takes place only when the entity either commences or ceases to perform an activity that is significant to its operations. An example of this would be when the entity has acquired, disposed of or terminated a business line.

Reclassifications between categories (amortized cost, FVOCI or FVTPL) are prospective from the date of reclassification. It should be noted that prior periods are not restated.

It should be noted that only financial assets are required to be reclassified when the entity's business model is changed. Paragraph 4.4.2 states that an entity does not reclassify any financial liability.

The accounting on reclassifications for financial assets is as follows:

1. From amortized cost into FVTPL category, the fair value on the date of reclassification becomes the new carrying value of the financial asset. The difference between the fair value on the reclassification date and amortized cost is recognized in profit or loss (refer to Illustration 9.16 for accounting journal entries).

ILLUSTRATION 9.16 Reclassification from amortized cost into FVTPL

Refer to details in Illustration 9.8. The journal entries are as follows:

1 July 20x4	Dr Investment in debt security	100,000	
	Dr Unamortized premium	2,700	
	Cr Cash		102,700
	Purchase of investment		
31 Dec 20x4	Dr Cash	2,250	
	Cr Interest income		2,250
	Recognition of interest income		
	Dr Interest income/amortized premium	186	
	Cr Unamortized premium		186
	Amortization of premium for half-year		

Assume financial asset is reclassified from amortized cost into FVTPL on 1 January 20x5. Fair value on 1 January 20x5 and 31 December 20x4 is $104,000.

1 Jan 20x5	Dr Investment in debt security	1,486	
	Cr Gain in fair value		1,486
	Recognition of difference between fair value and carrying amount to profit/loss on reclassification date. The difference is $104,000 – ($100,000 + $2,700 – $186)		

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2. From FVTPL into amortized cost category, the fair value at the reclassification date becomes the new gross carrying amount. The effective interest rate is recalculated based on the new gross carrying amount at the date of reclassification..

ILLUSTRATION 9.17 Reclassification from FVTPL into amortized cost

Refer to details in Illustration 9.8.

The journal entries are as follows:

1 July 20x4	Dr Investment in debt security	102,700	

	Cr Cash		102,700
	Purchase of investment		
31 Dec 20x4	Dr Cash	2,250	
	Cr Interest income		2,250
	Recognition of interest income		
	Dr Investment in debt security	1,300	
	Cr Gain in fair value		1,300
	Recognition of increase in fair value: $104,000 – $102,700		

Assume that financial asset is reclassified from FVTPL into amortized cost on 1 January 20x5.

1 Jan 20x5	Dr Unamortized premium	4,000	
	Cr Investment in debt security		4,000
	Reclassification of investment in debt security to unamortized premium to reflect the fair value as the new carrying amount		

Bond Amortization Schedule

Date	Cash interest	Effective interest	Amortized premium	Unamortized premium	Principal amount	Carrying amount	Fair value
	(a)	(b)	(b)–(a)	(c)	(d)	(e)=(c)+(d)	
	5%*(d)	4.232%* (e) at begg					
01/07/20x4						107,000	107,000
31/12/20x4				4,000	100,000	104,000	104,000
31/12/20x5	5,000	4,401	599	3,401	100,000	103,401	108,000
31/12/20x6	5,000	4,376	624	2,777	100,000	102,777	
31/12/20x7	5,000	4,350	650	2,127	100,000	102,127	
31/12/20x8	5,000	4,322	678	1,449	100,000	101,449	
31/12/20x9	5,000	4,293	707	742	100,000	100,742	
31/12/20x10	5,000	4,263	737	0	100,000	100,000	
	32,500	25,500	7,000				

31/12/20x5	Dr Cash	5,000	
	Cr Interest income		4,401
	Cr Unamortized premium		599
	Recognition of interest income using effective interest rate		

3. From amortized cost into FVOCI category, the difference in fair value on the reclassification date and carrying amount is recognized in other comprehensive income. The journal entries are similar to reclassification (a), from amortized costs into FVTPL category, except that the gains in fair value are recognized in other comprehensive income instead of profit or loss.
4. From FVOCI into amortized cost category, financial asset is reclassified at fair value at the date of reclassification. The cumulative gain or loss in other comprehensive income is adjusted against the fair value at the reclassification date. The net amount after adjustment is the new amortized cost. The effective interest rate which was previously determined on initial recognition is not adjusted.

ILLUSTRATION 9.18 Reclassification from FVOCI into amortized cost

Refer to details in Illustration 9.8. The journal entries are as follows:

1 July 20x4	Dr Investment in debt security	102,700	
	Cr Cash		102,700
	Purchase of investment		
31 Dec 20x4	Dr Cash	2,250	
	Cr Interest income		2,064
	Cr Investment in debt security		186
	Recognition of interest income using effective interest method		
	Dr Investment in debt security	1,486	
	Cr Fair value reserve (OCI)		1,486
	Fair value adjustment to other comprehensive income (deferred gain): $104,000 – $102,514. Assume financial asset is reclassified from FVOCI into amortized cost on 1 January 20x5		
1 Jan 20x5	Dr Fair value reserve (OCI)	1,486	
	Cr Investment in debt security		1,486
	Adjust cumulative gain/loss in OCI to investment in debt security.		
	Dr Unamortized premium	2,514	
	Cr Investment in debt security		2,514
	Reclassification of investment in debt security to unamortized premium to reflect the fair value as the new carrying amount		

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5. From FVTPL into FVOCI category, the financial asset continues to be measured at fair value. The fair value at the reclassification date is the new gross carrying amount. The effective interest rate is calculated based on the new gross carrying amount. Subsequent changes in fair value are recognized in other comprehensive income.

6. From FVOCI into FVTPL category, the financial asset continues to be measured at fair value. Cumulative gain or loss recognized previously in other comprehensive income is reclassified to profit or loss as a reclassification adjustment on reclassification date.

ILLUSTRATION 9.19 Reclassification from FVOCI into FVTPL

Refer to details in Illustration 9.8. The journal entries are as follows:

1 July 20x4	Dr Investment in debt security	102,700	
	Cr Cash		102,700
	Purchase of investment		
31 Dec 20x4	Dr Cash	2,250	
	Cr Interest income		2,064
	Cr Investment in debt security		186
	Recognition of interest income using effective interest method		
	Dr Investment in debt security	1,486	
	Cr Fair value reserve (OCI)		1,486
	Fair value adjustment to other comprehensive income (deferred gain): $104,000 – $102,514		

Assume financial asset is reclassified from FVOCI into FVTPL on 1 January 20x5.

1 Jan 20x5	Dr Fair value reserve (OCI)	1,486	
	Cr Gain/Loss in fair value		1,486
	Adjust cumulative gain/loss in OCI to profit/loss as a reclassification adjustment.		

IMPAIRMENT OF FINANCIAL ASSETS

As with the case with other assets, financial assets carry the risk of impairment. Therefore, impairment consideration is necessary for the subsequent measurement of financial assets. Generally all financial instruments with the exception of those measured at fair value with the fair value changes recognized in profit or loss and equity instruments are caught within the scope of the impairment requirements of IFRS 9.

The incurred loss model under IAS 39 was blamed for delaying the recognition of losses and contributing towards the financial crisis. This is because the recognition of impairment loss under this model requires an objective credit loss event. The response from the Board is the expected loss model in IFRS 9.

In the expected loss model, the loss event does not need to be identified. Expected credit loss is estimated based on historical loss experience for similar financial instruments, current conditions, and forecasted collectability of future cash flows. This is an estimate of the probability that a credit loss might occur. The expected credit loss model is applied on financial instruments measured at amortized cost or measured at fair value through other comprehensive income, trade receivables, lease receivables, loan commitments, and financial guarantees.

The loss allowance is measured based on the expected credit losses for both debt instruments held at amortized cost and debt instruments classified as FVOCI. In the latter, the loss allowance is recognized in other comprehensive income and does not reduce the carrying amount (IFRS 9 paragraphs 5.5.1 and 5.5.2.). A simplified approach to measure loss allowance at lifetime expected credit losses can be applied for trade receivables from transactions accounted for under IFRS 15 and for lease receivables accounted for under IAS 17. We will discuss this in further details below.

Expected Credit Losses for Three Categories of Financial Instruments

In essence, the spirit of the expected credit loss model is to recognize expected credit losses tracking the general pattern of deterioration (or improvement) in the credit quality of financial assets. IFRS 9 distinguishes between three categories of financial instruments:

1. Financial instruments that have not deteriorated significantly in credit quality from initial recognition to reporting date, or with low credit risk at reporting date. Twelve-month expected credit losses are recognized. Interest revenue is calculated on the gross carrying amount of the asset using the effective interest rate.
2. Financial instruments that deteriorated significantly in credit quality from initial recognition to reporting date (but not with low credit risk at reporting date). However, there is no objective evidence of a credit loss event. Lifetime expected credit losses are recognized. Interest revenue is calculated on the gross carrying amount of the asset.
3. Financial instruments with objective evidence of impairment on reporting date. Lifetime expected credit losses are recognized. Interest revenue is calculated on the net carrying amount of the asset.

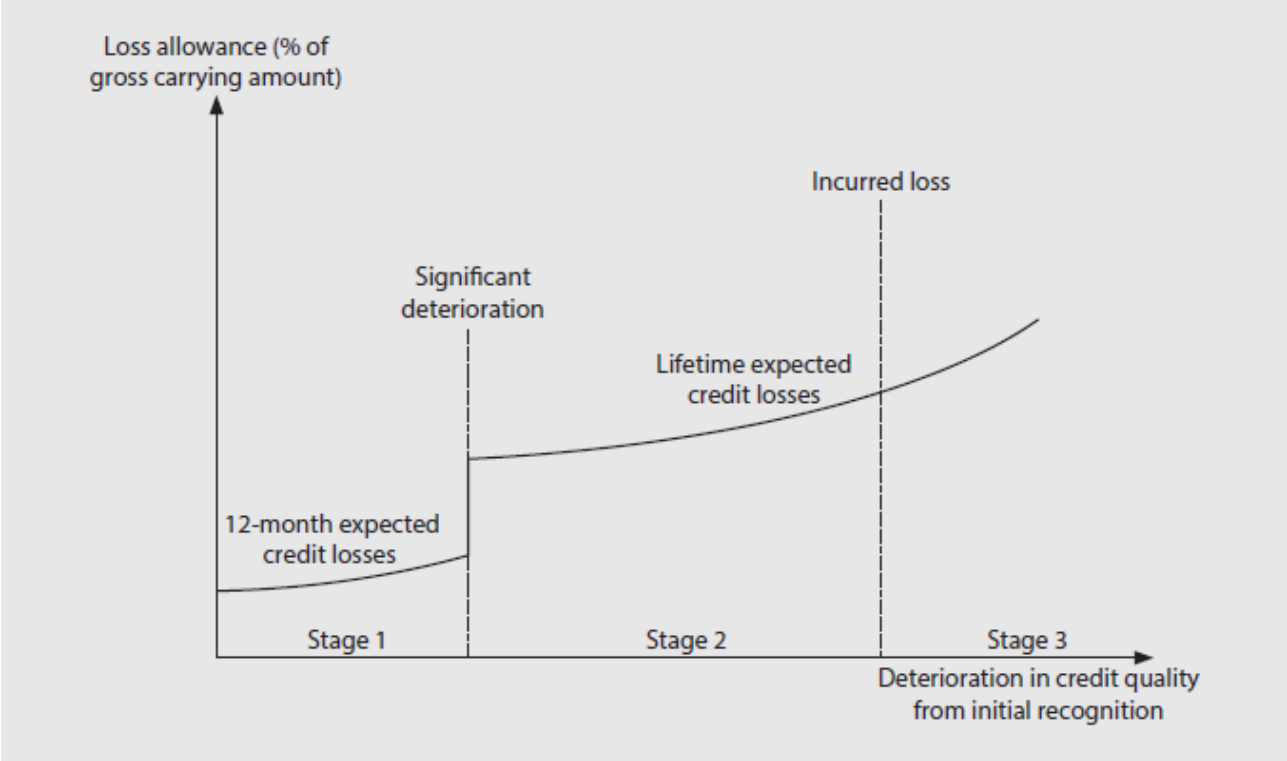
The credit risk is low if there is little likelihood of borrowers defaulting on its contractual cash flow obligations. The assessment of whether credit quality has deteriorated significantly depends on whether the lifetime probability of default has increased, and not the change in expected credit losses. The probability of default over the remaining life and not the absolute probability has to be assessed. For example, if the probability of default over remaining ten years is the same as that over remaining five years, the credit risk is considered to have increased.

The change in credit risk is the change in probability of default over the initial probability of default. That means a 2% change in probability of default for an asset with initial probability of 5% is more significant than an asset with initial probability of 20%. The flowchart in Figure 9.6 illustrates how the expected credit losses are determined based on observable trigger events.

These three categories above are not mutually exclusive. Viewed from a different perspective, the three categories could be seen as increasing stages of deterioration of the credit quality of the financial asset as it moves from one to three. Regardless of how it is viewed, the amount of expected credit loss recognized as a loan allowance under IFRS 9 depends on the extent to which the credit quality of the financial asset has deteriorated since initial recognition.

Figure 9.6 which is adapted from an illustration in an IASB publication entitled Snapshot: Financial Instruments Expected Credit Losses Exposure Draft in 2013 provides a pictorial view on the accounting for expected credit losses under the different stages.

FIGURE 9.6 Accounting for expected credit losses under IFRS 9



For the purpose of recognizing expected credit losses under IFRS 9, there are 2 approaches[24] namely the general and the simplified approach. Under the general approach, impairment is measured at either 12-month expected credit loss or lifetime expected credit losses. The simplified approach applies only to trade receivables and contract assets that result from transactions in the scope of IFRS 15 *Revenue from Contracts with Customers* and lease receivables that result from transactions in the scope of IAS 17 *Leases*. Under this approach, the entity will measure the impairment loss allowance based on the lifetime expected credit losses.

GENERAL APPROACH

Loss allowance: 12-month or lifetime expected credit losses

Under the general approach, an entity is required to recognize a loss allowance for expected credit losses on a financial asset that is measured at amortized cost or fair value through other comprehensive income, a lease receivable, a contract asset or a loan commitment and a financial guarantee contract at each reporting date in accordance with paragraph 5.1.1 of IFRS 9.

If at the reporting date, the credit risk on a financial instrument has not increased significantly since its initial recognition, the entity is required to measure the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses (Paragraph 5.5.5 of IFRS 9). With the exception of the loss allowance for financial assets measured at fair value through other comprehensive income[25], the loss allowance established is set off against the gross carrying value of the financial asset. IFRS 9 does not require the entity to present the loss allowance as a separate line item in the statement of financial position. What this implies is that the carrying value of the financial asset in the statement of financial position is stated net of the loss allowance. The corresponding debit for the loss is

recognized as an impairment loss in the profit or loss in the reporting period. The following illustrations demonstrate the accounting treatment for the loss allowance for a financial asset carried at amortized cost and at fair value through other comprehensive income respectively.

ILLUSTRATION 9.20 Accounting for the loss allowance under IFRS 9 for bond carried at amortized cost

Using the same fact pattern in Illustration 9.8, assume now that the bond is not purchased or originated credit impaired. As at 31 December 20x4, the entity calculates the loss allowance based on 12-month expected credit loss as there were no significant increases in expected credit losses since the initial recognition on 1 July 2014. The 12-month expected credit losses as at 31 December 20x4 amounted to $2,000.

Analysis

In this case, in addition to the accounting entries recognized on 31 December 20x4 for the recognition and amortization of the bond premium, the entity will recognize a loss allowance as at 31 December 20x4 via the following accounting entry:

Dr Impairment loss (profit or loss)	2,000	
Cr Loss allowance for bond		2,000
Being 12-month expected credit loss recognized for the bond		

Therefore, the amortized cost of the bond as at 31 December 20x4 is calculated as follows:

	$
Gross carrying value as at 31 December 20x4	102,514
Less: Loss allowance	(2,000)
Amortized cost as at 31 December 20x4	100,514

As the bond is carried at amortized cost, the loan allowance is set off against the carrying value of the bond in the statement of financial position i.e. the amount of $100, 514 will be presented on the statement of financial position itself.

ILLUSTRATION 9.21 Accounting for the loss allowance under IFRS 9 for bond carried at fair value through other comprehensive income

Using the same fact pattern in Illustration 9.11, assume now that the bond is not purchased or originated credit impaired. As at 31 December 20x4, the entity calculates the loss allowance based on 12-month expected credit loss as there were no significant increases in expected credit losses since the initial recognition on 1 July 2014. The 12-month expected credit losses as at 31 December 20x4 amounted to $2,000.

Analysis

In this case, in addition to the accounting entries recognized on 31 December 20x4 for the recognition and amortization of the bond premium, the entity will recognize a loss allowance as at 31 December 20x4 via the

following accounting entry:

Dr Impairment loss (profit or loss)	2,000	
Cr Fair value reserve (OCI)		2,000
Being 12-month expected credit loss recognized for the bond		

As the bond is carried at fair value through other comprehensive income, the loan allowance is recognized in other comprehensive income and does not reduce the carrying value of the debt security in the statement of financial position. In the statement of financial position, the bond will be carried at its fair value of $104,000.

The above requirement is different from that under IAS 39. Previously, IAS 39 requires an entity to recognize a loss allowance when there is an objective evidence of impairment i.e. when impairment occurs. IFRS 9, on the other hand requires the loss allowance to be recognized at the next reporting date after initial recognition based on the 12-month expected losses as long as the credit quality of the financial asset did not deteriorate significantly since initial recognition. In effect, a day-one impairment loss is recognized on initial recognition of a new financial asset albeit IFRS 9 does not require the loss to be recognized on initial recognition but instead at the next reporting date.

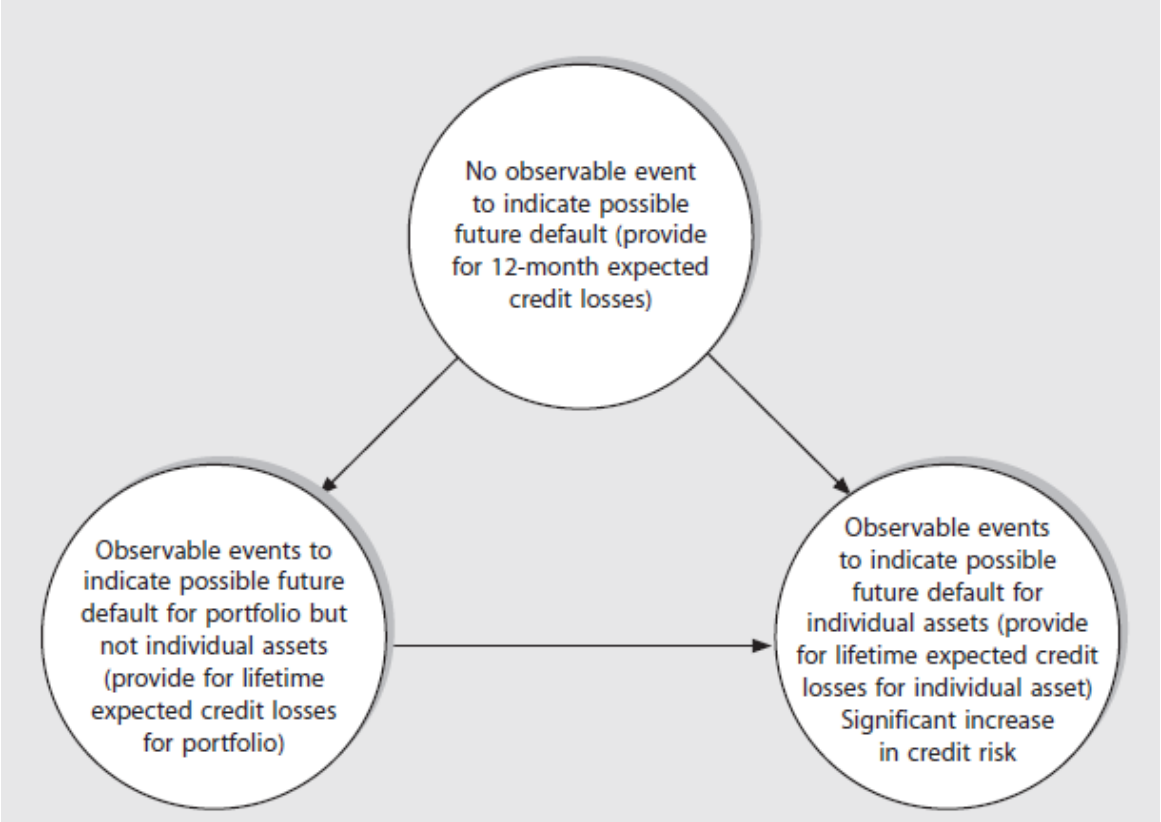
However, if the credit risk on that financial instrument has increased significantly since initial recognition, the entity is required to measure the loss allowance at an amount equal to the lifetime expected credit losses (Paragraph 5.5.3 of IFRS 9). It should be noted that a significant increase in the credit risk of a financial instrument does not in itself mean that the financial asset is credit impaired.

The reverse can also happen. For instance, the credit quality for the financial instrument may improve (i.e. the credit risk has decreased) in subsequent reporting periods due to the occurrence of certain events. In this case, the entity would have measured the loss allowance in the previous reporting period based on lifetime expected credit losses. As the credit quality has improved in the current reporting period, IFRS 9 allows the entity to measure the loss allowance for the current reporting period based on the 12-month expected credit losses. The amount of reversal that is required to adjust the loss allowance from the last reporting date to the current reporting date is recognized in profit or loss as impairment gain in accordance with paragraph 5.5.8 of IFRS 9.

The implication arising from the above requirements in IFRS 9 effectively means that the entity has to track the movement of the credit quality of the financial assets at each reporting date from initial recognition and measure the loss allowance accordingly depending on whether the credit risk of the instrument has increased or decreased.

We will discuss in more details how the 12-month credit losses and lifetime credit losses is measured below. A flowchart that shows how the expected credit losses are measured is shown in Figure 9.7.

FIGURE 9.7 Flowchart of expected credit losses in IFRS 9



Significant Increase in Credit Risk

The assessment of significant increase in credit risk is made either on an individual basis or on a collective basis. Collective basis is possible when the financial assets in the group have shared risk characteristics. The risk characteristics include instrument type, credit risk ratings, collateral type, origination date, remaining term to maturity, industry, geographical location of borrower, and the value of collateral. The assessment should consider the following factors:

1. Significant changes in external market indicators of credit risk such as credit spread, credit default swap prices, length of time the fair values are below amortized cost;
2. Significant change in financial instrument's credit rating (external or internal for either the financial instrument or the borrower);
3. Changes in rates or terms if the financial instruments are newly issued such as more stringent covenants;
4. Existing or expected changes in business, regulatory and economic conditions that would cause a decline in the ability of borrower to meet its debt obligations;
5. Credit deterioration in other financial instruments of the same borrower;
6. Significant change in quality of the financial guarantee provided by a 100% shareholder who can prevent default by the borrower;
7. Significant reductions in financial support or credit enhancement from the parent entity or another affiliate;
8. Significant changes in expected payment behavior or credit risk management of the borrower; and
9. Past-due information (there is a rebuttable presumption that significant increase in credit risk has occurred when contractual payments are more than 30 days past due).

page 845

As mentioned above, when assessing whether credit risk on a financial instrument has increased significantly since initial recognition, IFRS 9 requires an entity to use the change in the risk of a default occurring over the expected life

of the financial instrument instead of the change in the amount of expected credit losses. To do this, the entity compares the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of initial recognition and considers all reasonable and supportable information that is indicative of significant increases in credit risk since initial recognition (Paragraph 5.5.9 of IFRS 9).

IFRS 9 further clarifies that the entity cannot rely solely on past due information if reasonable and supportable forward-looking information is available without undue cost or effort. Qualitative or non-statistical quantitative information and/or information from statistical models or credit rating processes may be considered.

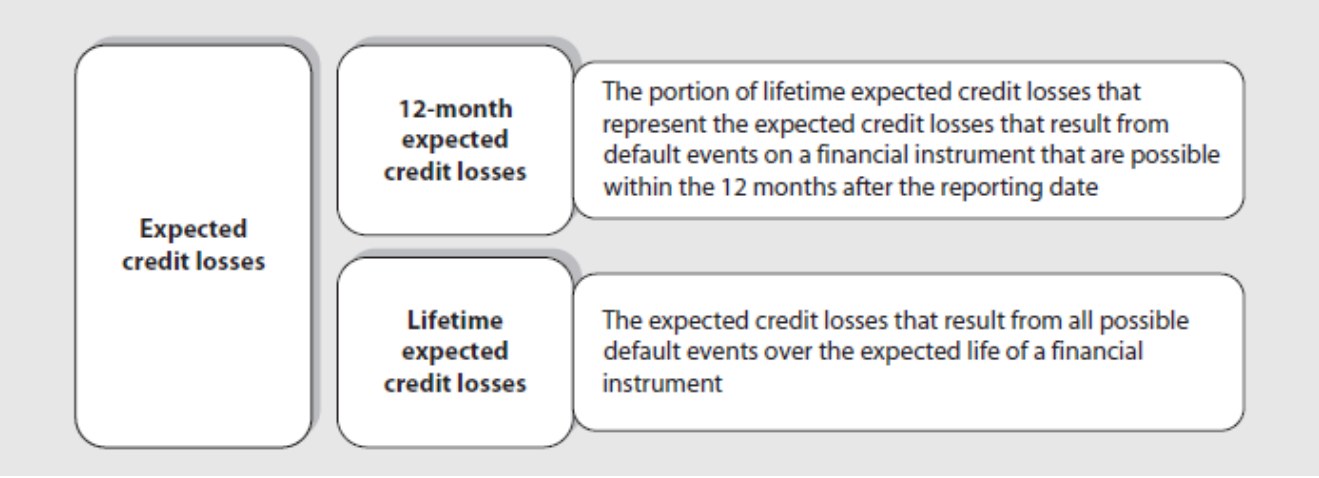
The IFRS Standard also offers some practical expedient to guide the assessment of whether credit risk has increased significantly. An entity may assume that credit risk has not increased significantly since initial recognition if the financial instrument has low credit risk[26] at the reporting date. Included in IFRS 9 is also a rebuttable presumption that credit risk of a financial instrument has increased significantly since initial recognition when the contractual payments are more than 30 days past due.

MEASUREMENT OF EXPECTED CREDIT LOSSES

Paragraph B5.5.28 of IFRS 9 explains that expected credit losses are a probability-weighted estimate of credit losses over the expected life of the financial instrument. Credit losses refers to the present value of all cash shortfalls. This is essentially the difference between the cash flows that are due to an entity in accordance with the contract and the cash flows that the entity expects to receive. IFRS 9 clarifies that a credit loss arises even if the entity expects to be paid in full but at a later date from when the amount is contractually due. This is because expected credit losses consider both the amount and timing of payments.

As discussed above, IFRS 9 requires an entity to recognize either a 12-month expected credit losses or lifetime credit losses at the reporting date depending on whether the credit risk on a financial instrument has increased significantly since its initial recognition as at that date. Figure 9.8 shows the definition of the two types of credit losses.

FIGURE 9.8 12-month versus lifetime expected credit losses



Insofar as measuring expected credit losses is concerned, IFRS 9 does not prescribe any specific methodology for measuring the losses. Paragraph B5.5.12 clarifies that various approaches may be used when the entity is assessing

whether the credit risk on a financial instrument has increased significantly since initial recognition or when measuring expected credit losses. Different approaches may be applied for different financial instruments. When measuring expected credit losses, the maximum period to consider is the maximum contractual period over which the entity is exposed to credit risk and not a longer period, even if that longer period is consistent with business practice. This maximum contractual period would include extension options.

Notwithstanding the above, IFRS 9 did lay down certain principles that must be adhered to in measuring expected credit losses. In particular, the expected credit losses should be measured in a way that reflects:

(a) an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes;

(b) the time value of money; and

(c) reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions.

Example 1: Expected credit loss calculation using PD (probability of default) approach

Bank X gives a loan of $1,000,000 to borrower Y. The probability of Y defaulting in the next one year is 1%. This is based on an assessment of Y's credit worthiness and the macroeconomic environment. Loss given default is estimated at 50%. Loss allowance for the 12-month expected credit loss is

$$1\% \times 50\% \times \$1{,}000{,}000 = \$5{,}000$$

Example 2: Expected credit loss for highly collateralized debt

Bank X originates a loan of $100,000,000 to borrower Z to finance the purchase of a factory. The loan is collateralized by the factory with a value of $200,000,000. Thus, the loan to value ratio is 50%. At initial recognition, the loss allowance is based on 12-month expected credit loss.

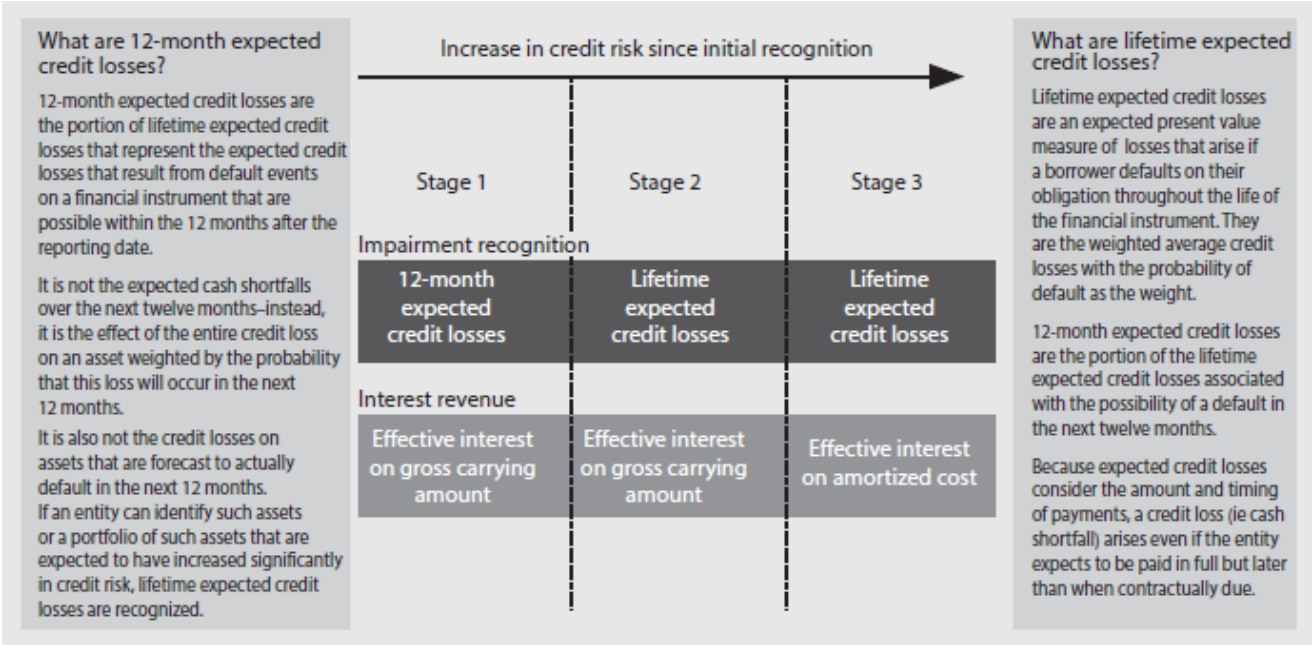
The factory's products face severe competitive pressures over time. At the reporting date, the free cash flows from the factory have declined drastically such that the factory's value has dropped to $150,000,000. Loan to value ratio has increased to 67%.

This decline in factory value significantly increases the credit risk such that the credit risk of Z is considered as high. At reporting date, the loss allowance is based on the lifetime expected credit loss. This increase in estimation of credit loss is based on the increase in probability of default, even if there is no increase in loss given default (recovery rate).

INTERACTION BETWEEN INTEREST REVENUE COMPUTATION AND RECOGNITION OF EXPECTED CREDIT LOSSES

As discussed above, IFRS 9 requires interest revenue on financial assets carried at amortized cost and fair value through other comprehensive income to be calculated using the effective interest method. Depending on which stage the financial asset is in for the purpose of measurement of expected credit losses, the interest revenue is computed differently. Figure 9.9 which is reproduced from the IASB's project summary on IFRS 9 explains the interaction.

FIGURE 9.9 Interaction between interest income recognition and expected credit losses recognition between the different stages



If the financial asset is in Stage 1 at the reporting date, the credit risk on that financial asset has not increased significantly since the last reporting date. In this case, the entity is required under paragraph 5.5.5 of IFRS 9 to measure the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses. In terms of measuring interest revenue, paragraph 5.4.1 of IFRS 9 states that the interest revenue is calculated by applying the effective interest rate on the financial asset to the gross carrying amount of the financial asset for subsequent periods. In other words, the loan allowance is excluded in the computation of interest revenue for financial assets under Stage 1. When the financial asset is in Stage 2 at the reporting date (i.e. a significant deterioration of credit risk has occurred since the last reporting date), IFRS 9 requires the entity to recognize lifetime expected credit losses at the reporting date. For interest revenue calculation, the IFRS Standard also requires interest revenue to be calculated based on the gross carrying amount of the financial asset. Hence, under Stage 1 and Stage 2, there is essentially a full decoupling between interest revenue recognition and impairment recognition. In other words, both interest revenue and expected credit losses are measured and recognized separately.

page 848

Under Stage 3, the financial asset is credit impaired. Similarly, IFRS 9 requires the entity to recognize lifetime expected credit losses at the reporting date. For the purposes of interest revenue calculation, paragraph 5.4.1(b) of IFRS 9 requires the entity to apply the effective interest rate to the amortized cost of the financial asset (i.e. gross carrying amount adjusted for loss allowance) for subsequent periods. Hence, interest recognition and impairment recognition are coupled in Stage 3. It should also be noted that paragraph 5.4.2 of IFRS 9 requires the interest revenue computation for a previously credit impaired financial asset to revert to gross basis if the asset is no longer credit impaired at the reporting date[27].

In the next two comprehensive worked examples, the interaction between the computation of the interest using the effective interest rate method and the impairment requirements under IFRS 9 is illustrated.

ILLUSTRATION 9.22 Interaction between interest income computation and expected credit losses as financial instrument transfers from Stage 1 to Stage 2

The entity purchased a bond of principal $8 million, at an initial cost of $8.6 million on 1 January 20x1. The coupon interest was 5%, and maturity date was 31 December 20x5. The bond had a strong Standard & Poor credit rating of AA on 1 January 20x1. As at 31 December 20x1, the credit rating remained unchanged at AA rating. On this basis, the entity determined that there was no significant increase in credit risk since initial recognition on 1 January 20x1.

Accordingly, expected credit losses is measured and recognized at an amount equal to 12-month expected credit losses which the entity has calculated to be $560 as at 31 December 20x1.

In the year 20x2, due to the economic downturn, the issuer of the bond experienced significant decline in revenues and huge losses were sustained. Competitive pressure was mounting and future economic prospects deteriorated. In view of this, Standard & Poor reduced the credit rating of the bond from AA to BB. On 31 December 20x2, the entity assessed and determined that there was a significant increase in the credit risk since 31 December 20x1. However, the bond is not credit impaired. Consequently, the entity measures expected credit losses at an amount equal to lifetime expected credit losses. The lifetime expected credit losses are as follows:

Year ended	Lifetime expected credit losses ($)
31 December 20x2	530,558
31 December 20x3	548,311
31 December 20x4	566,658
31 December 20x5	585,619

The fair value of the bond as at 31 December 20x1 and 31 December 20x2 is $8,290,392, and $7,650,000 respectively.

Prepare the amortization table and the accounting entries for the year ended 31 December 20x1 to 20x3 assuming that the entity classifies the bond as either an amortized cost financial instrument or at fair value through other comprehensive income.

Analysis

Prepare amortization table

The following table shows amortization of the bond premium, recognition of effective interest income and recognition of expected credit losses.

Date	Cash interest 5%	Effective interest 3.35%	Amortization	Unamortized premium	Gross carrying amount	Loss allowance	Net carrying amount
1 Jan 20x1				600,000	8,600,000	–	8,600,000
31 Dec 20x1	400,000	287,765	112,235	487,765	8,487,765	560	8,487,205
31 Dec 20x2	400,000	284,009	115,991	371,774	8,371,774	530,558	7,841,216
31 Dec 20x3	400,000	280,128	119,872	251,902	8,251,902	548,311	7,703,591
31 Dec 20x4	400,000	276,117	123,883	128,019	8,128,019	566,658	7,561,361
31 Dec 20x5	400,000	271,981	128,019	–	8,000,000	585,619	7,414,381
	2,000,000	1,400,000	600,000				

Explanatory note:

1. The above interest revenue is calculated by applying the effective interest rate on the gross carrying amount of the bond (i.e. without deduction of the loan loss allowance) in both Stages 1 and 2. In other words, there is a complete de-coupling between effective interest recognition and impairment recognition in these two stages. An entity is only required to calculate interest revenue by applying the effective interest rate to the amortized

cost (i.e. gross carrying value net of loss allowance) as opposed to gross carrying value only when the financial asset is credit impaired.

Prepare accounting entries

The journal entries to record the bond transaction in the entity's book depending on whether the bond is accounted for at amortized cost or as a fair value through other comprehensive income financial asset are as follows:

	Amortized Cost		FVOCI	
Year ended 31 Dec 20x1				
Dr Bonds	8,000,000		8,600,000	
Dr Unamortized premium	600,000		–	
Cr Cash		8,600,000		8,600,000
Initial recognition of bonds				

	Amortized Cost		FVOCI	
Dr Cash	400,000		400,000	
Cr Unamortized premium/Bonds		112,235		112,235
Cr Interest income (P/L)		287,765		287,765
Effective interest income for 20x1				
Dr Impairment loss (P/L)	560		560	
Cr Loan allowance/OCI		560		560
Recognition of 12-month expected credit loss				
Dr OCI	–		197,373	
Cr Bonds		–		197,373
Fair value change for year ended 31 December 20x1 taken to OCI [$8,290,392 – ($8,600,000 – $112,235)]				
Year ended 31 Dec 20x2				
Dr Cash	400,000		400,000	
Cr Unamortized premium/Bonds		115,991		115,991
Cr Interest income (P/L)		284,009		284,009
Effective interest income for 20x2				
Dr Impairment loss (P/L)	529,998		529,998	
Cr Loan allowance/OCI		529,998		529,998
Recognition of lifetime expected credit loss				
Dr OCI	–		524,401	
Cr Bonds		–		524,401
Fair value change for year ended 31 December 20x2 taken to OCI [$7,650,000 – [$8,290,392 – $115,991)]				

ILLUSTRATION 9.23 Interaction between interest income computation and expected credit losses as financial instrument transfers from Stage 1 to Stage 3

The entity purchased a bond of principal $8 million, at an initial cost of $8.6 million on 1 January 20x1. The coupon interest was 5%, and maturity date was 31 December 20x5. The bond had a strong Standard & Poor credit rating of AA on 1 January 20x1. The credit rating remained at AA on 31 December 20x1. On this basis, the entity determined that there was no significant increase in credit risk since initial recognition on 1 January 20x1. Accordingly, expected credit losses is measured and recognized at an amount equal to 12-month expected credit losses which the entity has calculated to be $560 as at 31 December 20x1. The market price of the bond at the time of closing of the stock exchange on 31 December 20x1 was $8,290,392.

In 20x2, the issuer of the bond announced that it faced severe cash flow problems that threatened its solvency. Shortly after paying the interest for 20x2, the issuer announced that it filed a petition for a financial reorganization under Chapter 11 United States Bankruptcy Code on 31 December 20x2. The share price of the issuer plummeted and the credit spreads of the bond widened significantly. Standard & Poor downgraded the rating of the bond four times within the year 20x2 to B. On 31 December 20x2, the entity assessed that the bond is credit impaired. Accordingly, lifetime expected credit losses is measured and recognized. The entity estimated that $500,000 of the principal, and no interest would be recoverable. The market price of the bond at the time of closing of the stock exchange on 31 December 20x2 and 20x3 was $450,000 and $320,000.

Prepare the effective interest amortization table and the accounting entries for the year ended 31 December 20x1 to 20x2 assuming that the entity classifies the bond as either an amortized cost financial instrument or at fair value through other comprehensive income.

Analysis

Compute the gross carrying amount (i.e. before loan allowance), amortized cost as at 31 December 20x1 and effective interest for the year ended 31 December 20x1 and 31 December 20x2.

The EIR computed for the bond on inception is 3.35%.

Date	Cash interest 5%	Effective interest 3.35%	Amortization	Unamortized premium	Gross carrying amount
1 Jan 20x1				600,000	8,600,000
31 Dec 20x1	400,000	287,765	112,235	487,765	8,487,765
31 Dec 20x2	400,000	284,009	115,991	371,774	8,371,774

12-month expected credit loss = $560

Therefore,

Amortized cost as at 31 December 20x1	=	Gross carrying value	-	Loss allowance
	=	8,487,765	-	560
	=	8,487,205		

Compute the life-time expected credit losses and the amortized cost as at 31 December 20x2 when the financial asset is credit-impaired.

	20x3	20x4	20x5
Expected lifetime cash shortfalls	400,000	400,000	7,900,000

Lifetime expected credit losses as at 31 December 20x2	=	Present value of expected lifetime cash shortfalls at EIR of 3.35%
	=	7,918,789

Therefore,

Amortized cost as at 31 December 20x2 (Note 1)	=	Gross carrying value	-	Loss allowance
	=	8,371,774	-	7,918,789
	=	452,985		

Analytical check:

Amortised cost as at 31 December 20x2	=	Present value of expected recoverable amount at EIR of 3.35%
	=	PV(3.35%, 3, 500,000, 0)
	=	452,985

Explanatory note:

1. In December 2015, the Transition Resource Group for Impairment of Financial Instruments (ITG) discussed on how to measure the gross carrying amount and the loss allowance for financial instruments that are measured at amortized cost and are credit impaired. In the scenario, the financial instrument is not purchased or originated credit impaired but became credit impaired during the first reporting period. 3 possible approaches were explored. The ITG concluded that the approach in which the gross carrying value and the amortized cost are calculated using the effective interest rate and the loss allowance is calculated as the balancing figure between the gross carrying amount and amortized cost is the approach that would meet the requirements of IFRS 9. As both the gross carrying amount and amortized cost are calculated by applying the effective interest rate at inception, the loss allowance is effectively discounted at the effective interest rate.

Compute the effective interest income for the year ended 31 December 20x3.

Effective interest income for the year 20x3 (Note 2)	=	Amortized cost as at 1 January 20x3	*	EIR of 3.35%
	=	452,985	*	3.35%
	=	15,157		

Explanatory note:

2. Under Stage 3, interest revenue is calculated on the amortized cost (i.e., the gross carrying amount after deducting the impairment allowance).

Prepare the amortization table

Date	Cash interest 5%	Effective interest 3.35%	Gross carrying amount	Loss Allowance	Amortized Cost
1 Jan 20x1			8,600,000	–	8,600,000
31 Dec 20x1	400,000	287,765	8,487,765	560	8,487,205
31 Dec 20x2	400,000	284,009	8,371,774	7,918,789	452,985
31 Dec 20x3	-	15,157	8,651,902*	8,183,760**	468,142
31 Dec 20x4	-	15,664	8,941,403	8,457,597	483,806
31 Dec 20x5	-	16,189	9,240,597	8,740,597	500,000

* Derived as $8,371,774*1.0335 (Original EIR). This relates to the unwinding of the discount on the gross carrying amount. Note: When a financial asset becomes credit impaired, the effect of the unwinding of discount on the gross carrying value of $280,128 ($8,651,902 - $8,371,774) is greater than the effective interest revenue (calculated based on the amortized cost) recognized ($15,157).

** Derived as $7,918,789*1.0335 (Original EIR). This relates to the unwinding of the discount on the loan allowance.

Prepare accounting entries

	Amortized Cost		FVOCI	
Year ended 31 Dec 20x1				
Dr Bonds	8,000,000		8,600,000	
Dr Unamortized premium	600,000		–	
Cr Cash		8,600,000		8,600,000
Initial recognition of bonds				
Dr Cash	400,000		400,000	
Cr Unamortized premium/Bonds		112,235		112,235
Cr Interest income (P/L)		287,765		287,765
Effective interest income for 20x1				
Dr Impairment loss (P/L)	560		560	
Cr Loan allowance/OCI		560		560
Recognition of 12-month expected credit loss				
Dr OCI	–		197,373	
Cr Bonds		–		197,373
Fair value change for year ended 31 December 20x1 taken to OCI [$8,290,392 – ($8,600,000 – $112,235)]				
Year ended 31 Dec 20x2				
Dr Cash	400,000		400,000	
Cr Unamortized premium/Bonds		115,991		115,991
Cr Interest income (P/L)		284,009		284,009
Effective interest income for 20x2				
Dr Impairment loss (P/L)	7,918,229		7,918,229	
Cr Loan allowance/OCI		7,918,229		7,918,229
Recognition of life-time expected credit loss				
Dr OCI	–		7,724,401	
Cr Bonds		–		7,724,401
Fair value change for year ended 31 December 20x2 taken to OCI [$450,000 – [$8,290,392 – $115,991)]				
Year ended 31 Dec 20x3 (extract)				
Dr Gross carrying amount of bonds	280,128	^	280,128	
Cr Interest income (P/L)		15,157		15,157
Cr Loss allowance		264,971	@	264,971
(Being effective interest on amortized cost and unwinding of discount for gross carrying amount and loss allowance on bonds.)				
^ Derived as $8,651,902 - $8,371,774				
@ Derived as $8,183,760 - $7,918,789				
Dr OCI	-		145,157	
Cr Bonds		-		145,157
Fair value change for year ended 31 December 20x3 taken to OCI [$320,000 – ($450,000 +$280,128 – $264,971)]				

Scenario 1

If we were to vary the fact pattern such that the entity subsequently sold the bond on 1 January 20x3 at $450,000, then the terminal accounting entries on 1 January 20x3 will be as follows.

1 January 20x3	Amortized cost		FVOCI	
Dr Cash	450,000			
Dr Loss on disposal (P/L)	2,985			
Dr Loss allowance	7,918,789			
Cr Bonds		8,000,000		
Cr Unamortized premium		371,774		
Being disposal of bonds on 1 Jan 20x3				
Dr Cash			450,000	
Cr Bonds				450,000
Being proceeds received on disposal of bonds on 1 Jan 20x3				
Dr Loss on disposal (P/L)			2,985	
Cr OCI				2,985
Being recycling of fair value reserves- OCI to PL on disposal				

Scenario 2

If we were to vary the scenario such that the issuer of the bond repays $8,651,902 on 1 Jan 20x4 i.e. payment for the full contractual amount owing by the issuer. In other words, the credit impaired bond asset is effectively "cured" through the full repayment.

This scenario was specifically discussed by the Interpretations Committee in November 2018. In particular, when a credit impaired financial asset is subsequently cured, the reversal of the expected credit losses in the loan allowance is recorded as part of credit impairment in the profit or loss in accordance with paragraph 5.5.8 of IFRS 9. The rationale is because when a financial asset is credit-impaired, the effects of the unwinding of the discount on the expected credit losses in the loan allowance is recognized as credit impairment in the profit or loss. Accordingly, the reversal of expected credit losses previously recognized should also be adjusted as part of credit impairment in the profit or loss.

Therefore, the entity will pass the following entry on 1 Jan 20x4.

1 January 20x4	Amortized cost		FVOCI	
Dr Cash	8,651,902			
Cr Bonds (Gross carrying amount)		8,651,902		
Being repayment of bonds				
Dr Loss allowance	8,183,760			
Cr Credit impairment (P/L)		8,183,760		
Being reversal of credit impairment in loss allowance				
Dr Cash			8,651,902	
Cr Bonds				320,000
Cr OCI				148,142
Cr Credit impairment (P/L)				8,183,760
Being repayment of bonds				

SIMPLIFIED APPROACH

As discussed above, IFRS 9 provides a simplified approach which applies only to trade receivables and contract assets that result from transactions in the scope of IFRS 15 *Revenue from Contracts with Customers* and lease receivables that result from transactions in the scope of IAS 17 *Leases*.

Trade receivables

Paragraph 5.5.15 of IFRS 9 requires an entity to measure the loss allowance equal to lifetime expected credit losses for trade receivables or contract assets that result from transactions that are within the scope of IFRS 15, and that do not contain a significant financing component. This same treatment is also accorded to entities applying the practical expedient for contracts that are one year or less.

However, for trade receivables or contract assets that contain a significant financing component in accordance with IFRS 15, the entity is given an accounting policy choice to either measure the loss allowance at an amount equal to 12-month expected credit losses or lifetime expected credit losses. This accounting policy shall be applied to all such trade receivables or contract assets but may be applied separately to trade receivables and contract assets.

Leases

Similarly, the same accounting policy choice of either measuring the loss allowance at an amount equal to 12-month expected credit losses or lifetime expected credit losses is accorded to lease receivables.

When measuring a loss allowance for a lease receivable, IFRS 9 states that the cash flows used for determining the expected credit losses should be consistent with the cash flows used in measuring the lease receivable in accordance with IAS 17 *Leases* and the expected credit losses on lease receivables should be discounted using the same discount rate used in the measurement of the lease receivable in accordance with IAS 17.

IFRS 9 clarifies that an entity may select its accounting policy for trade receivables, lease receivables and contract assets independently of each other.

OFFSETTING FINANCIAL ASSETS AND FINANCIAL LIABILITIES

Offsetting refers to the reporting of a recognized financial asset and a recognized financial liability as a single net financial asset or financial liability in the statement of financial position. For example, an accounts receivable of $100,000 and an accounts payable of $50,000 may be reported as a net accounts receivable of $50,000. Offsetting should not be confused with derecognition. Offsetting is a presentation issue, whereas derecognition involves the removal of a financial asset or a financial liability from the statement of financial position. Another difference is that derecognition may result in a gain or loss, whereas offsetting does not.

IAS 32 paragraph 42 requires a financial asset and a financial liability to be offset and the net amount presented in the statement of financial position "when, and only when, an entity:

(1) Currently has a legally enforceable right to set off the recognized amounts; and

(2) Intends either to settle on a net basis, or to realize the asset and settle the liability simultaneously."

The enforceable right must not be contingent on a future event and it must be legally enforceable in the normal course of business, in the event of default and in the event of insolvency or bankruptcy of the entity and all its counterparties[28] (AG38 of IAS 32).

The rationale for this requirement is to reflect the entity's expected future cash flows from settling two or more separate financial instruments when in effect there is only a single financial asset or financial liability.

Both conditions — the existence of a legally enforceable right to set off and the intention to settle on a net basis or to settle the asset and liability simultaneously — must be met. The existence of one without the other will affect the entity's exposure to credit and liquidity risk. The existence of a legally enforceable right without intention means that there is no assurance that the expected future cash flows will occur on a net basis. Having the intention to settle on a net basis but without the legal right to do so means that the rights and obligations associated with the individual financial asset and financial liability remain unchanged.

Intention may be evidenced by the representations of management and past actions. However, it must be noted that intention may be influenced by external factors, for example, requirements and other circumstances may limit net or simultaneous settlement (IAS 32:47). When an entity has a right of setoff, but does not intend to exercise the right, the effect of the right on the entity's credit risk exposure should be disclosed (IAS 32:47). IAS 32 paragraph 49 prohibits offsetting in the following situations where:

1. A "synthetic" instrument is created by combining different financial instruments into a single asset;
2. Different counterparties are involved even though the financial assets and financial liabilities arise from financial instruments having the same primary risk exposure;
3. Financial or other assets are pledged as collateral or set aside in trust to discharge an obligation;
   or
4. Obligations are expected to be paid off through insurance claims.

DISCLOSURES

Classification and Measurements

The carrying amounts for each classification category are separately disclosed either in the financial statement or in the notes:

- FVTPL financial assets separately between those designated as such at initial recognition and those mandatorily measured at FVTPL;
- FVTPL financial liabilities separately between those designated as such at initial recognition and those held for trading;
- Financial assets held at amortized cost;
- Financial liabilities held at amortized cost;
- FVOCI financial assets separately between debt instruments that meet contractual cash flow characteristic test and business model to collect contractual cash flows and for sale, versus equity instruments not held for trading and elected for FVOCI.
- Entity shall disclose for financial assets elected for FVTPL under fair value option maximum exposure to credit risk of the financial asset on the reporting date, the amount by which credit derivatives mitigate that credit exposure, change in fair value during the period and cumulative related to credit risk.

page 857

- Entity shall disclose for financial liabilities elected for FVTPL with effects of changes in credit risk reported in OCI, cumulative change attributable to credit risk, difference between the carrying amount, and the amount that the entity is required to pay contractually at maturity, any transfers of cumulative gain/loss during period and the reason for such transfers, and the amount realized upon de-recognition of liability.
- Detailed description of the methods used to determine the change in fair value attributable to credit risk of the financial assets and liabilities.

- Detailed description of the methods used to determine whether presenting the effects of changes in credit risk in OCI would create or enlarge accounting mismatch in profit/loss.
- Entity shall disclose for equity investments designated at FVOCI, which instruments have been designated at FVOCI, the reasons for this presentation approach, the fair value on reporting date, dividends recognized during the period (separately for investments derecognized during period and investments outstanding on reporting date), any transfers of cumulative gain/loss during period, and reason for such transfers.
- Entity shall disclose for equity investments measured at FVOCI and reasons for disposing the investments, fair value of investments on date of de-recognition, and the cumulative gain/loss on disposal.
- Entity shall disclose if it has reclassified any financial assets in the current and previous reporting period, the reclassification date, detailed explanation of business model change and effect of the change on financial statements and amounts reclassified into/out of each category.
- Entity shall disclose for financial assets reclassified out of FVTPL to FVOCI or amortized cost, the effective interest rate and interest revenue recognized.
- Entity shall disclose for financial assets reclassified out of FVOCI to amortized cost or out of FVTPL to amortized cost or out of FVTPL to FVOCI, the fair value of financial assets on reporting date, the fair value gain/loss that would have been recognized in profit/loss or OCI if the assets had not been reclassified.
- Entity shall disclose the carrying amount of financial assets pledged as collateral for liabilities or contingent liabilities and terms and conditions in relation to the pledge.
- Entity shall disclose the loss allowance in relation to FVOCI financial assets.

The entity shall also disclose:

- Net gains/losses on FVTPL financial assets and FVTPL financial liabilities designated at FVTPL on initial recognition and those mandatorily classified at FVTPL,
- The amounts recognized in OCI versus amounts recognized in profit/loss for FVTPL financial liabilities,
- Net gains/losses on financial liabilities at amortized cost,
- Net gains/losses on financial assets at amortized cost,
- Net gains/losses on equity investments designated at FVOCI (amounts recognized at OCI and amounts recognized in profit/loss on de-recognition),
- Total interest revenue and interest expense on financial assets classified at amortized cost/FVOCI and financial liabilities not classified at FVTPL,
- Fee income/expenses on financial assets/liabilities not FVTPL and trust in holding/investments of assets, and
- Analysis of gain/loss recognized due to de-recognition of financial assets measured at amortized costs and reasons for de-recognition. (IFRS 9:8 to 20A)

Impairment of financial assets

IFRS 9 rules propose a host of new disclosure requirements. The disclosures for impairment include:

(a) Amounts arising from expected credit losses including reconciliation of gross carrying amount and loss allowance for financial instruments and inputs or assumptions used in calculating 12-month and lifetime expected credit losses.

(b) Effect of changes in credit risk of financial instruments including:

  (i) Gross carrying amount by credit risk rating grades of financial assets, and provisions related to loan commitments and financial guarantees;

  (ii) Inputs and assumptions used to determine if there has been a significant increase in credit risk; and

(iii) Gross carrying amount and amount recognized as provisions for financial instruments evaluated on an individual basis, with significant increase in credit risk since initial recognition.

EVALUATION OF FAIR VALUE AS A BASIS FOR THE MEASUREMENT OF FINANCIAL INSTRUMENTS

This chapter concludes with a discussion of the fair value accounting of financial instruments. Prior to IAS 32, business firms have the choice of a number of bases for measuring financial assets and financial liabilities, for example, at cost, at lower of cost or net realizable value, and at market value. The availability of choice in measuring financial assets, and in particular, the use of the cost basis, had provided opportunities for earnings management. For example, the practice of gains trading was a commonly used tactic among managers of savings and loans institutions in the United States. They could accelerate income recognition by disposing of high-yielding financial assets to record gains while retaining low-yielding assets with fair value below cost without writing down losses. Furthermore, the use of cost as a basis of measuring financial assets also contributed towards reluctance on the part of loan managers to foreclose on problem loans as this may lead to the recognition of a loss upon the repossession of mortgaged assets.

The shortcomings of the cost-based model eventually led to arguments for the use of fair value accounting as a basis for measuring financial assets and financial liabilities. According to the supporters of fair value accounting, besides discouraging earnings manipulation, fair value accounting also provides relevant and useful information to users of financial statements as fair value closely reflects the present value of expected future cash flows.

While the arguments for fair value accounting are persuasive and logical, there have been arguments put forward that fair value may not necessarily provide more relevant and useful information. Fair value may not reflect the purpose of acquiring certain financial assets such as securities that are intended to be held to maturity. Furthermore, fair value accounting may result in undue fluctuations in reported earnings that may not be realized. Last but not least, there may be a reliability issue as the estimation of fair values may be based on unrealistic assumptions.

The standard setters are evidently more convinced of the benefits of fair value accounting judg-ing from the recent revision in the accounting standards on financial institutions by both the Board and the FASB. However, they have also taken note of the arguments of the opposite camp by retaining the use of cost basis for certain financial assets, such as debt securities held at amortized cost, and reducing the volatility of reported earnings by taking changes in fair value to equity as in the case of FVOCI securities.

APPENDIX 9A

Fair Value Measurement

IFRS 13 and US FAS 157 seek to establish a consistent definition of GAAP fair value and require fair value measurement disclosures. IFRS 13 defines fair value as the price that would be received to sell an asset or paid to transfer a liability between market participants at the measurement date (IFRS 13 paragraph 9). A fair value

measurement is for a specific asset or liability. Hence, the characteristics of the asset or liability that would be factored in its pricing include the condition and location of the asset and any restrictions on the sale or use of the asset. The price used to fair value the asset or liability should not be adjusted for transaction costs but should be adjusted for transport costs when location is a characteristic of the asset (IFRS 9 paragraphs 25 to 26). The asset or liability measured at fair value could be either stand-alone or in a group.

The fair value measurement requires the following factors: an orderly transaction, a transaction in the principal, or in the absence of the principal market, the most advantageous market. The transaction should be orderly, neither done under distress or duress nor a forced liquidation. The principal market takes precedence over the most advantageous market. The principal or most advantageous market is normally the one where the transaction takes place, accessible to the entity (even though the entity may not transact in that market on the measurement date), and where the assumed transaction takes place. The principal or most advantageous markets may differ across different entities or businesses.

An entity shall measure the fair value of an asset or a liability assuming the market participants price the asset or liability based on their best economic interest. A fair value is the in-use valuation for strategic buyer and the exit price for financial buyer. A fair value for a non-financial asset considers the ability of the market participant to sell the asset to another market participant at its highest and best use. The highest and best use of a non-financial asset should be physically possible, legally permissible and financially feasible.

When the entity manages the net position of a group of financial assets or liabilities, the fair value can be based on the price received (paid) to sell (transfer) the net long (short) position, i.e. asset (liability). The fair value of a group of financial assets or liabilities should be based on how the market would price the net risk exposure at the measurement date (IFRS 13 paragraph 48).

The use of fair value as a basis of measurement is not confined to IAS 32 and IFRS 9 alone. There are other standards that require the use of fair value as well, for example, IAS 38 *Intangible Assets* and IFRS 3 *Business Combinations*. Fair value is defined as "the amount for which an asset could be exchanged or a liability settled, between knowledgeable, willing parties in an arms-length transaction" (IAS 32:11). IFRS 13 provides guidance on fair value measurement.

Fair Values for Active versus Inactive Markets

The recent debate on fair value accounting focuses on the appropriate use of fair values in "active" versus "inactive" markets. Examples of the criteria used to assess if the markets are inactive include the following: the levels of volume and activity based on market research and market participant surveys, if the transaction prices are stale, the consistency in price quotes from brokers or market makers, correlations among similar assets, the price levels that may indicate liquidity concerns and widening of bid/offer spreads beyond normal dealer profits (Negus and Boyles, 2010).

page 860

If the markets are deemed inactive, the management needs to consider if the transactions are orderly. Transactions are deemed disorderly under one of the following conditions: if a structured product has not had sufficient exposure to the market based on the usual marketing period, if the product has been marketed to a single buyer, if the seller is in a state of insolvency, or if the transaction price is an outlier compared to transactions of similar products (Negus and Boyles, 2010). Mark to model is used where the transactions are inactive and disorderly.

The appropriateness in the use of fair values for the less liquid assets, the so-called Levels 2 and 3 assets (for example, mortgage-backed securities), are accounting issues that firms encountered during the recent credit crisis. Fiechter and Meyer (2009) found evidence of big bath accounting using Level 3 assets during the credit crisis. They examined 552 US banks from Q1 2008 to Q1 2009 and found that banks with lower pre-managed profit figures had significantly higher discretionary Level 3 asset losses. These banks' pre-managed earnings also turned positive in the subsequent quarter.

Valuation Techniques

IFRS 13 requires that the valuation should be based on circumstances and with sufficient data to measure fair value. The use of observable inputs should be maximized, and that unobservable inputs should be minimized. The valuation techniques could be based on the market approach, the cost approach and the income approach. When more than one valuation techniques is used, the fair value within the range that is most representative in the circumstances is used. If

transaction price is used at initial recognition, while subsequent measurement uses unobservable inputs, the measurement technique should be calibrated so that the initial recognition value equals the transaction price, and reflects observable market data.

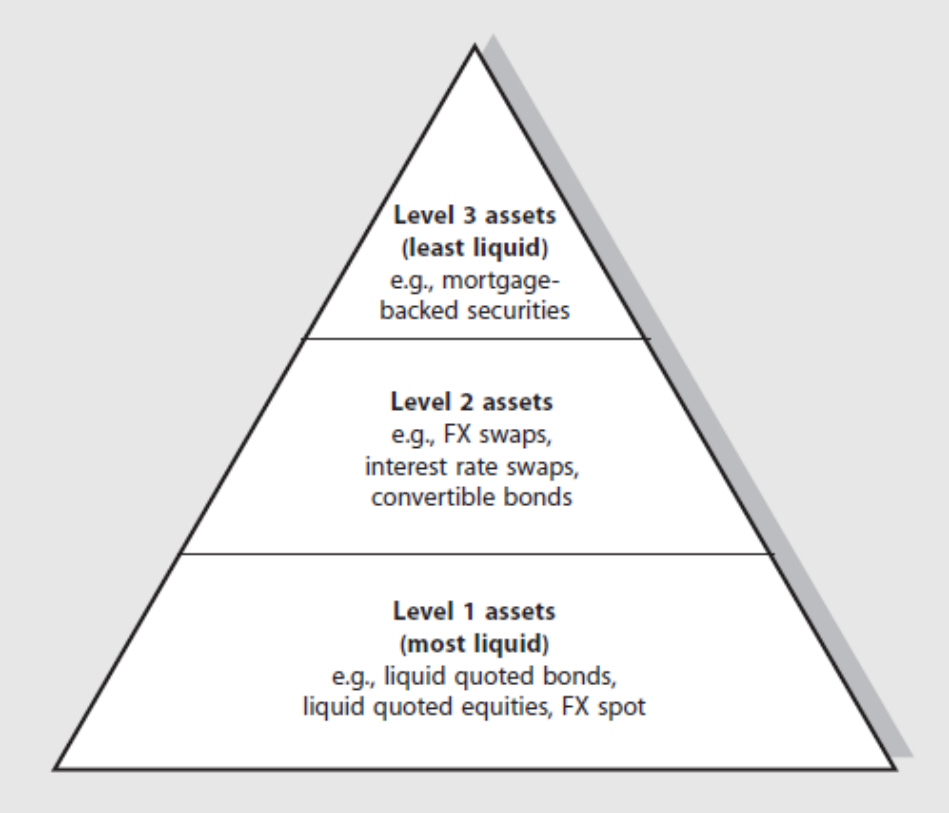
Valuation techniques may be changed in response to events so that the change to a measurement technique is more reflective of fair values. Examples of the events are changes in market and technological (including valuation techniques) conditions and changes in availability of information. Such revisions are accounted for as changes in accounting estimate based on IAS 8 (IFRS 13 paragraphs 63 to 66). The price of the asset or liability within the bid-ask spread with the most representative fair value is used. There is no requirement for bid prices to be used for assets and ask prices for liability positions (IFRS 13 paragraph 70).

IFRS 13 clarifies that if an asset or liability measured at fair value has a bid price and ask price, the price within the bid-ask spread, which is most representative of fair value in the circumstance, shall be used to measure the fair value. One type of fair value adjustment is credit risk adjustment, which factors the positive fair values at risk of counterparty default. The calculation is based on the multiple of the expected positive exposures to the counterparty, the probability of default and the loss given default. The remaining fair value adjustments, such as model limitations and input uncertainties, mainly cover complex exotic derivative products. This is because the models and inputs cannot fully take into account the product complexities. In IFRS 13, the blockage factor that arises from an entity holding a large quantity of financial instrument, such that a sale will affect the quoted price, is specific to the entity and not to the fair value of financial instrument.

Fair Value Measurement Framework

IFRS 13 establishes a hierarchical fair value measurement framework that classifies measurement inputs according to how observable the market inputs are and to expand the disclosures on fair value measurements (Figure 9A.1).

FIGURE 9A.1 Hierarchy of fair value measurement



Level 1 Assets. When market prices are observable in active markets for identical assets or liabilities, the assets' fair values are based on the transacted prices and classified as Level 1. The factors to consider for classification purposes are the principal or most advantageous market and the ability of the entity to transact at that price in that market. Examples of Level 1 assets are shares that are listed and actively traded on stock exchanges. Actively traded quoted equities and quoted bonds, and spot foreign exchange contracts typically fall into this category.

Level 2 Assets. Level 1 prices may be adjusted and classified at lower Levels 2 or 3 in the following situations:

1. When the entity holds a large number of similar assets or liabilities and the quoted price in an active market, though available, is not readily accessible for each asset or liability;
2. When significant events such as major transactions, or announcements, occur after the market close and before measurement date that may affect fair values.
3. When the fair value of liability or own equity instrument needs to be adjusted for credit risks (IFRS 13 paragraph 76 to 79).

In other cases, the assets' market prices are not directly observable but their fair values can be derived from the market prices of similar instruments or from valuation models that use direct observable market inputs such as interest rate yield curves and option volatilities. These assets are classified as Level 2. Level 2 inputs include quoted prices for similar assets or liabilities in either active or inactive markets, inputs that are observable for asset or liability such as interest rates, implied volatilities and credit spreads, and market corroborated inputs.

Adjustments may be made for the condition or location of the asset, the volume or activity of the market, and the extent to which the inputs are comparable to the assets or liabilities being measured. Significant further adjustments result in these fair values being classified at Level 3. Convertible bonds, interest rate swaps, and foreign exchange swaps, whose values can be derived from market inputs directly, fall into the Level 2 category. For Level 2 assets, the difference between the derived fair values and the transaction prices are recognized as trading gains or losses on the inception of the transaction (IFRS 13 paragraphs 81 to 84).

Level 3 Assets. The Level 3 assets are valued based on data unobservable from the market. The valuation model may incorporate market factors such as foreign exchange rates, interest rates, volatilities, credit risks and prepayment risks. In this case, these assets are classified as Level 3. The fair values reflect assumptions market participants would use to price the asset or liability, including risk assumptions on valuation techniques and inputs, and adjustments for measurement uncertainties, for example, due to significant declines in the volume of activity (IFRS 13 paragraphs 87 to 88).

The difference between the fair values and the transaction prices are recognized as income across the life of the transaction until either the maturity date of the transaction, its closeout by an offsetting transaction or when the inputs become observable. When the entity uses valuation models for Levels 2 and 3 assets, further fair value adjustments may be needed to take into account market conditions such as bid-offer spreads, credit risks, liquidity premium, model limitations and input uncertainties.

Disclosure requirements under IFRS 13 include the valuation techniques and inputs used for fair value measurements, the effects of measurements using Level 3 inputs on profit or loss or other comprehensive income (IFRS 13 paragraph 91).

Example of IFRS 13 Classifications and Measurements

In the 2011 annual report of RBS Group, note 11 (see Figure 9A.2) provides a good example of the valuation processes and techniques, and how the financial instruments are classified based on IFRS 7 and IFRS 13.

FIGURE 9A.2 Real-life example based on IFRS 7 and IFRS 13

RBS Group's control environment for the determination of the fair value of financial instruments includes formalized protocols for the review and validation of fair values independent of the businesses entering into the transactions. … A key element of the control environment is the independent price verification (IPV) process. Valuations are first performed by the businesses which entered into the transaction. Such valuations may be directly from available prices, or may be derived using a model and variable model inputs.

Valuation techniques

The Group derives fair value of its instruments differently depending on whether the instrument is a non-modelled or a modeled product.

Non-modelled products

Non-modelled products are valued directly from a price input and are typically valued on a position by position basis and include cash, equities, and most debt securities.

Modelled products

Modelled products are those valued using a pricing model, ranging in complexity from comparatively vanilla products such as interest rate swaps and options (e.g. interest rate caps and floors) through to more complex derivatives. The valuation of complex products requires an appropriate model and inputs into the model. Sometimes models are also used to derive inputs (e.g. to construct volatility surfaces). The Group uses a number of modeling methodologies.

page 863

Inputs to valuation models

Values between and beyond available data points are obtained by interpolation and extrapolation. When utilizing valuation techniques, the fair value can be significantly affected by the choice of valuation model and by underlying assumptions concerning factors such as the amounts and timing of cash flows, discount rates and credit risk. The principal inputs to these valuation techniques are as follows:

- Bond prices – quoted prices are generally available for government bonds, certain government securities and some mortgage-related products.
- Credit spreads – where available, these are derived from prices of credit default swaps or other credit based instruments, such as debt securities. For others, credit spreads are obtained from pricing services.
- Interest rates – these are principally benchmark interest rates such as the London Interbank Offer Rate (LIBOR) and quoted interest rates in the swap, bond, and futures markets.
- Foreign currency exchange rates – there are observable markets both for spot and forward contracts and futures in the world's major currencies.
- Equity and equity index prices – quoted prices are generally readily available for equity shares listed on the world's major stock exchanges and for major indices on such shares.
- Commodity prices – many commodities are actively traded in spot and forward contracts and futures on exchanges in London, New York and other commercial centers.
- Price volatilities and correlations – volatility is a measure of the tendency of a price to change with time. Correlation measures the degree which two or more prices or other variables are observed to move together. If they move in the same direction, there is positive correlation; if they move in the opposite direction, there is negative correlation. Volatility is a key input in valuing options and the valuation of certain derivatives such as products with more than one underlying variable that are correlation-dependent. Volatility and correlation values are obtained from broker quotations, pricing services, or derived from option prices.
- Prepayment rates – the fair value of a financial instrument that can be prepaid by the issuer or borrower differs from that of an instrument that cannot be prepaid. In valuing prepayable instruments that are not quoted in active markets, the Group considers the value of the prepayment option.
- Counterparty credit spreads – adjustments are made to market prices (or parameters) when the creditworthiness of the counterparty differs from that of the assumed counterparty in the market price (or parameters).
- Recovery rates/loss given default – these are used as an input to the valuation models and reserves for asset-backed securities and other credit products as an indicator of severity of losses on default. Recovery rates are primarily sourced from market data providers or inferred from observable credit spreads.

Valuation reserves

When valuing financial instruments in the trading book, adjustments are made to mid-market valuations to cover bid-offer spread, liquidity and credit risk.

Note:

Level 1: Valued using unadjusted quoted prices in active markets, for identical financial instruments. Examples include G10 government securities, listed equity shares, certain exchange-traded derivatives, and certain US agency securities.

Level 2: Valued using techniques based significantly on observable market data. Instruments in this category are valued using:

(a) Quoted prices for similar instruments or identical instruments in markets which are not considered active; or

(b) Valuation techniques where all the inputs that have a significant effect on the valuations are directly or indirectly based on observable market data.

The types of instruments that trade in markets that are not considered to be active, but are based on quoted market prices, banker dealer quotations, or alternative pricing sources with reasonable levels of price transparency, and those instruments valued using techniques include non-G10 government securities, most government agency securities, investment-grade corporate bonds, certain mortgage products, including CLOs, most bank loans, repos and reverse repos, less liquid listed equities, state and municipal obligations, most notes issued, investment contracts issued by the Group's life assurance business (2009) and certain money market securities and loan commitments and most OTC derivatives.

page 864

Level 3: Instruments in this category have been valued using a valuation technique where at least one input, which could have a significant effect on the instrument's valuation, is not based on observable market data. Where inputs can be observed from market data without undue cost and effort, the observable input is used. Otherwise, the Group determines a reasonable level for the input. Financial instruments primarily include cash instruments which trade infrequently, certain syndicated and commercial mortgage loans, unlisted equity shares, certain residual interests in securitizations, majority of CDOs, other mortgage-backed products and less liquid debt securities, certain structured debt securities in issue, and OTC derivatives where valuation depends upon unobservable inputs such as certain credit and exotic derivatives. No gain or loss is recognized on the initial recognition of a financial instrument valued using a technique incorporating significant unobservable data.

Source: Details extracted from RBS Reports and Accounts with permission from The Royal Bank of Scotland plc.

page 865

APPENDIX 9B

Loan Loss Accounting

The impairment methodologies for loans and advances, typically called loan loss provisioning, are outlined below (note that this is based on historical cost accounting).

Dynamic loan loss provisioning The dynamic provisioning method used by Spanish banks is based on the following equation set out by the Bank of Spain in 2004:

$$General\ Provision = \sum_{t=1}^{6} \alpha_t \Delta C_{it} + \sum_{t=1}^{6} (\beta_t - Specificprovision_{it}/C_{it}) C_{it}$$

The parameter α is the average historical total loan loss in a cyclically neutral year for each asset class. The parameter β is the average historical specific provision for each group. The term Cit measures the stock of asset i at time t. The discretion comes in the selection of the parameters α and β. The parameters α and β for each asset class are summarized in Table 9B.1.[29]

TABLE 9B.1 Risk parameters of dynamic loan provisioning method

Risk parameter values	Asset class
Negligible risk (α = 0%, β = 0%)	Cash and public sector loans/securities
Low risk (α = 0.6%, β = 0.11%)	Mortgages with loan-to-value ratio below 80%, exposure to corporations with "A" rating or higher
Medium-low risk (α = 0.6%, β = 0.11%)	Mortgages with loan-to-value ratio above 80% and other collateralized loans
Medium risk (α = 1.8%, β = 0.65%)	Other loans that are non-rated, below "A" rating and to small and medium-sized firms
Medium-high risk (α = 2.0%, β = 1.1%)	Consumer durables financing
High risk (α = 2.5%, β = 1.64%)	Credit card exposures and overdrafts

Balla and McKenna (2009) compared the incurred loan loss provisioning methodology used in the United States and the dynamic loan loss provisioning in Spain. They simulated the levels of loan loss provisions in the United States if the dynamic loan loss method had been used and found that the latter would have smoothed bank earnings through the economic cycles and mitigated some of the pro-cyclical effects.

Cavallo and Majnoni (2001) found that for a sample of 1,176 commercial banks (out of which 372 are from non-G10 countries) over a period of 1988 to 1999, there is a positive (negative) relationship between loan loss provisions and pre-provision income for G10 (non-G10) banks. This shows that the banks from non-G10 countries provided too little in good times. Perez et. al. (2008) showed that the Spanish banks used loan provisions to manage earnings but not capital. However, the banks use a statistical provision to increase loan provision during economic upturns and conversely during downturns. The statistical provision behaves like a transparent earnings smoothing device. This reduces the discretionary element of the usual provisions, which better capture the economic factors such as the non-performing loans, stock index, loans over total assets and gross domestic growth. Fillat and Montoriol-Garriga (2010) simulated the use of dynamic loan loss provisioning for US banks and found that they would have been better able to absorb losses during the financial crisis and the government support (TARP) funds would have been reduced by half. Nonetheless, the crisis was so severe that the additional loan provisions would still have been depleted by first quarter of 2009.

There have been some debates on whether loans and advances should be fair valued. Loans and advances are currently classified under the "loans and receivables" category and recorded at amortized cost unless they are held for trading or designated at fair value through profit or loss using the fair value option. Fair value accounting of loans is favoured by the fair value accounting proponents (for example: Barth et. al., 2010). Investment banks such as Morgan Stanley and Goldman Sachs typically adopt fair valuation of loans to a greater extent than commercial banks because unlike commercial banks, investment banks hold loans for trading purposes, instead of long-term customer relationship purposes (Goldman Sachs, 2009).

The fair value accounting methodology can be subjective as most loans are not traded in the market and there are no objective market prices to refer. A model based approach to compute the present value of expected discount cash

flows introduces discretion to determine the discount rates and the expected future cash flows. Benston and Wall (2005) reported that the book value of loans before loan loss allowance understated their economic values while fair value accounting was not verifiable. They recommended that loan loss allowances be limited to losses that could have been charged off but were not and large losses where economic values were lower than book values. Nissim (2003) showed that banks overstated fair values of loans to obtain favourable market assessment. The overstatement of loan fair values is negatively related to regulatory capital, asset growth, liquidity and the gross book value of loans and positively related to the change in the rate of credit losses.

Incurred loan loss method IAS 39 and US GAAP previously used an incurred loan loss accounting approach where loan losses are recognized when there is objective evidence of the loss event, for example, the borrower has either defaulted on payment or gone into insolvency. For the specific loan loss allowances under the incurred loan loss method, the banks evaluate the larger loans (which are typically loans to corporate customers, including syndicated loans) on an individual basis using either a present value approach to discount the expected cash flows of the loans or the observable market prices when they are available. The banks compare the present values of expected cash flows and collateral values against the carrying values of the loans and make a loss allowance for the difference between the loan carrying values and the lower of their present values or collateral values.

For example, a five-year loan of $15,000 has an original effective interest rate of 7%. One year before maturity, there is evidence of impairment and expected cash flow is $7,500. Present value of loan, $7,500, discounted at 7% is $7,000. The impairment loss is $15,000 – $7,000 = $8,000.

The banks pool the smaller loans (which are typically loans to retail and small corporate customers) based on homogenous risk types. Different percentages of loan loss allowances are applied on each pool of loans based on the risk ratings, loan product type, product lines and industry of customers, geographical segments of the customers, current economic conditions, estimated delinquencies (past due status) and payment histories of customers (Bank of America 2008 annual report).

page 867

One advantage of the incurred loan loss method is that it is verifiable and objective. However, in the midst of the financial crisis, this method has come under severe criticism for being pro-cyclical (Barth et. al., 2010; Turner, 2010).

Expected loan loss method The expected loan loss method is favored by the accounting standard setters, that is the Board and FASB, as well as the Basel Committee on Banking Supervision, which sets the capital adequacy guidelines. The details have been explained further in the earlier sections.

page 868

CONCEPT QUESTIONS

CQ9.1 Explain what a mandatorily redeemable preference share (MRPS) is. What is the accounting principle underlying the treatment of mandatorily redeemable preference shares?

CQ9.2 What is a compound financial instrument?

CQ9.3 Explain the rationale for the accounting treatment of compound financial instruments under IAS 32. Do you agree with IAS 32's stance?

CQ9.4 Explain how the fair values of the debt and equity components in a compound financial instrument should be derived under IAS 32.

CQ9.5 Explain how financial assets and financial liabilities are classified under IFRS 9.

CQ9.6 Explain why changes in the fair value of financial assets classified as carried at fair value through profit or loss differ from those classified as FVOCI.

CQ9.7 What are the pros and cons of fair value accounting for *all* financial instruments?

CQ9.8 Do the follow contractual cash flows meet the SPPI (solely payments of principal and interest) test?

(a) A bond with stated maturity date, and principal and interest linked to an inflation index of the same currency as the bond. The inflation link is not leveraged and the principal is protected.

(b) A bond with stated maturity date, and variable interest that is capped.

(c) A bond that is convertible into a fixed number of issuer's shares.

(d) A five year bond with interest rate that is reset to a constant maturity, i.e. 5 year period at every interest reset period.

CQ9.9 Can each of the following items be designated as amortized cost investments?

(a) AA Company acquires a bond issued by BB Corporation. The terms of the bond provide the holder with an option to require the issuer to repay or redeem the bond before maturity. The business model is to collect contractual cash flows from the bond.

(b) AA Company invests in a callable bond issued by BB Corporation. The call feature gives the issuer (BB Corporation) the right to call the bond before maturity. The business model is to collect contractual cash flows from the bond.

(c) CC Enterprise holds unquoted preference shares with fixed payments and a time period for redemption issued by DD Company, which classifies the preference shares as a liability. The business model is to hold the preference shares to collect contractual cash flows.

(d) EE Corporation acquires units in a real estate investment trust (REIT) for investment purposes and does not intend to dispose of the units in the near future.

CQ9.10 Each of the following bond has contractual cash flows that meet the SPPI (solely payments of principal and interest) test. Determine the business model.

(a) The entity invests surplus cash in short term bond investments, and expects to use the cash only when long term capital expenditure arises.

(b) The entity invests surplus cash in short term bond investments and expects to sell the investments to meet daily liquidity needs.

(c) A bond portfolio is managed and performance evaluated based on the interest and capital gains.

(d) A bank's business is to originate loans and manage the interest rate risk from loans by using derivatives such as interest rate swaps. The bank does the credit evaluation in providing loans and follows up with borrowers to collect interest.

CQ9.11 It was the scene of yet another lengthy board meeting. The directors had just been informed that IAS 32 required the separate presentation on an issuer's statement of financial position of liability and equity elements created by a single financial instrument. The company happened to have substantial amounts of convertible debt. A number of the directors were not happy with the requirements of IAS 32. The chief executive officer, Gladys Yong, who was particularly exasperated, said: "The

accountants have done it again! They have devised these complicated rules to keep themselves busy. I have a strong feeling that the implementation will have costly consequences for us."

(a) In what specific ways may the implementation be costly for firms? (Consider the financial statement effects of adopting IAS 32 as well as the costs of accounting for convertible debt under the new requirements.)

(b) In what ways may the implementation be beneficial for users of financial statements?

(c) Contrary to the stand taken by the Board, the FASB in the United States actually adopts the view that convertible debt need not be decomposed into separate components (unlike debt with detachable warrants). Why is the FASB stand a controversial issue?

CQ9.12 Explain the differences in classifications between IAS 39 and IFRS 9.

CQ9.13 What is the rationale for the move from incurred loan provisioning method to the expected loan provisioning method? What are the pros and cons of each method?

CQ9.14 What are the three categories/buckets of financial instruments and the key factors in determining expected credit losses?

CQ9.15 Explain the securitization process.

CQ9.16 Does the following financial instrument qualify as a contractually-linked financial instrument under IFRS 9?

> Senior tranche of mortgage-backed security with the tranche's cash flows based on the principal and interest of underlying mortgage loans. The mortgage loans are prepayable at the discretion of the borrower.

CQ9.17 Company B holds the following financial instruments. State and explain the IFRS 13 Levels 1 to 3 classification of each financial instrument.

(a) Convertible bond issued by a private company.

(b) A company that was recently listed in an emerging market stock exchange. The stock of the company is inactive in this stock exchange but is actively traded in the stock exchange of its home country.

(c) Asset-backed securities issued by a bank, with the bank's credit card portfolios and retail loans as the underlying assets.

(d) Non-deliverable forwards (NDFs), which are forwards based on currencies with capital controls e.g. THB (Thai Baht) and cannot be settled offshore. These NDFs are settled in USD.

(e) Foreign currency spot contracts in emerging market currencies that are actively traded, e.g. VND (Vietnamese Dong).

(f) USD/EUR Cross-currency swaps.

(g) Credit default swap with a AA-rated company as the reference entity.

(h) An equity-linked product with prices obtained from brokers/dealers.

PROBLEMS

P9.1 Reporting of a convertible bond under IAS 32

Superior Corporation's summary statement of financial position as at 31 December 20x2 is as follows.

SUPERIOR CORPORATION
Statement of Financial Position
As at 31 December 20x2

Non-current assets	$20,000,000
Current assets	8,000,000
	$28,000,000
Current liabilities	$ 6,000,000
Non-current liability	10,000,000
Share capital	10,000,000
Retained earnings	2,000,000
	$28,000,000

Additional information:

(a) Non-current liability was made up solely of a $10,000,000 convertible bond with a coupon rate of 3% issued at par on 1 January 20x0. At the time of issue of the bond, the market interest rate was 5%. The bond was convertible into ordinary shares at the ratio of 500 ordinary shares for every $1,000 bond. Interest on the bond is payable every six months on 30 June and 31 December. The bond matured on 31 December 20x4.

(b) Superior Corporation's draft income statement reported net earnings after tax of $1,800,000.

(c) The draft financial statements were prepared by an assistant accountant who was not aware of the provisions of IAS 32 and accounted for the bond as a conventional bond without the conversion feature.

(d) Ignore taxation.

Required:

1. Show the revised summary statement of financial position as at 31 December 20x2 after making adjustments to the accounting treatment of the convertible bond in accordance with IAS 32.
2. Assume that holders of the convertible bond converted 30% of the bond on 30 June 20x2. Show the proforma equity section of the statement of financial position as at 31 December 20x2 in accordance with the provisions of IAS 32.
3. Based on (2) above, show the journal entries for 20x2.

P9.2 Accounting for the retirement of a convertible bond

On 2 January 20x0, SummerBee Corporation Ltd issued at par value a five-year convertible bond with a face value of $10,000,000. The bond carried a coupon rate of 2%. Interest on the bond was payable semi-annually on 30 June and 31 December. The bond was convertible into ordinary shares at a conversion ratio of 750 ordinary shares for every $1,000 face value of the bond. At the date of issue of the bond, the market interest rate for a similar bond without the conversion option was 5%.

Required:

1. Compute the fair value of the debt component of the convertible bond at 2 January 20x0.
2. Compute the amount of interest expense for 20x1.
3. Assume that the market yield on the bond had fallen to 3% by 1 July 20x2 and that there had been no conversion of the bond. SummerBee was contemplating whether to retire the bond. Should SummerBee retire the bond?
4. Refer to (3) above. Show the journal entries that SummerBee would record on 1 July 20x2, assuming that it decided to retire the bond at a premium of 3% above par value.

P9.3 Reclassification of a financial asset

The following events pertained to First Capital Company.

31 December 20x0	Purchased a fixed rate bond with a coupon interest rate of 8.5% per annum and a nominal value of $1,000,000. The bond matured on 31 December 20x5. Market interest rate for a similar bond on 31 December 20x0 was 8% per annum. The business model is to collect contractual cash flows and for sale.
31 December 20x1	Market interest rate for the bond fell to 6%. First Capital Company made a fair value adjustment of the bond.
31 December 20x2	Market interest rate for the bond fell to 5%. First Capital Company sold 40% of the bond. First Capital Company changed the business model for the remaining bonds held to collect contractual cash flows only.

Assume interest is received annually on 31 December.

Required:

1. Calculate the fair value of the bond at the following dates:
   (a) 31 December 20x0
   (b) 31 December 20x1
   (c) 31 December 20x2
2. Prepare journal entries to record the investment in the fixed rate bond from 31 December 20x0 to 31 December 20x2.

P9.4 Accounting for FVOCI investment

Atticus Ltd, a Singapore company, whose functional currency is the Singapore dollar, purchased 100,000 shares of Scotts Corporation (a foreign company listed in country X whose currency is the LC) at a price of LC 2.80 per share when the spot exchange rate was LC 1 to S$1.28 on 1 October 20x4. Atticus Ltd classified the long term equity investment held for strategic purpose as FVOCI. On 31 December 20x4, Scotts declared a dividend of LC 0.10 per share to be paid on 1 March 20x5. The share price of Scotts Corporation on 31 December 20x4 was LC 3.00; the spot exchange rate was LC 1 = S$1.21. The exchange rate on 1 March 20x5 was LC 1 = S$1.205.

Atticus Ltd's financial year-end is 31 December.

Required:

Prepare journal entries pertaining to the investment in Scotts Corporation, the dividend declared by the company on 1 October 20x4 and 31 December 20x4, and the receipt of the dividend on 1 March 20x5 in accordance with IAS 21 and IFRS 9.

P9.5 Accounting for mandatorily redeemable preference shares

On 1 July 20x6, Co A purchased mandatorily redeemable preference shares (MRPS) on the following terms:

Date of issue	1 July 20x6
Issuer	Co B
Notional amount	$12,000,000
Purchase price	$12,500,000
Coupon rate	3% per annum
Payment of interest	31 December and 30 June of each year
Redemption date	30 June 20x11
Prevailing interest rate:	
As at 31 December 20x6	4% per annum
As at 30 June 20x7	5% per annum

Co A is unsure whether to classify the MRPS as amortized cost, FVOCI or FVTPL.:
Co A seeks your expert advice on the financial statement effects under each of the three classifications.
Identify the following key issues:

(i) The effective interest rate to determine amortized premium is at the date of issue.

(ii) The effective interest rate method should be used to recognize interest income for amortized cost and FVOCI categories (IAS 18:30 and IFRS 9 paragraphs 5.4.1, 5.4.2, appendices A and B5.4.1-5.4.7.).

(iii) An amortization table is required to determine the effective interest income for all three classifications.

(iv) Since the premium is amortized for FVOCI investment as well, the fair value adjustment will be the difference between the fair value at a point in time and the carrying amount of the investment after adjustment for the amortization.

Required:

1. Determine the "effective interest rate" as defined by IFRS 9 paragraphs 5.4.1, 5.4.2, appendices A and B5.4.1-5.4.7.
2. Prepare the amortization table for the MRPS from 1 July 20x6 to 30 June 20x11 using the effective interest rate as at 1 July 20x6.
3. What was the fair value of the MRPS as at 31 Dec 20x6 and 30 June 20x7?
4. Show the effects on the income statement for the year ended 31 December 20x6 and the half-year ended 30 June 20x7 under each of the three classifications. page 873
5. Show the effects on the statement of financial position as at 31 December 20x6 and 30 June 20x7 under each of the three classifications.

P9.6 Accounting for mandatorily convertible redeemable preference shares

Co B is the issuer of a tranche of mandatorily redeemable convertible preference shares (MRCPS) that was issued on the following terms:

Date of issue	1 July 20x6
Issuer	Co B
Notional amount	$12,000,000
Issue price	$12,500,000
Coupon rate	2% per annum
Payment of interest	31 December and 30 June of each year
Redemption date	30 June 20x11
Prevailing interest rate on pure loan instruments issued by Co B:	
As at 1 July 20x6	3% per annum
Conversion ratio	1 ordinary share for each $1 notional amount of MRCPS

Required:

1. Identify the elements included in the MRCPS.
2. Prepare the amortization table from issue date to redemption.
3. Show the journal entries for the above issue in Co B' s books for the year ended 31 December 20x6 in accordance with the principle in IAS 32 paragraph 28 and IAS 32 paragraph 29.
4. If 50% of the MRCPS was converted on 31 December 20x8, show the journal entries to effect the conversion.

P9.7 Separation of a convertible bond

On 1 January 20x1, Delphi Company issued 4% convertible bonds with a face value of $10,000,000 at par. The bond matured on 31 December 20x5. The bond was convertible into ordinary shares of Delphi Company at a conversion price of $2.50 per share. Interest on the bond was payable semi-annually in cash on 30 June and 31 December. At the date of issue, Delphi Company could have issued a similar non-convertible bond with a five-year term bearing a coupon interest rate of 8%.

On 1 January 20x3, the convertible debenture had a fair value of $12,500,000. Delphi Company made a tender offer to the holders of the bonds to repurchase the bonds for $12,500,000. The offer was accepted by all bondholders. At the date of repurchase, Delphi Company could have issued a non-convertible debt with a three-year term bearing a coupon interest rate of 6%.

Required:

1. Allocate the carrying amount of the bond at inception to its liability and equity components.
2. Prepare journal entries at the following dates:
   (a) 1 January 20x1
   (b) 31 December 20x1
   (c) 1 January 20x3 (date of repurchase of convertible bond)

P9.8 Sale of amortized cost investment

On 1 July 20x1, Carmen Corporation purchased two bonds, Bond A and Bond B, whose issuers had different credit ratings. At the date of purchase, the effective interest rate for Bond A was 6% and the effective interest rate for

Bond B was 5%.

Bond	Nominal value	Coupon rate (fixed)	Cost	Fair value at 30 June 20x2	Maturity date
Bond A.....	$100,000	7%	$102,673	$103,719	30 June 20x4
Bond B.....	$100,000	5%	$100,000	$101,794	30 June 20x5

Additional information:

(a) Interest payments were paid by the issuers annually on 30 June each year.

(b) The fair values of the two bonds on 30 June 20x2 reflected an effective interest rate of 5% for Bond A and 4.5% for Bond B.

(c) At the date of purchase of the bonds Carmen classified both bonds as amortized cost as the business model is to hold the bond to collect contractual cash flows.

(d) Carmen Corporation's financial year-end is 30 June.

Required:

Assume that on 30 June 20x2, Carmen sold off Bond A as it urgently needed the funds to meet an unexpected contingency. Assume that the credit ratings of both bonds remained unchanged. Show the journal entries from 1 July 20x1 to 30 June 20x2.

P9.9 Impairment loss

Wello Contractors purchased construction equipment with an invoiced price of $800,000 from Capital Manufacturers on 1 January 20x1, and issued a two-year note to Capital Manufacturers. The interest rate on the note was 8% payable annually on 31 December each year. Wello Contractors duly paid the interest on 31 December 20x1, but began to experience financial difficulties in 20x2. To avoid going into bankruptcy, Capital Manufacturers and Wello Contractors agreed to restructure the note on the following terms on 1 January 20x3:

(a) The amount of the note was reduced to $500,000.

(b) The interest for 20x2 was forgiven.

(c) The maturity date of the loan was extended by two years to 31 December 20x4.

(d) The interest rate was reduced to 5% for 20x3 and 20x4, payable on 31 December each year.

Capital Manufacturers deemed the note due from Wello Contractors as individually significant.

Required:

1. What is the impairment loss incurred by Capital Manufacturers following the debt restructuring?
2. Prepare journal entries on 1 January 20x3, 31 December 20x3 and 31 December 20x4.

P9.10 Foreign currency amortized cost investment under IFRS 9

A Co has as its functional currency the Singapore dollar (S$) and enters into the following transaction. The business model of A Co is to hold investments to collect contractual cash flows that are principal and interest.

Investment in quoted bond of K Co

Date of purchase . . . . . 1 January 2010

Purchase price	US$2,675,255
Principal sum	US$2,600,000
Coupon rate	1.50% per half-year (settled every half-year)
Years to maturity from inception	3 years
Effective interest rate	1% per semi-annual
Fair value as at 31 Dec 2010	US$2,500,000
Fair value as at 31 Dec 2011	US$2,050,000

K Co is a wholly-owned subsidiary of A Co. The functional currency of K Co is the United States dollar (USD). K Co accounts for its issued bond at amortized cost. The foreign exchange rates are shown below:

	USD/S$ spot	USD/S$ forward maturing 30 June 2011
1 January 2010	1.40	1.37
Average 1st half 2010	1.39	
30 June 2010	1.38	1.36
Average 2nd half 2010	1.34	
31 December 2010	1.32	1.29
Average year 2010	1.36	1.33
Average 1st half 2011	1.25	
30 June 2011	1.20	1.20
Average 2nd half 2011	1.24	
31 December 2011	1.30	
Average year 2011	1.24	
30 June 2012	1.28	
Average 1st half 2012	1.29	

Required:

1. Prepare the journal entries for the bond transaction in A Co's books on 1 January 2010, 30 June 2010, 31 December 2010, 30 June 2011 and 31 December 2011 in accordance with IFRS 9. Ignore taxes. Ignore expected credit loss estimation in this question.
2. Prepare the journal entries for the bond liability in K Co's books for the same period as part 1.

P9.11 Foreign currency FVOCI investment under IFRS 9

Repeat part 1 in P9.10 if the investment is also held for sale, in addition to collecting contractual cash flows. Ignore expected credit loss estimation in this question.

P9.12 Foreign currency FVTPL investment under IFRS 9

Repeat part 1 in P9.10 if the investment is held for sale but not for collection of contractual cash flows.

P9.13 Reclassification of foreign currency FVOCI investment to amortized cost under IFRS 9

Use the same example in P9.11. The investment is reclassified from FVOCI to amortized cost on 1 January 2012. Prepare the journal entries on 1 January 2012 to record the reclassification of the investment.

P9.14 Reclassification of foreign currency FVTPL investment to amortized cost under IFRS 9

Use the same example in P9.12. The investment is reclassified from FVTPL to amortized cost on 1 January 2012. Prepare the journal entries on 1 January 2012 to record the reclassification of the investment.

P9.15 Expected credit loss under IFRS 9

Bank X gives 20 loans of $100,000 each, a total of $2,000,000 to company A. At initial recognition, the expected loss rate based on historical trend for company A is one default in the first year, with present value of loss at $90,000. The macroeconomic environment deteriorates significantly subsequently at reporting date. Bank X assesses company A's credit risk to have increased significantly. At reporting date, company A is expected to have six defaults per 20 loans over the lifetime of the loans, with present values of the loss at $500,000.

Required:

1. Calculate the loss rates at initial recognition and at the reporting date, and the increase in expected credit loss at reporting date from initial recognition.
2. State the factors to consider if a borrower's credit risk has increased significantly at reporting date.

P9.16 Expected Credit Loss with Significant Deterioration in Credit Risk

Company K purchased $1 million face value of bonds issued by company J on 1 July 2015 at purchase cost of $1.05 million. The bond had coupon of 6% payable semi-annually, and matures on 30 June 2017. Company J bond was rated at investment grade by credit rating agencies on 1 July 2015.

On 31 December 2015, company J paid its bond coupon and there is no significant change in its credit condition. Company K estimates the probability of default in the interest payments of subsequent year 2016 to be 5%. Market price of bond on 31 December 2015 was $1.03 million.

In 2016, company J lost a major customer and the economic environment deteriorated with significant loss of business orders. As a result, company J reported a huge loss in the year 2016. The credit spreads of the company J bonds traded in the market widened significantly in response to the increase in credit risk of company J. The credit rating agencies lowered the rating of company J bond by two notches, but still within investment grade.

Company J paid the 30 June 2016 interest payments in full. On 31 December 2016, company K estimates the probability of default in the principal payment to be 20%. Market price of bond on 31 December 2016 was $830,000.

Eventually company J paid the remaining interest and principal in full.

Required:

Determine the expected credit losses on 31 December 2015 and 31 December 2016 recorded in company K's book.

Prepare company K's journal entries from 1 July 2015 to 30 June 2017, in accordance with IFRS 9 based on both business models:

(a) The bond was held to collect contractual cash flows;

(b) The bond was held to collect contractual cash flows and for sale.

P9.17 Expected Credit Loss with Impairment

Company X purchased $2 million face value of bonds issued by company Y on 2 January 2013 at purchase cost of $1.94 million. The bond had coupon of 5% payable annually, and matures on 31 December 2014. Company J bond was rated at investment grade by credit rating agencies on 2 January 2015.

In the year 2013, company X discovered a fraud by a senior manager that caused a significant loss. Company X share prices declined significantly and bond credit spreads widened. Its business was expected to worsen that could potentially threaten its solvency. The credit rating agencies downgraded the rating of company Y bonds to junk status on 31 December 2013. Company X expects no interest to be made for 2013 and 2014, and 20% of the principal to be recovered. The bond market value was $360,000 on 31 December 2013.

Eventually company Y paid $345,000 on the principal and defaulted on the interest.

Required:

Determine the expected credit losses on 31 December 2013 recorded in company X's book.

Prepare company X's journal entries from 2 January 2013 to 31 December 2014, in accordance with IFRS 9 based on both business models:

(a) The bond was held to collect contractual cash flows;

(b) The bond was held to collect contractual cash flows and for sale.

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[1] See Finnerty, J.D., 1988. "Financial Engineering in Corporate Finance: An Overview", *Financial Management*, 17(4), pp. 14–33.

[2] IAS 32 paragraph 4.

[3] This is known as the fixed-for-fixed criterion in practice

[4] This is in contrast with IAS 39 in which an embedded derivative is required to be separated from its host instrument if its economic characteristics are not closely related to that of its host instrument. Hence on initial recognition of the hybrid instrument, the equity conversion option which is a derivative financial asset is determined first. The residual after deducting the fair value of the derivative financial asset from the fair value of the consideration paid for the hybrid instrument is allocated to the loan (host instrument).

[5] However, there is separate recognition of the debt and equity components in the case of a bond issued with detachable warrants.

[6] Present value calculation using a spreadsheet function or financial calculator is $92,980,308.

[7] For further explanations, refer to Yeo, G., P. Tan and T.M. Tan, 1994. "Accounting for Compound Financial Instruments under Exposure Draft 40", *Accounting and Business Review*, Singapore, 1(1), pp. 85–105.

[8] If there is no par value of shares, the total paid-up capital is credited to the share capital account. The share premium account is included in share capital. This textbook assumes this scenario.

[9] The hybrid contract that paragraph 4.3.3 refers to is a hybrid contract with an underlying host instrument that is not a financial asset within the scope of IFRS 9.

[10] Paragraph B4.3.5(e) of IFRS 9 requires the assessment of whether the call or put option is closely related to the host debt contract to be made before separating the equity element of a convertible debt instrument in accordance with IAS 32.

[11] Equity is higher in earlier years because of the equity option; debt is lower because of the existence of the unamortized discount.

[12] The exception to this principle is derivatives that prevent a transfer of financial assets and liabilities from being accounted for as a sale. For instance, a call option that is retained by a transferor may prevent the transfer of financial asset from being accounted for as a sale. In this situation, that call option is not separately recognized as a derivative asset. (B3.2.14 of IFRS 9)

[13] This requirement would not apply if the entity on initial recognition had irrevocably designate a financial asset as measured at fair value through profit or loss on initial recognition, i.e. the fair value option is invoked (B4.1.5 of IFRS 9).

[14] Fair Value Option (FVO) IFRS 9 provides entities options to treat the financial instruments (which otherwise would have been accounted for at amortized cost or FVOCI) at FVTPL. This option is allowed to eliminate a measurement inconsistency between assets and liabilities, also called an accounting mismatch. An example is where the assets are classified at amortized cost and the liabilities at FVTPL. This arises when a group of assets and liabilities are managed and performance evaluated on fair value basis based on documented risk management or investment strategy. The effects of changes in fair values of financial liabilities designated at FVTPL attributable to credit risk are recognized in OCI.

[15] Principal is not defined in IFRS 9 but paragraph 4.1.3 states that principal is the fair value of the financial asset at initial recognition for the purpose of applying the SPPI test.

[16] Interest consist of consideration for the time value of money, for credit risk associated with the principal amount outstanding and for other basic lending risks and costs, as well as a profit margin (4.1.3(b) of IFRS 9).

[17] Ryan, Stephen G., 2008. Accounting in and for the Subprime Crisis. *The Accounting Review* 83(6), pp.1605–1638.

[18] These liabilities as well as derivatives that are liabilities are subsequently measured at fair value.

[19] The exception to this is in the case of purchased or originated financial assets that are credit impaired on initial recognition. In this case, the expected credit losses will be factored into the expected cash flows for the EIR computation. This is known as credit-adjusted EIR. For the purpose of this chapter, we will not be discussing the accounting treatment for this category of financial assets.

[20] However, IFRS acknowledges that there could be situations where there may be evidence that the modified financial asset is credit-impaired at initial recognition, following a modification that results in derecognition of the original financial asset. In that case, the financial asset should be recognized as an originated credit-impaired financial asset under IFRS 9.

[21] IFRS 9 paragraph 4.1.

[22] Paragraph 3.2.12 and 3.2.13 of IFRS 9.

[23] The terms are considered substantially different if the discounted present value of the cash flows under the new terms, including any fees paid net of any fees received and discounted using the original effective interest rate, is at least 10% different from the discounted present value of the remaining cash flows of the original financial liability.

[24] IFRS 9 sets out a special approach for financial assets that are credit-impaired at initial recognition. A different set of rules is set out for measuring the loan loss allowance for this category of financial assets. For the purposes of this chapter, we will not be discussing this approach.

[25] For financial assets measured at FVOCI, IFRS 9 requires the same impairment requirements for recognition and measured to be adopted. However, IFRS 9 requires the loss allowance to be recognized in other comprehensive income and not to reduce the carrying amount of the financial asset in the statement of financial position (Paragraph 5.5.2 of IFRS 9).

[26] Paragraph B5.5.22 provides some scenarios where credit risk is considered to be low: (i) the financial instrument has a low risk of default, (ii) the borrower has a strong capacity to meet its contractual cash flow obligations in the near term, and adverse changes in economic and business conditions in the longer term may, but not necessarily, reduce the ability of the borrower to fulfill its contractual cash flow obligations.

[27] This requirement applies only to financial assets that became credit impaired after initial recognition. For those financial assets that are purchased or originated credit impaired, the interest revenue is always calculated on a net basis under paragraph 5.4.1(a) of IFRS 9. This is notwithstanding that the credit risk of the asset may have improved after initial recognition. Note: Purchased or originated credit impaired financial assets are not within the scope of this book.

[28] IAS 32 clarifies that the nature and extent of the right of set-off, including any conditions attached to its exercise and whether it would remain in the event of default or insolvency or bankruptcy, may vary from one legal jurisdiction to another. Therefore, an entity cannot assume that the right of set-off is automatically available outside of the normal course of business. For instance, in some local jurisdiction, bankruptcy or insolvency laws may prohibit, or restrict, the right of set-off in the event of bankruptcy or insolvency.

[29] Balla, Eliana and McKenna, Andrew B., 2009, Dynamic Provisioning: A Countercyclical Tool for Loan Loss Reserves, *Economic Quarterly*, 95(4), pp. 383–418.

CHAPTER

10

Accounting for Derivatives and Hedge Accounting

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand what constitutes a derivative instrument;
- **LO2** Understand the different types of derivatives;
- **LO3** Know how derivatives are used;
- **LO4** Understand the accounting treatment of derivatives;
- **LO5** Understand hedge accounting, its rationale, and the conditions for applying hedge accounting; and
- **LO6** Appreciate the three main types of hedge relationships and their accounting treatments.

DERIVATIVE FINANCIAL INSTRUMENTS

The term “derivative financial instruments” or “derivatives” brings to mind the spectacular headline stories of the collapse of Barings Bank Ltd and the sudden bankruptcy of Long Term Capital Management and Orange County. However, these unfortunate and exceptional incidents should not overshadow the fact that derivative instruments serve a variety of purposes and play a very important role in the risk management strategies of banks, insurance companies, and commercial enterprises. The versatility of derivatives explains their popularity and widespread use.

Accounting for derivative instruments depends on the purpose for entering into derivative contracts. It is important, therefore, from an accounting point of view, to understand what constitutes a derivative and the reasons enterprises enter into contracts involving derivatives.

IFRS 9 defines a derivative as a financial instrument or other contract within the scope of IFRS 9 that meets three criteria:

1. Its value changes in response to a change in an “underlying.” The underlying can be the price of a commodity, such as soybeans, or a financial instrument, such as a fixed rate bond. It can also be a rate such as a foreign exchange rate or a specified interest rate, for example, the London Interbank Offer Rate;
2. It requires little or no initial net investment; and
3. It is settled at a future date.

Although net settlement (i.e. the settling of the difference between the contracted price and the spot price at closure or maturity date) is not a condition for a derivative, net settlement is a common practice in financial markets. If a derivative is settled through the receipt or payment of cash or other financial instruments, the derivative is also a financial instrument that falls within the scope of IFRS 9. For example, an oil derivative is a financial instrument if it is likely to be settled net in cash at closure. Net settlement gives rise to an expected exchange of cash or other financial instruments that qualifies it as a financial instrument as defined by IAS 32 paragraph 11. However, if an entity enters into an oil derivative contract for the purpose of taking physical delivery of the oil at the maturity date, it is a commodity derivative and not a financial instrument because there is an expected receipt of physical inventory. IFRS 9 requires an evaluation of whether the contracts were “entered into and continue to be held for the purpose of the receipt or delivery of a non-financial item in accordance with the entity’s expected purchase, sale or usage requirements,” commonly known as the own use exemption.

A derivative must also entail little or no initial net investment. A prepaid forward contract to purchase inventory to be delivered in six months does not meet the criterion of little or no investment as the price has been paid in full. Table 10.1 shows some typical derivatives and their underlying. These derivatives can be used by producers, consumers, trading firms, corporates, and financial institutions.

TABLE 10.1 Examples of derivative instruments and their underlying

Type of derivative instruments	Underlying
Options contract (call and put)	Security price
Forward contracts, e.g. foreign exchange forward contracts	Foreign exchange rates
Futures contracts, e.g. commodity futures	Commodity prices
Swaps, e.g. interest rate swap	Interest rate

In HSBC’s 2009 annual report, derivatives make up 11% of HSBC’s total assets and total liabilities. These are the unrealized profits (assets) and unrealized losses (liabilities) on derivatives.

Uses of Derivatives

Generally, entities or individuals transact in derivatives to:

1. Manage market risks such as foreign exchange risk and interest rate risk;
2. Reduce borrowing costs; or
3. Profit from trading or speculation.

Types of Derivatives

Derivatives differ in terms of characteristics that influence their fair values. For our purpose, we can distinguish between two main groups of derivatives:

1. Forward-type derivatives such as forward contracts, futures contracts, and swaps; and
2. Option-type derivatives such as call and put options, caps, and collars and warrants.

There are two forms that derivatives can take: free-standing derivatives and embedded derivatives. An embedded derivative is a derivative that is combined with (or embedded in) a host instrument that is not a derivative. An appreciation of the characteristics and form of derivatives is important to understanding the accounting treatment of derivatives.

The following sections discuss the major types of derivatives, how their fair values are derived, and the accounting treatment of derivatives as speculative trading and hedging instruments. Derivatives may be based on interest rates, foreign exchange, equities, credit, or commodities as the underlying risk types. Within the two main groups of derivatives (forwards and options), each group includes derivatives of different risk types. Examples of interest rate derivatives in the "forwards" category include interest rate swaps, futures, forward rate agreements, and in the "options" category, include caps and floors; foreign exchange derivatives in the "forwards" category include FX spot, FX forwards, FX swaps, cross-currency swaps, and in the "options" category, include FX options. Exchange-traded derivative fair values are calculated based on quoted market prices. Over-the-counter derivative fair values are derived from valuation models such as discounted cash flow and option pricing models.

Derivatives are used to hedge or trade/speculate on different types of risks. A brief overview of the risk types is as follows. Interest rate risks cover duration risk and interest rate repricing or gapping risks. Credit risks are functions of the probabilities of default and losses given default. Counterparty credit risks arise when a trade is in-the-money and the counterparty defaults. It is an interaction between interest rate risk and credit risk. An example when counterparty risk arises is in an interest rate swap transaction. Market price risks include commodity risk, for example, oil and gas and agricultural products. Liquidity risks arise from the inability to sell or close the open trade in an inactive market. During the credit crisis, the market became illiquid after Lehman Brothers became insolvent as financial institutions were unwilling to lend to one another out of concern over credit risks, which morphed into a liquidity crisis.

Forward Contracts

A forward contract is an agreement between two parties (called counterparties) whereby one party agrees to buy and the other party agrees to sell a *specified amount* of an item (the notional amount) at a *fixed price* (also called forward price or forward rate) for delivery at a *specified future date* (also known as maturity date or forward date). Forward contracts are two-sided as they involve performances by both parties.

A forward contract is either a forward purchase contract or a forward sales contract from the perspective of the individual counterparties. For example, on 1 June 20x4, Ace Company, whose functional currency is the dollar, purchased goods from an overseas supplier at an invoiced price of 100,000 euros with payment due on 31 July 20x4. It could wait until 31 July 20x4 to purchase euros from the spot exchange market to pay the supplier or it could enter into a forward contract to purchase 100,000 euros for delivery on 31 July 20x4. Suppose that the forward rate on the contract was $1.80/euro. This means that on 31 July 20x4, Ace Company would pay $180,000 to the foreign exchange broker and receive 100,000 euros no matter what the euro-dollar exchange rate was on that date. Thus, the

forward purchase contract locks in the purchase price in dollars. On the other hand, a local exporter selling goods denominated in the euros to an European customer may want to lock in the sales proceeds in dollars by entering a forward sales contract for the euros that is equivalent to the invoiced amount for delivery on the settlement date.

Forward contracts are not standardized contracts as they are not traded on an exchange. Therefore, there is no readily available quoted price for such contracts. Because they are not traded on regulated exchanges, forward contracts carry higher counterparty risks than other similar instruments such as futures contracts. However, they have the advantage of flexibility as they can be tailored to the specific needs of the counterparties. Additionally, forward contracts generally involve lower transaction costs as compared to other types of derivatives such as options contracts.

The fair value of a forward contract can be estimated as follows:

$$\text{Notional amount} \times \frac{(|\text{Current forward rate} - \text{Contracted forward rate}|)}{(1 + r)^t}$$

where contracted forward rate is the forward rate fixed at the inception of the contract, current forward rate is the forward rate for the remaining period to maturity (also known as the "market forward rate"), r is the discount rate and t is the period to maturity. The reason for discounting is the time value in the forward contract as it is settled only at a future date (the maturity date) and, therefore, represents a future cash amount.

The fair value of a forward contract at inception date is nil. There is no initial outlay, and neither party has a gain or a loss at the inception of the contract. From the inception date to maturity, the fair value of a forward contract can either be positive (indicating a gain and an asset) or negative (indicating a loss and a liability) depending on the relationship between the current forward rate and the contracted forward rate, and whether it is a forward purchase or a forward sale contract (see Table 10.2).

TABLE 10.2 Changes in the fair value of a forward contract after inception date

	Current forward rate > contracted forward rate	Current forward rate < contracted forward rate
Forward purchase contract	• Fair value is positive • A gain is recorded • In the statement of financial position, the forward contract is an asset	• Fair value is negative • A loss is recorded • In the statement of financial position, the forward contract is a liability
Forward sale contract	• Fair value is negative • A loss is recorded • In the statement of financial position, the forward contract is a liability	• Fair value is positive • A gain is recorded • In the statement of financial position, the forward contract is an asset

It should be noted that at the date of maturity of the forward contract, the forward rate converges to the spot rate on that date since there is no further period remaining on the contract. This means that the fair value of the forward contract at maturity date is the difference between the spot rate at the maturity date and the contracted forward rate multiplied by the notional amount of the contract.

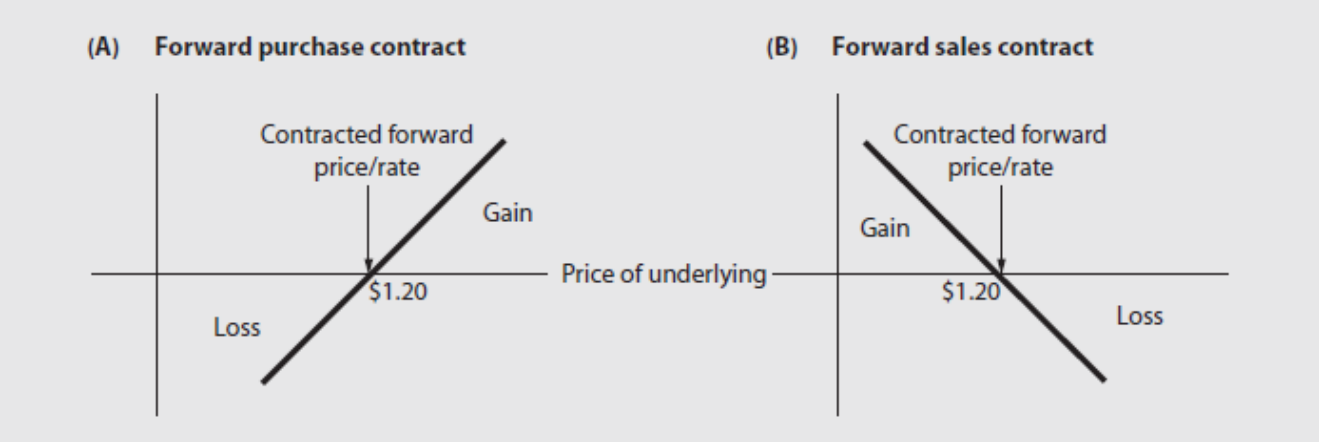
The premium (or discount) on the forward contract is considered the interest or time value, which is measured by the difference or spread between the forward rate and the spot rate at a point in time. Changes in the time value component are not directly related to changes in the underlying (the spot price or market rate), but are due to a number of factors including the costs of holding the commodity or underlying by the counterparty, the risk-free rate and the period to maturity. If the forward contract is for hedging purposes, the premium or discount can be considered as the cost of hedging. As an example, suppose an entity expects to receive FC 100,000 (100,000 foreign currency units) from a certain party in three months' time, and the spot exchange rate now is \$1.80/FC 1 (1 FC unit buys \$1.80). The entity can either wait three months to collect the FC 100,000 and then convert the amount

into dollars at the prevailing spot exchange rate then or enter into a three-month forward sales contract at a forward rate of $1.78/FC 1. Suppose that three months later, the spot exchange rate is $1.80/FC 1. If the entity had not entered into the forward contract, the amount in dollars that it would receive upon converting the FC 100,000 would have been $180,000. By entering into the forward contract, it received $178,000. The difference of $2,000 [($1.80 − $1.78) × FC 100,000] represents the cost of the forward contract transaction (or the cost of hedging).

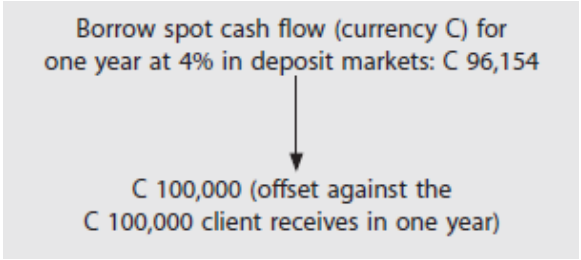
Figure 10.1 shows the pay-off diagrams for a purchase forward contract (panel A) and a forward sales contract (panel B). With reference to panel A, assume that the underlying is the price of a commodity and the forward price is $1.20 per unit. The horizontal axis represents the price of the underlying. At inception, the fair value of the forward contract is nil. If the underlying (the price of the commodity) exceeds $1.20, there is a gain on the forward purchase contract and the fair value of the forward contract becomes positive (shown as an asset in the statement of financial position). On the other hand, if the price of the underlying falls below $1.20 per unit, there is a loss on the forward purchase contract and the fair value of the forward contract is negative (shown as a liability in the statement of financial position). Panel B shows the pay-offs for a forward sales contract. Using the same example of a forward price of $1.20 per unit, the pay-offs are opposite those of a purchase contract. The forward sales contract results in a gain if the underlying is less than $1.20 per unit and a loss if it is above this price. As a forward contract can result in either a gain or a loss, it is said to have a *symmetric pay-off profile*. Illustration 10.1 shows the determination of the fair value of a forward contract.

page 884

FIGURE 10.1 Pay-off diagrams for a forward contract



An FX forward price is a combination of the spot price and the cost of carry. FX spot prices are provided by spot market makers while swap prices are supplied by money market traders. A hypothetical example of the FX forward pricing is as follows: Client receives 100,000 units of foreign currency C in one year and wants to hedge the decline in C against base currency B. The current spot exchange rate is 2.00 and the interest rates are C: 4% and B: 10%.



Use

$$\begin{aligned} PV &= \frac{FV}{(1+g)} \\ &= \frac{C\ 100{,}000}{(1+4\%)} \\ &= C\ 96{,}154 \end{aligned}$$

Sell discounted cash flow in the spot market to generate cash flow in B:

$$\frac{C96{,}154}{2.00} = B48{,}077$$

Lend the "base" currency cash flow for one year at 10% in the deposit markets:

$$\begin{aligned} FV &= P \times (1+g) \\ &= B\ 48{,}077 \times (1+10\%) \\ &= B\ 52{,}885 \end{aligned}$$

The forward price is

$$\frac{C100{,}000}{B52{,}885} = 1.8909$$

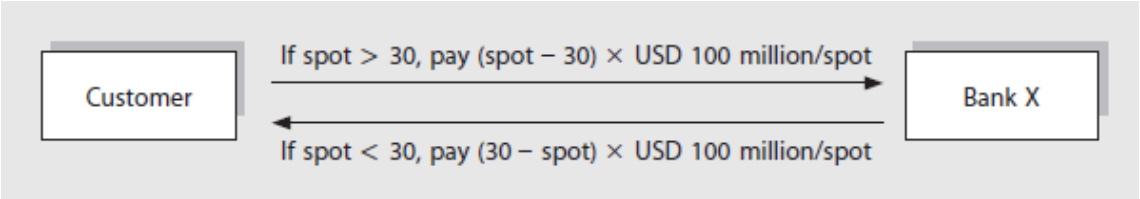
page 885

The cash flow from the bank's perspective is shown below:

Currency	B		C
Spot date	47,619.05	Spot trade @ 2.00	(96,154)
	(47,619.05)	←	96,154
	Deposit @ 10%		Loan @ 4%
Future date	52,885	Repayments →	(100,000)
		Forward trade @ 1.8909	
	(52,885)		(100,000)

High yielding "base" B (lower yielding "counter" C) results in a forward rate lower than the spot rate (the buyer of B has the benefit in the use of currency B from spot date to the forward date). Buying currency B forward gives the buyer a benefit in the form of a lower price relative to the spot rate.

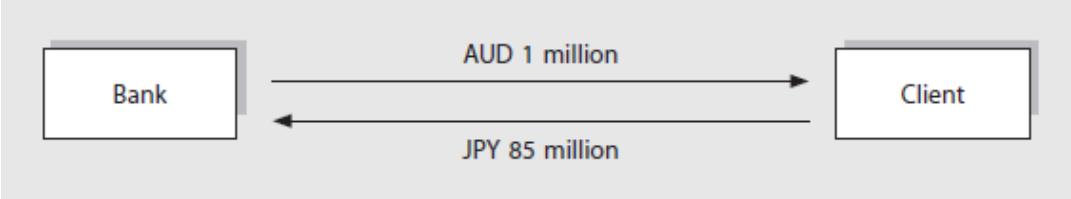
Non-deliverable Forwards: Net Settled in USD For example, on 5 January 2002, bank X offers non-deliverable forward (NDF) with these terms: maturity = 3 months, notional principal 1 = USD 100 million, notional principal 2 = THB 3.0 billion, reference rate: spot THB/USD exchange rate, rate set at maturity, payment date: spot settlement, bank X (customer) pays if reference rate < (>) THB 30.00/USD. Market risks of NDF are due to NDF (spot and interest rate) market rates. Credit risks are assessed based on customer business (whether the positions in the right or wrong way).



If the customer is a Thai exporter, receipts are in USD, strengthening of USD improve its USD receipt values and credit quality. The Thai customer has to pay on the NDF. The NDF is a right way trade to the customer because the gain on USD export receipts offset the loss on the NDF trade.

A special case of FX forward instrument is FX spot, in which the exchange or settlement of different currencies takes place two working days after the transaction date (spot date). The bulk of FX spot trades are interbank transactions. One unit of traded commodity/base currency is priced in terms of another counter currency, and the difference between the buy or bid rate and the sell or offer rate is the spread.

A FX swap is a combination of a spot and a forward contract. An example of an outright six-month forward trade with a client is shown below:



There are two types of risks: spot exchange risk and interest rate risk. The forward trade with client is covered by spot hedge (to cover spot exchange risk) and FX swap (spot leg and forward leg to cover interest rate risk). The residual JPY cash flow is JPY 30,000.

Currency	AUD		JPY
Spot date	(1,000,000)	Spot hedge @ 85.90 →	85,900,000
	1,000,000	← Spot leg @ 85.87	(85,870,000)
Future date (6 months)	(1,000,000)	Forward leg @ 85.00 →	85,000,000
	1,000,000	← Forward trade (client) @ 85.00	(85,000,000)

An FX swap is equivalent to a pair of opposite FX trades (spot and forward). Alternatively, the bank could borrow AUD and invest JPY cash flow for six months. At the end of six months, the bank receives the AUD from the client to repay the AUD borrowing, and uses the JPY from investment to pay the client. However, the money market trades are on the statement of financial position and would put pressure on a bank's capital adequacy ratios. Conversely, the credit risk on FX swaps is a "replacement risk." The swap price is derived as follows:

$$S = \frac{\text{Spot rate} \times (Gc - Gb)}{(1 + Gb)}$$

Assume the following rates for six months (182 days): AUD 3.3/8% – 3.1/4% and JPY 1/4% – 1/8%, spot AUD/JPY 84.98/03; swap market makers set all spot legs at 85.00. For the side of swap where the market maker charges points, use AUD interest rate (higher yielding currency) for borrowing cost (deposit dealer's offer rate) (Gb) and JPY interest rate (lower yielding currency) for investment returns (deposit dealer's bid rate) (Gc).

$$\text{Swap points} = \frac{85.00 \times (0.00125 - 0.03375) \times 182/360}{1 + (0.03375 \times 182/360)}$$
$$= -1.37 \text{ or } -137 \text{ pips}$$

For the side of swap where market maker pays away points, use AUD interest rate (higher yielding currency) for investment returns (deposit dealer's bid) (Gb) and JPY interest rate (lower yielding currency) for borrowing cost (deposit dealer's offer rate) (Gc).

$$\text{Swap points} = \frac{85.00 \times (0.0025 - 0.0325) \times 182/360}{1 + (0.0325 \times 182/360)}$$
$$= -1.27 \text{ or } -127 \text{ pips}$$

The two-way swap quote derived from above money market rates is 137/127. The top portion of the quote indicates that the swap trader is charging points because the user is effectively borrowing the higher yielding currency. The bottom portion of the quote indicates that the swap trader is giving points since the user is effectively lending the higher yielding currency.

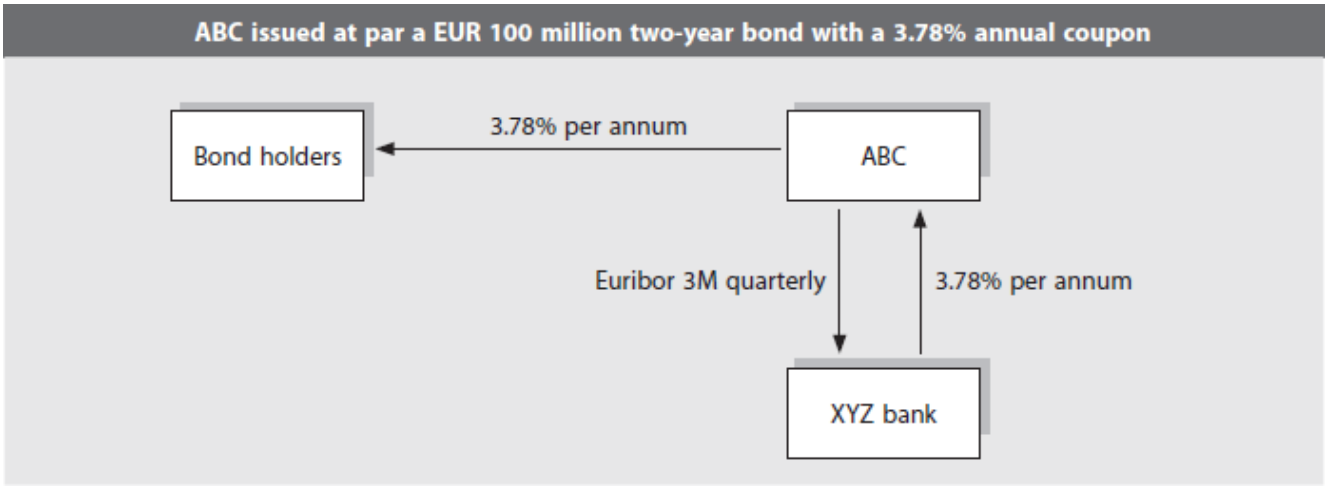
Examples of interest rate derivatives include interest rate swaps, interest rate futures, forward rate agreements, and interest rate options such as caps and floors. One of the simplest derivatives, an interest rate swap, is used for illustration. An interest rate swap involves an exchange of interest cash flows between two parties: one party receives fixed interest cash flows and pays floating interests in the same currency to another party. The underlying reasons for carrying out an interest rate swap are either hedging or trading. If the exchange of interest flows is in different currencies, the swap is called a cross-currency swap. An industrial entity typically does an interest rate or cross-currency swap for hedging purposes via its corporate treasury function.

page 887

Trading in swaps is not the core function of an industrial entity. A European industrial entity may borrow Eurodollars to fund its business operations in the United States because the entity can borrow more cheaply in Eurodollars, which is the entity's domestic currency. Its revenue is in US dollars. In order to eliminate the foreign exchange risk between Eurodollars and US dollars, the industrial entity carries out a cross-currency swap with a bank. In this trade, the industrial entity receives US dollars and pays Eurodollars to the bank on trade date. The opposite cash flows are made on the maturity date. During the life of the cross-currency swap, the interest cash flows are made in both Eurodollars and US dollars. The industrial entity uses this transaction to convert the Eurodollar funding to a US dollar funding. The bank records a Eurodollar versus US dollar cross-currency swap. The bank faces both foreign exchange and interest rate risks. The bank may decide to offset its risks with an interbank cross-currency swap or to trade on the swap. The bank has to fair value the trading swap under IFRS 9. Under fair value accounting, an asset item or a liability item is created for fair value gains and losses respectively with the corresponding gains or losses in the profit or loss.

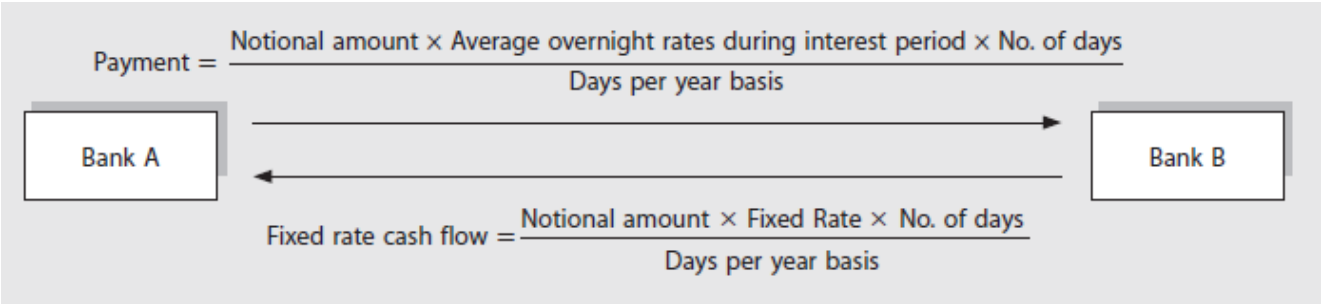
This generic accounting treatment applies to most trading products, even though the valuation gains or losses of the products differ. The cash flows of a trading product are generally recognized as gains or losses in the income statement since the market value of the product has factored in the cash flows. For example, when interest is settled in cash for the cross-currency swap, the market adjusts the swap value for the cash settlement because the swap value is the present value of its discounted cash flows. The rationale is similar to that of stock price adjustment for ex-dividends. Other trading products include credit derivatives such as credit linked notes and credit default swaps, as well as equity derivatives such as equity swaps.

In the example below,[1] an interest rate swap is used to convert cash flows for ABC from fixed rate liability to floating rate liability.



Swap price is the net present value of discounted cash flows, with interpolation of discount factors for the value dates. A special case of swaps is the overnight index swaps (OIS). In an OIS, the overnight interest rate is set daily. The OIS switches term funding into overnight funding or switches interest earned on investments based on long-term fixed rates into overnight rates. The latter approach aims to increase the yield on term investments when overnight rates are higher than term rates.

page 888



In cross-currency swaps, there are exchanges of principal sums in different currencies. The counterparties in a cross-currency swap are effectively borrowing in one currency and lending in another currency.

Forward Rate Agreement A forward rate agreement (FRA) is an over-the-counter (OTC) agreement between a buyer and seller based on a fixed interest rate to be paid or received on a notional amount at a determined future date. The buyer of a FRA hedges against interest rate increases and receives payment when the reference rate is above the fixed rate and the seller hedges against interest rate declines.

For example, X lends to Y for the period between T_1 and T_2. For a three-month to six-month FRA, the fixed interest rate starts in three months' time T_1 and last for three months to T_2. The fixed rate is agreed between X and Y at T_0. The reference rate is the forward LIBOR rate between T_1 and T_2. X pays Y the following settlement amount at T_1. This is the difference between reference rate and fixed rate multiplied by the notional principal and time between T_1 and T_2 in years, discounted from T_2 to T_1 (denominator is the discount factor).

$$\text{Payment} = \frac{\text{Notional amount} \times [(\text{Reference rate} - \text{fixed rate}) \times \text{No. of days}/(360 \text{ or } 365)]}{1 + \text{Reference rate} \times \text{No. of days}/(360 \text{ or } 365)}$$

3-6 FRAs – the fixed interest rate starts in 3 months' time and last for 3 months

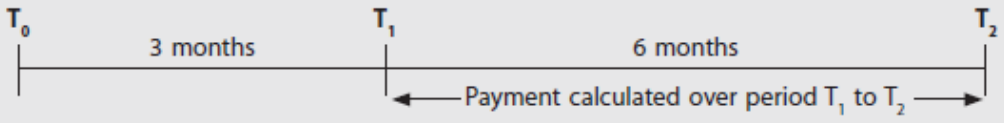


ILLUSTRATION 10.1 Fair value of a forward contract

On 1 March 20x5, Company A entered into a forward contract with a foreign exchange dealer to buy one million foreign currency (FC) units (FC 1,000,000) for delivery on 30 May 20x5. The following exchange rates are given:

Date	Spot rate $/FC	30 May forward rate $/FC
1 March 20x5	$1.185	$1.20
31 March 20x5	1.19	1.21
30 April 20x5	1.20	1.205
30 May 20x5	1.215	1.215

page 889

The fair value of the forward contract is calculated using a 5% (per annum) discount rate. The changes in the fair value of the forward purchase contract are as follows:

Date	Contracted forward rate (a) FC 1 =	Current forward rate (b) FC 1 =	Notional amount (c)	Discount factor (d)	Fair value of forward contract [(b − a) × c]/d	Change in fair value
1 March 20x5	$1.20	$1.20	$1,000,000	$ 0	$ 0	$ 0
31 March 20x5	1.20	1.21	1,000,000	1.00835	9,917	9,917
30 April 20x5	1.20	1.205	1,000,000	1.004167	4,979	(4,938)
30 May 20x5	1.20	1.215	1,000,000	1.0	15,000	10,021

The following points should be noted:

1. At inception, the fair value of the forward contract is nil. The fair value of the forward contract after inception is determined based on the change in the forward rate from the inception date to the end of the current period, discounted at 5%.
2. At 31 March 20x5, there were two months remaining in the forward contract. The fair value of the forward contract is $9,917, which is calculated as follows:
$$[\$1{,}000{,}000 \times (|1.21 - 1.20|)] \div (1 + 0.05/12)^2 = \$10{,}000/1.00835$$
3. At 30 April 20x5, the fair value of the forward contract was $4,979 [1,000,000 × (|1.205 – 1.20|)] ÷ (1 + 0.05/12). At 30 May 20x5, the fair value of the forward contract was (|1.215 – 1.20|) ÷ 1,000,000 = $15,000. The number of days left in the contract is zero, so the discount factor is 1.

4. The fair value of the purchase forward contract is positive, as the amount payable under the contract ($1,200,000) is less than the amount receivable ($1,215,000) based on the spot rate at maturity. In the statement of financial position, the forward contract will be reported under Current Assets. However, it is possible for a forward contract to show a loss. For example, if the $/FC spot rate on 30 May 20x5 is $1.19, the fair value of the forward contract is –$10,000.

Futures Contracts

A futures contract is a contract between a buyer or seller and a clearing house or an exchange. Examples of the exchanges include the Chicago Board of Trade (CBOT), LIFFE (London International Financial Futures and Options Exchange, until it was taken over by Euronext followed by the Euronext merger with NYSE), CME (Chicago Mercantile Exchange) and the Singapore Exchange (SGX). There is a wide range of exchange-traded futures contracts. Some of the main types of futures contracts are:

1. Commodity futures, for example, wheat, cotton, sugar, and pork bellies;
2. Interest rate futures, for example, treasury bill futures, treasury bond futures, Eurodollar futures, Euribor futures, Euroyen futures; and
3. Currency futures.

A futures contract shares some similarities with a forward contract. As with a forward contract, a futures contract involves obligations on the part of the buyer to take delivery and the seller to make delivery of a specified quantity of an item at a specified date in the future. Both futures and forward contracts have a symmetric pay-off profile. At inception, there is a difference between the spot price or rate and the futures price or rate, which is often referred to as the *spot-forward differential*. This is equivalent to the premium or discount on forward contracts. However, futures contracts possess many characteristics that are not present in forward contracts. The following are some of these characteristics:

page 890

1. A futures contract is traded on an exchange in standard lot sizes (quantity) and for designated items only. In this respect, it is not as flexible as a forward contract, which can be tailored to the specific needs of at least one of the parties. However, the involvement of an exchange virtually eliminates the counterparty risk in a forward contract.
2. Futures contracts can be closed out before maturity by entering into an identical contract that is in the opposite position. For example, a long position in a futures contract is closed out by a short position in an identical futures contract.
3. A futures contract requires the payment of a *margin deposit*, which may range from 1% to 10% of the notional value. The margin deposit, which has to be maintained throughout the duration of the contract, serves as a type of security deposit and does not represent the transaction cost or the initial investment. The margin deposit has to be topped up in the event that losses on the futures contract erode the required maintenance margin. The margin deposit is refunded when the contract is closed. The margin requirements mitigate counterparty credit risk.
4. As futures contracts are marked-to-market and changes in the value of outstanding contracts are usually settled in cash on a daily basis, *no discounting is necessary*, unlike forward contracts. The requirement to settle on a daily basis also reduces default risk.
5. Futures contracts rarely result in physical delivery. In practice, a party that has bought or sold a futures contract usually closes the open position before maturity date by entering into an offsetting futures position.

The purchaser of a futures contract is said to have a *long position* while the seller of a futures contract is said to have a *short position*. The interest rate future is sold to hedge against interest rate increases because when interest rate increases, the value of futures will fall and the seller makes a profit on the short futures position. Since futures contracts are traded on an exchange and are marked-to-market, the quoted price readily provides a measure of the fair value of a futures contract (for example, the price of an interest rate future is 100, less interest rate). When the spot

price (the underlying) increases, a long position in a futures contract results in a gain while a short position results in a loss. Conversely, when the underlying decreases, a long position results in a loss while a short position produces a gain. Thus, as with forward contracts, futures contracts have a symmetrical pay-off profile.

Option Contracts

An option contract is a contract that gives the holder the right but not the obligation to buy or sell a specified item (which can be a commodity, a financial instrument or an equity instrument) at a specified price (called the exercise or strike price) during a specified period of time. A *call option* gives the holder the right but not the obligation to buy a specified item at the strike price. A *put option* gives the holder the right to sell (or require the options writer to buy) a specified item at a strike price. There are two types of options: the American option and the European option. An American option is exercisable any time between inception and maturity date. A European option can only be exercised on the maturity date. Options can be in the form of customized contracts (which are not traded) or standard contracts quoted on an exchange (listed options). For customized options, the terms and conditions are negotiated between the buyer and the seller, for example, with regard to whether the option can be closed prematurely.

page 891

In the case of listed options, they trade in the same manner as listed shares. When an investor buys a call option, he is said to have a long position in the option. When an investor sells a call option, he has a short position in the option. To close the long position, the buyer can sell his call option to market participants. Similarly, a seller can close his short position by buying the call option from the market.

The main features of option contracts are as follows:

1. The purchaser of a call or a put option pays a premium to the seller (writer of the option). The option premium may be in the form of a lump sum figure or, in the case of listed options, quoted on a per unit basis. For example, on the Chicago Board of Exchange, an option is quoted as $2 per standard contract of 100 units of a particular commodity, resulting in a total premium of $200.
2. While the holder of an option contract has the right but not the obligation to perform, the seller (writer of the option contract) has the obligation to perform.
3. Option contracts have an asymmetrical pay-off profile. The purchaser (holder) of an option contract has a limited loss and a theoretically unlimited gain. The option holder's loss is limited to the premium that he has paid. However, the potential gain could be very high. The position of an option writer is the opposite. His gain is limited to the premium he has received from the sale of the option. His loss is potentially unlimited. Consider the following situation:

Type of option contract:	Call option
Notional quantity:	1,000 units of Security A
Premium (price of call option):	$500
Strike price:	$1.50

The buyer of the option pays $500 for the call option, which gives him the right but not the obligation to buy each unit of Security A at a price of $1.50. Obviously the buyer will not exercise his right unless the price of Security A goes above $1.50. The seller (writer) of the option receives $500 for the option. This is the maximum amount that the seller can gain from selling the option if the price of Security A stays at or below $1.50. Therefore, in writing the option, the option writer is effectively taking a bet that the price of Security A is unlikely to go above the strike price of $1.50.

The pay-offs to the option buyer and the option writer are shown in the following table:

Price of Security A (the underlying)	Pay-off to call option buyer	Pay-off to call option writer (seller)
$1.30	$(500)	$500

1.50	(500)	500
1.70	(300)	300
2.00	0	0
3.00	1,000	(1,000)
5.00	3,000	(3,000)

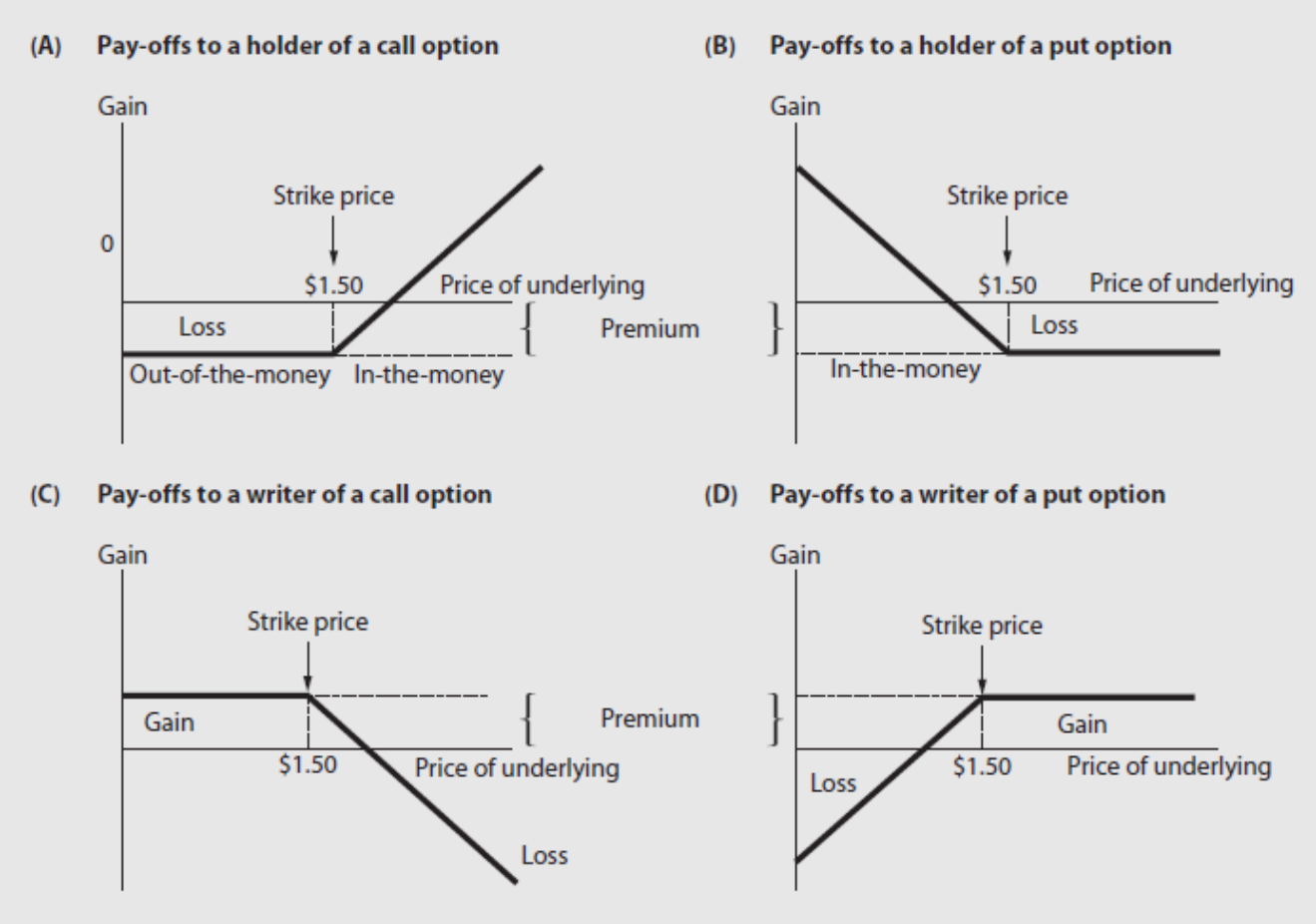
Note: The pay-offs are net of the option premium of $500.

In the above example, if the price of Security A rises to $3, the option buyer makes a net gain of $1,000 (after deducting the cost of the option) and the option writer makes a net loss of $1,000. If the price of security A rises to $5, the option buyer's net gain is $3,000 and the option writer's net loss is $3,000. However, if the price of security A stays at or below $1.50 from the inception to the expiration of the option, the option buyer's loss is limited to $500. It is this "one-sided" feature of an option that makes this derivative so attractive. It limits the loss to the option buyer (to the price paid for the option premium) while allowing him to benefit from any favorable movements in the underlying. For this reason, option contracts are generally more costly than other derivatives such as forward contracts when used for the same purpose, for example, hedging a specific risk. Note that the pay-offs amount to a zero-sum game as the option writer's gain (or loss) mirrors that of the option buyer's, but in the opposite direction.

page 892

The gain or loss that accrues to a holder of a call option is a function of the premium paid for the option and the relationship between the exercise or strike price and the underlying (the price of the optioned item). The pay-offs for long and short positions in call and put options are shown in Figure 10.2.

FIGURE 10.2 Pay-off diagrams for long and short call and put options



When the underlying (the price of the optioned item) is greater than the exercise or strike price, the call option is said to be in-the-money. In the previous example, if the price of Security A reaches $2 per unit, the buyer breaks even as the gain on the option is $500 [1,000 units × ($2.00 – $1.50)] and the cost of the option is also $500. Only when the price of Security A exceeds $2 will there be a net gain. A call option is said to be at-the-money when the strike price equals the underlying; it is out-of-the-money when the strike price exceeds the underlying (or spot price). In the case of a put option, the option is in-the-money when the strike price is greater than the underlying (or spot price), and out-of-the-money when the strike price less than the underlying (or spot price). Table 10.3 summarizes the relationship between the strike price and the underlying for call and put options.

page 893

TABLE 10.3 Relationship between the strike price and the underlying

	Strike price > Underlying (spot price)	Strike price = Underlying (spot price)	Strike price < Underlying (spot price)
Holder of a call option	Out-of-the-money	At-the-money	In-the-money
Holder of a put option	In-the-money	At-the-money	Out-of-the-money

The cost of an option at the time of purchase is the premium; this is also the fair value of the option. The fair value of an option contract is made up of two components – time value and intrinsic value.

$$\text{Fair value of an option} = \text{Intrinsic value} + \text{Time value}$$

If we know any two of the three values, the remaining value can be derived as a residual. For example, if the fair value of an option contract is $1,000 and the intrinsic value is $600, the time value component must be $400. The time value diminishes over time and is zero at the expiration of the contract. The loss in time value is also known as "time decay." The loss in time value is not uniform over the life of the contract, but normally, the loss increases exponentially in the last 30 days of the contract. The intrinsic value is derived as follows:

$$\text{Intrinsic value of a call option} = \text{Max [0, Notional amount (Quantity)} \times (\text{Spot price}^2 - \text{Strike price})]$$

$$\text{Intrinsic value of a put option} = \text{Max [0, Notional amount (Quantity)} \times (\text{Strike price} - \text{Spot price})]$$

At the time an option contract is written, it is usually written out-of-the money or at-the-money. The deeper an option is out-of-the money, the lower the premium (cost of the option). In this case, the premium is made up entirely of the time value component. By buying an out-of-the-money option, the buyer keeps his investment cost low and hopes to benefit from any favorable price changes subsequently. However, it is possible to purchase an option that is in-the-money if the option has been traded on an exchange for some time after its initial issue but still has some time left to maturity. In this case, the option premium is much higher as it consists of both an intrinsic value component and a time value component.

How Options Are Reported in the Statement of Financial Position The presentation of an option contract from the perspectives of the holder and the writer are as shown below.

Option is:	Presentation of an unexpired option contract in the holder's statement of financial position	Presentation of an unexpired option contract in the writer's statement of financial position
Out-of-the-money	Asset (time value only)	Liability
At-the-money	Asset (time value only)	Liability
In-the-money	Asset (intrinsic + time value)	Liability

From the option buyer's perspective, a purchased option, regardless of whether it is a call option or a put option, is always an asset as long as it has not reached the expiration date. This is the case even if the option is at-the-money or out-of-the-money. If the option is out-of-the-money, the intrinsic value is nil. The option buyer will not suffer any loss (other than the option premium paid) because the option buyer has no obligation to exercise the option when it is out-of-the-money (or at-the-money). Thus, the option's value for an out-of-the money or an at-the-money option is purely its time value. As long as an option has not expired, there is a possibility that the option may move into an in-the-money position. *From an option buyer's perspective, an option contract can never be a liability, that is, it can never have a negative intrinsic value or a negative time value*.

The position of an option writer is the opposite. From his perspective, a written option is always a liability until it expires out-of-the money. If the option stays out-of-the-money during the entire period, the option writer recognizes a reduction in the time value component as a gain during the option period or at the expiration of the option period. Variants of the plain vanilla call and put options are barrier (knock-in, knock-out), binary, Asian, lookback, and other combinations (straddle, strangle, etc.).

Determining the Fair Value of Option Contracts If an option contract is traded on an exchange, the quoted price is normally taken to represent its fair value. However, if the option contract is not traded, or even if it is traded but very thinly, the fair value may have to be obtained through other means. Finance theory has simplified complex relationships in useful models that enable us to determine the fair value of an option contract. The path-breaking

Black-Scholes model is one of the most widely used option pricing models. In a nutshell, the fair value or price of an option is a function of five key variables, namely the volatility of the underlying, the period to expiration, the risk-free interest rate, the strike price, and the underlying (price of the optioned item). It is beyond the scope of this textbook to explain the derivation of the Black-Scholes option pricing model.

Implied volatilities are derived from the market prices of the options. In practice, the implied volatilities can differ from the theoretical prices in the Black-Scholes option model. The in-the-money and out-of-money options have higher implied volatilities than the at-the-money options probably because the traders are risk averse to extreme price movements. This gives rise to a graph the shape of a smile (typically called volatility smile) when implied volatilities are plotted against strike prices.

ACCOUNTING FOR DERIVATIVES

Prior to IAS 39, the predecessor standard of IFRS 9, most derivatives were "off-balance-sheet," that is, they were not recognized in the financial statements as financial assets or financial liabilities. Under IAS 39 and IFRS 9, a contract meeting the definition of a derivative that is a financial instrument must be recognized as a financial asset or a financial liability. *The default assumption with regard to derivatives under IFRS 9 is that they are trading securities measured at fair value with changes in fair value taken to the profit or loss*. However, if the derivative is employed to hedge an identified risk and is designated as an effective hedge, then the default assumption no longer applies; instead, the derivative is accounted for under what is termed as "hedge accounting" rules.

Derivatives are measured and recognized at fair values. When the fair value of a transaction gives a positive inception gain, the positive gain is recognized as assets. Conversely, losses from derivatives are recognized as liability items. There are strict conditions for offsetting (or netting) gains and losses on the statement of financial position. Netting of gains against losses is allowed only if the different transactions are with the same counterparty, if there is a legal right of offset with proper legal documentation and if there is an intention to offset.

Fair valuation of derivatives factor in credit quality. The credit risk of the counterparty defaulting on a derivative transaction when the entity has a positive inception gain is termed credit valuation adjustment (CVA). On the other hand, the credit risk of the reporting entity defaulting on its derivative transaction when the entity has a negative inception loss is termed debit valuation adjustment (DVA). As CVAs and DVAs are tied to the values of the derivative transactions, they are calculated using a variety of methods such as simulations. Banks also tried to link the CVA and DVA calculations to the Basel capital requirements.

Table 10.4 summarizes the accounting for forward, futures, and options contracts under the default assumption. The accounting entries for a forward contract, a futures contract and an option contract are shown in Illustrations 10.2, 10.3, and 10.4, respectively.

TABLE 10.4 Summary of accounting for derivatives

	Forward contract	Futures contract	Option contract
At inception	No journal entry as fair value of forward contract is nil	Dr Margin deposit Cr Cash *To record payment of initial margin deposit*	*Purchased option:* Dr Option contract (asset) Cr Cash *Written option:* Dr Cash Cr Option contract (liability) *To record option premium*

	Forward contract	Futures contract	Option contract
During life of contract	Dr Forward contract (asset) Cr Gain on forward contract Or Dr Loss on forward contract Cr Forward contract (liability) *To adjust fair value of forward contract and record gain/loss*	Dr Cash/Deposit Cr Gain on futures contract Or Dr Loss on futures contract Cr Cash *To record daily settlement of futures contract*	*Purchased option:* Dr Option contract Cr Gain on option contract Or Dr Loss on option contract Cr Option contract *To adjust fair value of option and record gain/loss* *Written option:* Similar, but when there is a gain on the purchased option, there is a loss on the written option
Closing of position or at expiration of contract	Dr Cash Cr Forward contract Or Dr Forward contract Cr Cash *To close out forward contract and record net settlement of contract*	Dr Cash Dr Loss on futures contract Cr Margin deposit Or Dr Cash Cr Gain on futures contract Cr Margin deposit *To close out futures contract and recover margin deposit*	*Purchased option:* Dr Cash* Cr Gain on option contract Cr Option contract Or Dr Cash* Dr Loss on option contract Cr Option contract * It is assumed that the option expires in-the-money. If the option expires out-of-the money, no entry is needed as the time value would have been expensed off *Written option:* Dr Option contract Cr Gain on option contract (option expires out-of-the-money) Or Dr Option contract Dr Loss on option Cr Cash (option expires in-the-money)

ILLUSTRATION 10.2A Accounting for a forward contract (profit)

Assume that in Illustration 10.1, the forward contract was entered into for speculative purposes. The journal entries to record the transaction from inception to maturity are as follows:

1 Mar 20x5	*No entry need to be recorded. Fair value of forward contract is nil at inception.*		
31 Mar 20x5	Dr Forward contract	9,917	
	Cr Gain on forward contract		9,917
	To record change in fair value of forward contract		
30 Apr 20x5	Dr Loss on forward contract	4,938	
	Cr Forward contract		4,938
	To record change in fair value of forward contract		
30 May 20x5	Dr Forward contract	10,021	
	Cr Gain on forward contract		10,021
	To record change in fair value of forward contract		
	Dr Cash	15,000	
	Cr Forward contract		15,000
	To close forward contract on maturity		

Entries in practice:

31 Mar 20x5	Same as above		
30 Apr 20x5	Dr Gain on forward contract (P/L)	9,917	
	Cr Unrealized profit on forward contract (Asset)		9,917
	To reverse prior period fair value of forward contracts		
	Dr Unrealized profit on forward contract (Asset)	4,979	
	Cr Gain on forward contract (P/L)		4,979
	To record current period fair value of forward contracts		
30 May 20x5	Dr Gain on forward contract (P/L)	4,979	
	Cr Unrealized profit on forward contract (Asset)		4,979
	To reverse prior period fair value of forward contracts		
	Dr Unrealized profit on forward contract (Asset)	15,000	
	Cr Gain on forward contract (P/L)		15,000
	To record current period fair value of forward contracts		
	Dr Cash	15,000	

	Cr Unrealized profit on forward contract		15,000
	To close forward contract on maturity		

ILLUSTRATION 10.2B Accounting for a forward contract (loss)

Assume that in Illustration 10.1, the forward contract was entered into for speculative purposes, the fair values of forward contract on 30 April 20x5 and 30 May 20x5 are –$1,000 and –$8,000, respectively. The changes to the journal entries are as follows:

1 Mar 20x5	No change		
31 Mar 20x5	No change		
30 Apr 20x5	Dr Gain on forward contract (P/L)	9,917	
	Cr Unrealized profit on forward contract (SFP)		9,917
	To reverse prior period fair value of forward contracts		
	Dr Loss on forward contract (P/L)	1,000	
	Cr Unrealized loss on forward contract (SFP)		1,000
	To record current period fair value of forward contracts		
30 May 20x5	Dr Unrealized loss on forward contract (SFP)	1,000	
	Cr Loss on forward contract (P/L)		1,000
	To reverse prior period fair value of forward contracts		
	Dr Loss on forward contract (P/L)	8,000	
	Cr Unrealized loss on forward contract (SFP)		8,000
	To record current period fair value of forward contracts		
	Dr Unrealized loss on forward contract (SFP)	8,000	
	Cr Cash		8,000
	To close forward contract on maturity		

ILLUSTRATION 10.3 Accounting for a futures contract

On 1 March, Capital Trust speculates that the price of gold will increase and purchases ten gold futures contracts at a price of $800 per ounce. Each contract is for 100 ounces of gold and the maturity date is 31 May. The futures exchange requires a payment of 10% of the notional amount as margin deposit. On 31 March, the price of gold increases to $850 per ounce and Capital Trust closes its long position. The journal entries to record the transaction are as follows:

1 Mar	Dr Margin deposit	80,000	
	Cr Cash		80,000
	To record the payment of margin deposit on ten gold futures contracts		

page 899

31 Mar	Dr Cash	130,000	
	Cr Margin deposit		80,000
	Cr Gain on futures contract		50,000
	To record gain of $50,000 ($50 × 100 × 10) on futures contract and to close out futures contract and return of margin deposit		

Note that in practice, movements in the margin deposit account are recorded daily.

ILLUSTRATION 10.4 Accounting for an option contract

A hedge fund decides to speculate on the share price of Worldwide Enterprise whose current market price is $38. It simultaneously purchases a put option on 100,000 units of the stock with a strike price of $35 at a premium of $1.50 per unit, and a call option on 100,000 units of the stock with a strike price of $41 at a premium of $1.50 per unit.[3] Assume that the stock price of Worldwide Enterprise rises to $43, at which point the call option is in-the-money with a market price of $2.95 per unit. The put option is deeply out-of-the-money with a market price of $0.50. Capital Trust decides to close both the options at the prevailing market prices. The pay-offs to the option buyer and the option writer are as follows:

	Call option	Put option
Option buyer:		
Fair value	$ 295,000	$ 50,000
Less premium paid	(150,000)	(150,000)
Buyer's gain/(loss) on option at closure	$ 145,000	$(100,000)
Option writer:		
Premium received	$ 150,000	$ 150,000
Less fair value of option at closure	(295,000)	(50,000)
Writer's gain/(loss) on option	$(145,000)	$(145,000)

Overall, the buyer of the options realizes a net gain of $45,000 from the two options contracts: a gain of $145,000 from the call option and a loss of $100,000 on the purchased call option. The position of the option writer is the opposite. He incurs a loss of $45,000 from the two written options comprising of a loss of $145,000 on the call option and a gain of $100,000 on the put option.

The options are accounted for as fair value through profit or loss (FVTPL). The separation between time and intrinsic value is not important for speculative trades as changes in both the time and the intrinsic values are taken to the income statement if the instrument is accounted for under the FVTPL category. The following journal entries are recorded in the books of the buyer and the writer of the options.

page 900

	Option buyer			Option writer*		
At inception	Dr Call Option	150,000		Dr Cash	300,000	
	Dr Put Option.....	150,000		Cr Call Option		150,000
	Cr Cash.....		300,000	Cr Put Option.....		150,000
	Purchase of options			*Writing of options*		
At closing of the option positions	Dr Cash	295,000		Dr Loss on call option....	145,000	
	Cr Call option		150,000	Dr Call option	150,000	
	Cr Gain on call option .		145,000	Cr Cash.....		295,000
	Dr Loss on put option....	100,000		Dr Put option	150,000	
	Dr Cash	50,000		Cr Cash.....		50,000
	Cr Put option		150,000	Cr Gain on put option .		100,000
	Closing out positions on options			*Closing out positions on options*		

* It is assumed that both options are written by the same party.

HEDGING

The purpose of hedging is to neutralize an exposed risk, for example, by transferring it to a third party, and to reduce the volatility in earnings. When hedging is effective, a loss on the hedged item is completely or nearly completely offset by a gain on the hedging instrument. Hedging is more likely to reduce volatility than to preserve gains, particularly when instruments with symmetrical pay-offs are used. It is this offsetting effect that reduces the volatility in reported earnings. While the focus here is on the use of derivatives for hedging purposes, it must be borne in mind that there are other ways of hedging that make use of non-derivatives, such as money market instruments (called money market hedge), and natural hedge, such as offsetting foreign currency assets and liabilities denominated in the same currency. Where derivatives are used for hedging purposes, a set of special accounting rules called "hedge accounting" applies.

Chapter 6 of IFRS 9 sets out the requirements for hedge accounting. The hedge accounting under IFRS 9 is designed to align hedge accounting more closely with the entity's risk management activities. This is enshrined within the objective of hedge accounting as set out in paragraph 6.1.1 of IFRS 9. Specifically, the objective of hedge accounting is to represent the effect of an entity's risk management activities through the use of financial instruments to manage exposures arising from particular risks that could affect profit or loss (or other comprehensive income, in the case of investments in equity instruments for which an entity has elected to present changes in fair value in other comprehensive income) in the financial statements. Under IFRS 9, the Board establishes a more principle-based approach to hedge accounting and addresses the inconsistencies and weaknesses in the previous hedge accounting model under its predecessor standard, IAS 39. The hedge accounting requirements in IFRS 9 is effective for annual periods beginning on or after 1 January 2018, but earlier application is permitted.

Rationale for Hedge Accounting

The need for special hedge accounting rules arises because under conventional accounting treatment, there are certain situations where the income-offsetting effects will not occur in the same period as the gain (or loss) on the hedging instrument will be reported in one period and the loss (or gain) on the hedged item in another period. The following are the situations that require hedge accounting.

1. The hedged item and the hedging instrument are measured using different bases, for example, the hedged item is measured at cost and the hedging instrument is measured at fair value. This is a consequence of the mixed-attribute accounting model that entities generally adopt.
2. The hedged item is yet to be recognized in the financial statements.
3. Different treatments are applied to changes in the fair value of the hedged item and the hedging instrument. For example, changes in the fair value of the hedged item are taken to other comprehensive income while changes in the fair value of the hedging instrument are taken to the profit or loss.

Consider the following situations:

1. A FVOCI security is hedged by a derivative. Both the hedged item and the hedging instrument are carried at fair value. Changes in the fair value of the FVOCI security are deferred in other comprehensive income under IFRS 9, and are recognized as a gain or loss when the FVOCI security is disposed of. Under IFRS 9, changes in the fair value of the derivative are taken to the profit or loss.

   Although there is a hedging relationship, there is no offsetting of gains and losses on the hedged item and the hedging instrument in this case. To reflect the effectiveness of the hedge, hedge accounting rules requires the recognition of the change in the fair value of the hedged item (the FVOCI security) in the profit or loss to offset the change in the fair value of the hedging instrument in the same period.
2. A entity enters into a non-cancellable contract (a firm commitment) to purchase an asset at a fixed price. The transaction will occur at a future date. The entity faces the risk that when the firm commitment is fulfilled at the future date, the price of the asset might have decreased. Thus, it will have to pay the agreed price when it could have paid less if it had not entered into the firm commitment. So, the entity enters into a derivative transaction to hedge the risk on the commitment. The objective of the hedge is to offset any loss on the firm commitment with a corresponding gain on the derivative.

   However, under conventional accounting treatment, the commitment is an executory contract, and no asset or liability is recognized in the statement of financial position until the contract is fulfilled in a later period. On the other hand, changes in the fair value of the derivative are recognized in profit or loss under IFRS 9 under the default treatment. Without hedge accounting, the gain (or loss) on the derivative will not offset the corresponding loss (or gain) on the firm commitment in the same period.

   Hence, to reflect the hedging relationship and the effectiveness of the hedge, a major departure from normal accounting rules is required. Under IFRS 9, changes in the fair value of the firm commitment attributable to the hedged risk are recognized in the income statement to offset the opposite changes in the fair value of the hedging instrument. An example on the accounting treatment for the hedge of a firm commitment is given in Illustration 10.12.

Without special hedge accounting rules, the effectiveness of the hedge will not be reflected in the financial statements, resulting in an increased volatility of reported earnings that is contrary to the economic effects of an effective hedging arrangement. Before discussing the procedural aspects of hedge accounting, it is important to examine the following issues:

1. What risks qualify for hedge accounting?
2. What financial instruments qualify as hedging instruments?
3. What items qualify as hedged items?

RISKS THAT QUALIFY FOR HEDGE ACCOUNTING

For hedge accounting purposes, the risks that are hedged should be specific risks and not general business risks. The specific risks that qualify for hedge accounting are interest rate risk, foreign exchange risk, price risk, and credit risk.

Interest Rate Risk Interest rate risk takes two forms. First, changes in interest rates affect interest payments or receipts on variable (or floating) rate debt. This affects the cash flows of the issuer (as well as investors of this instrument). Second, changes in interest rates affect the value of fixed rate debt instruments carried at fair value. The carrying value of the fixed rate instrument varies inversely with interest rates. Adjustments to the fair value of the instrument affect the profit or loss (unless these are classified as amortized cost or FVOCI).

Foreign Exchange Risk As discussed in Chapter 8, changes in foreign exchange rates affect the following:

1. Monetary items, for example, accounts receivable, accounts payable, and loans denominated in foreign currencies. These have to be adjusted for changes in exchange rates and the resulting exchange gains or losses are taken to the profit or loss.
2. Securities denominated in foreign currencies and measured at fair value. Changes in foreign exchange rates affect the fair value of such securities, and exchange gains or losses are taken to the profit or loss if the securities are classified as FVTPL or are monetary FVOCI securities (e.g. bond instruments). However, the exchange gains or losses are treated as a component of fair value changes, and are taken directly to other comprehensive income if the securities are non-monetary assets (i.e. equity instruments) and classified as FVOCI.
3. Entities with foreign operations are required to translate the financial statements of their overseas subsidiaries before incorporating them into the group accounts. Translation differences arise as a result of changes in foreign exchange rates.
4. Future transactions that are firm commitments or probable transactions denominated in foreign currencies. When these transactions eventually take place, changes in foreign exchange rates affect the future cash flows of these transactions.

Market Price Risk Entities transacting or investing in commodities and financial securities are subject to price risk. For example, entities in the transport industry face the risk of volatile fuel oil prices. Similarly, entities with short- or long-term investments in financial assets that are carried at fair value are subject to fluctuations in the prices of the financial assets. Price risk may also extend to inventories and firm commitments. For example, a gold mining company's inventory is affected by the price of gold, which will in turn affect the gross profit margin when the gold is sold. If the gold mining company had committed a portion of its gold reserves in forward sales, the fair value of the commitment would also be affected by movements in the price of gold.

page 903

Credit Risk Firms that hold debt securities issued by other firms face credit risk besides interest rate risk. The credit rating of the issuer may be downgraded by rating agencies, which will affect the fair value of the securities issued by it. For example, Firm A holds a fixed rate debt issued by Firm Z. If the credit rating of Firm Z is lowered from a BB grade to a C grade, the fair value of the debt issued by Firm Z will decline significantly thereby resulting in (unrealized) loss by Firm A. Credit risk affects the fair value of a financial asset as well as the related cash flows.

Typically, a derivative is used to hedge against a specific risk although it is possible for a derivative to hedge more than one risk, for example, a combined interest rate and currency swap. At the outset, it is important that the risk that is to be hedged is specified correctly. This is because the hedged item may incorporate more than one type of risk.

Incorrect specification of the risk to be hedged may result in hedge ineffectiveness. For example, a company whose functional currency is the dollar invests in a fixed rate bond denominated in sterling pounds issued by a British company. This investment is exposed to interest rate risk, currency risk and credit risk. If the company hedges the investment using an interest rate swap and specifies the risk as the change in the fair value of the bond, the hedge may not be effective as the change in the fair value of the bond could reflect either a change in the British interest rate, a change in the exchange rate between the dollar and the British pound, a change in the British company's credit rating, or a combination of all three risk exposures. On the other hand, changes in the fair value of the interest rate swap reflect primarily the interest rate risk.

QUALIFYING HEDGING INSTRUMENTS

Under IFRS 9, qualifying hedging instruments include:

(a) Derivatives measured at fair value through profit or loss except for some written options[4]. IFRS 9 allows for certain reliefs in the use of options as hedges but net written options do not qualify as hedging instruments (paragraph 6.2.6 of IFRS 9). Derivatives embedded in hybrid financial instruments that are not separately accounted for do not qualify as hedging instruments[5].

(b) Non-derivative financial assets or non-derivative financial liabilities measured at fair value through profit or loss except for financial liabilities with fair values related to its own credit are recognized in other comprehensive income.

Both (a) and (b) could be in combination designated as hedging instruments. However, a written option and a purchased option together that gives a net written option at the designation date does not qualify as a hedging instrument.

The contracts must be with parties external to the reporting entity to be designated as qualifying hedging instruments. Hedging instruments are required to be designated in its entirety in a hedging relationship except for the following:

(i) Changes in intrinsic value, and not the time value of an option can be designated as the hedging instrument.

(ii) Spot element, and not the forward element of a forward contract can be designated as the hedging instrument.

(iii) A proportion of the nominal amount of the entire hedging instrument may be designated as hedging instruments.

For hedges of foreign currency risk, IFRS 9 allows the foreign currency risk component of all non-derivative financial instruments that is calculated in accordance with IAS 21 to be designated as hedging instruments. For instance, the entity which is hedging a foreign currency risk in a forecasted sale transaction in the next 24 months can designate a 2-year loan that is denominated in the same currency as the forecasted sale as the hedging instrument. However, equity instruments for which the entity has elected to present changes in fair value in other comprehensive income does not qualify as a hedging instrument in a hedge of foreign currency risk. The rationale is that the fair value changes are not recognized in profit or loss and accordingly, it is inconsistent with the accounting mechanics of fair value and cash flow hedges.

QUALIFYING HEDGED ITEMS

Paragraph 6.3.1 of IFRS 9 sets out the items that could qualify as hedged items for purposes of hedge accounting. These include:

1. Recognized assets or liabilities;
2. Unrecognized firm commitments[6];
3. Highly probable forecast transactions[7] with exposures to changes in future cash flows; and
4. A net investment in a foreign entity.

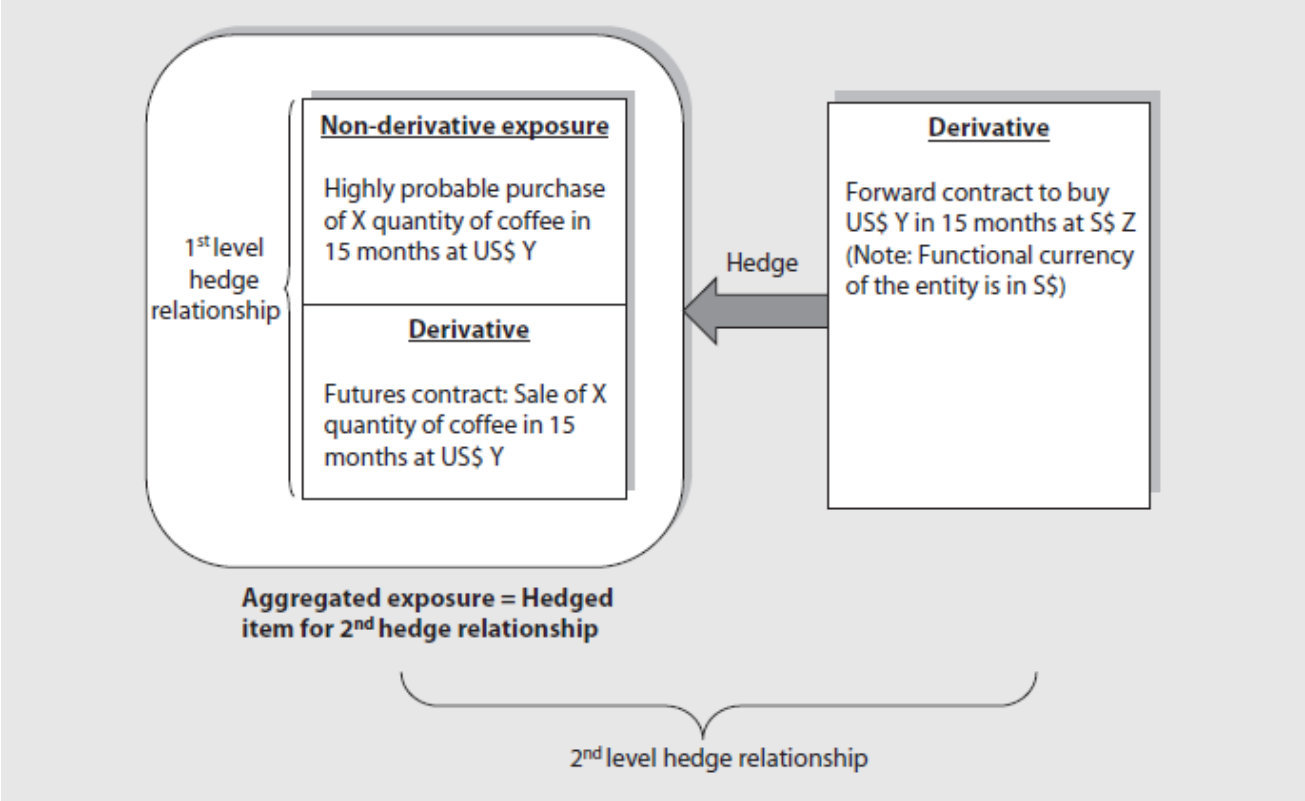
All the items that qualify as hedged items can be a component of such an item or group of items. A component is a hedged item less than the entire item. That component reflects only some of the risks of that entire item or only the risks to some extent. The risk components could be explicitly specified in a contract or implicit in the fair values or cash flows of that entire item (contractually and non-contractually specified risk components respectively). An example of contractually specified risk component is the gas oil component in a long-term supply contract for natural gas that is priced using a contractually specified formula that references commodity prices. As the gas oil component is separately identifiable and reliably measurable, it is a risk component that is eligible as a hedged item. For a group of items to qualify as hedged items, there are certain requirements that must be met. We will discuss this in more details below.

As with IAS 39, IFRS 9 further stipulates that for purposes of hedge accounting, the items above must be with an external party before they qualify for hedge accounting. The exception to this requirement is that the foreign currency risk of an intragroup monetary item such as a payable or receivable between two subsidiaries would qualify as a hedged item in the consolidated financial statements if it results in an exposure to foreign currency gains or losses that are not fully eliminated on consolidation. In addition, IFRS 9 requires the item being hedged to be reliably measurable. This requirement is also unchanged from IAS 39.

page 905

What has changed from IAS 39 is that IFRS 9 now allows an aggregated exposure that is a combination of an exposure that could qualify as a hedged item in accordance with the above requirements and a derivative may be designated as a hedged item. B6.3.3 to IFRS 9 provides an example of such an aggregated exposure. Specifically, Company A may hedge a given quantity of highly probable coffee purchases in 15 months' time (i.e. forecasted transaction) against price risk (based on US dollars) using a 15-month futures contract for coffee. Assume that the functional currency of Company A is Singapore dollar. The combination of the highly probable coffee purchases and the futures contract for coffee can be viewed as a 15-month fixed-amount US dollar foreign currency risk exposure for which Company A can hedge using a forward sale contract of US dollar in 15 months. Figure 10.3 shows how an aggregated exposure can be designated as a hedged item.

FIGURE 10.3 Designating an aggregated exposure as a hedged item under IFRS 9



Hedges of Group of Items

A group of items is an eligible hedged item only if:

(a) Each item individually is an eligible hedged item;

(b) They are managed on a group basis for risk management purposes.

(c) For a cash flow hedge of group of hedged items with variability in cash flows not proportional to overall cash flows of the group, it is a foreign currency risk hedge and the designation of the net position specifies the reporting period in which forecasted transactions are expected to affect profit or loss. (Paragraph 6.6.1 of IFRS 9)

When the group of items that gives a net position is designated as a hedged item, the overall group of items rather than a non-specific amount of net position shall be designated as hedged item. The eligibility of net position as a hedged item depends on whether the hedge is a fair value hedge or cash flow hedge. The former is eligible as a hedged item. The latter is eligible as a hedged item if it is a hedge of foreign currency risk and the designation of the net position specifies the nature and volume and the reporting period when the forecast transactions can affect profit or loss (IFRS 9 paragraph B6.6.7).

A proportion of an eligible group is eligible hedged item if it is consistent with the risk management objective. A layer component of a group of items is eligible for hedge accounting if:

(a) the component is separately identifiable and reliably measurable;

(b) the risk management objective is to hedge a layer component;

(c) the items in the overall group where the layer is identified are exposed to the same hedged risk;

or

(d) for a hedge of existing items (e.g. an unrecognized firm commitment), the overall group can be identified and tracked.

In addition to the above, paragraph 6.3.1 of IFRS 9 states that a hedged item can also be a component of such an item or group of items. A component refers to a hedged item that is less than the entire item. That component reflects only some of the risks of that entire item or only the risks to some extent. Paragraph 6.3.7 of IFRS 9 provides a list of components of items which can be designated as hedged items. They are:

(a) Changes in cash flows/fair values of item attributable to specific risk (i.e. risk component), which is separately identifiable and reliably measurable;

(b) One or more selected contractual cash flows;

(c) Components of a nominal amount

  (i) Proportion of entire item, e.g. 50% of contractual cash flows of loan;

  (ii) Layer component specified from defined nominal amount, e.g. next foreign currency denominated cash flows from foreign currency denominated sales after first foreign currency denominated $20 in March 20x1.

As set out in (a) above, for a risk component to qualify for designation as a hedged item, IFRS 9 states that the risk component must be a separable identifiable component of the financial or non-financial item and the changes in the cash flows or fair value of the underlying item that is attributable to that risk component must be reliably measurable. For the purpose of this determination, the entity will have to assess the risk component in the context of the market structure to which the risk relates and in which the hedging takes place.

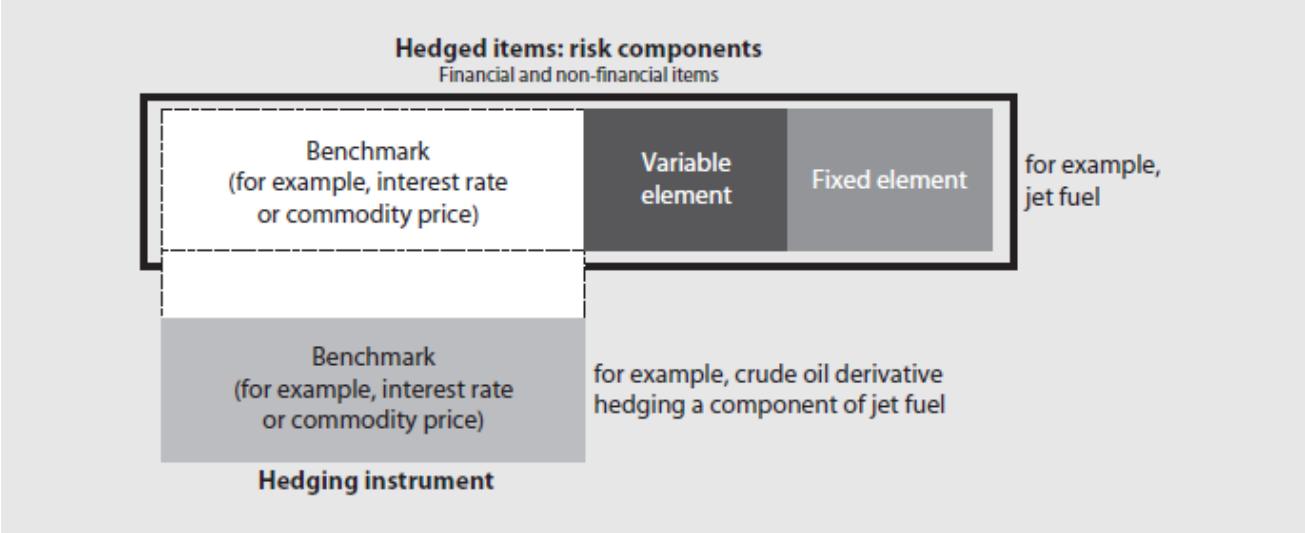
We will look at the separate identification criterion in closer details. IFRS 9 states that, for the separate identification criterion, the risk components that could be designated as hedged items could be either explicitly specified in a contract or implicit in the fair values or cash flows of that entire item (i.e. contractually and non-contractually specified risk components respectively).

Paragraph B6.3.10(a) of IFRS 9 provides an example of a contractually specified risk component: the gas oil component in a long-term supply contract for natural gas. The natural gas is priced using a formula that references to commodity prices such as gas oil and other factors and this formula is set out within the contract. As the gas oil component is specified by the terms and conditions in the supply contract, it is a contractually specified risk component. As a result of the pricing formula in the contract, the gas oil price exposure is separately identifiable. Furthermore, given that there is a market for gas oil forward contracts, it can be concluded that the gas oil price exposure is reliably measurable. Therefore, the gas oil price exposure in the supply contract is a risk component that is eligible for designation as a hedged item. Assuming that the rest of the hedge requirements are met, the entity can hedge the gas oil component in that supply contract using a gas oil forward contract as a hedging instrument.

page 907

In illustrating the case of a non-contractually specified risk component that can be designated as a hedged item, paragraph B6.3.10(c) of IFRS 9 provides an example of an entity using crude oil contracts and gas oil contracts to hedge a portion of its exposure in a long term jet fuel supply contract. As both crude oil and gas components are not contractually specified in the determination of jet fuel prices in the supply contract, the entity has to determine if both crude oil and gas oil affect the pricing of the jet fuel. Based on an analysis of the market structure for oil and oil products, the entity concludes that the price risk for its jet fuel purchases includes a crude oil price risk component as well as a gas oil price risk component. This is notwithstanding that both are not specified in the contractual agreement. Therefore, the entity concludes that the two risk components are separately identifiable and reliably measurable. Accordingly, the entity may designate hedging relationships for forecast jet fuel purchases on a risk component basis (for crude oil or gas oil). Figure 10.4 which is reproduced from IASB's Project Summary on IFRS 9 Financial Instruments (Hedge Accounting and Amendments to IFRS 9, IFRS 7 and IAS 39) issued in November 2013 illustrates this example.

FIGURE 10.4 Designating crude oil risk component in the price of jet fuel as a hedged item



IFRS 9 also includes a rebuttable presumption that inflation risk is not separately identifiable and reliably measurable unless it is contractually specified. Accordingly, it cannot be designated as a risk component of a financial instrument if it is not specified within the contract. However, the IFRS clarifies that it may be possible in limited cases to identify inflation risk as separately identifiable and reliably measurable. An example of such would be inflation-linked bonds in a liquid market (Paragraph B6.3.13 IFRS 9).

CRITERIA FOR HEDGE ACCOUNTING

The qualifying criteria for hedge accounting (IFRS 9 paragraph 6.4.1) are as follows:

(a) Hedging relationship consists only of eligible hedging instruments and eligible hedged items.

(b) At the inception of the hedge, there has to be formal designation and documentation of the hedging relationship, risk management objective and strategy for undertaking the hedge. IFRS 9 requires firms that apply hedge accounting to disclose their risk management strategy, how they manage risk, the extent of risk exposures that are managed, how their hedging activities affect the amount, timing and uncertainty of cash flows and the effects that hedge accounting has had on the firms' financial positions and financial performance. In addition, firms should describe the hedging instruments used to hedge risk exposures, how the economic relationships between the hedging instrument and hedged item are determined and how the hedge ratios are determined, and the sources of hedge ineffectiveness (paragraphs 21A, 22A, 22B of IFRS 9).

(c) The hedging relationship meets all of the following hedge effectiveness requirements:

  (i) Economic relationship between hedged item and hedging instrument;

  (ii) Credit risk does not dominate the value changes from (i);

  (iii) Hedge ratio of hedging relationship is the same as that resulting from quantity of hedged item that an entity hedges and the quantity of hedging instrument the entity uses to hedge that quantity of hedged item. For example, an entity hedges an exposure using 40 units of a financial instrument, the hedge ratio is based on that 40 units of hedging instrument and the quantity of hedged item that it hedges with that 40 units. Bright line thresholds of 80% to 125% correlation ratio and retrospective tests under IAS 39 are no longer required.

Hedge Effectiveness

Paragraph B6.4.1 of IFRS 9 defines hedge effectiveness as the extent to which changes in the fair value or the cash flows of the hedging instrument offset the changes in the fair value or the cash flows of the hedged item. In the case where the hedged item is a risk component, the relevant change in fair value or cash flows of an item is the one that is attributable to the hedged risk.

Hedge ineffectiveness, on the other hand is the extent to which the changes in the fair value or the cash flows of the hedging instrument are greater or less than those on the hedged item. The IFRS Standard requires the entity to analyze the sources of hedge ineffectiveness that are expected to affect the hedging relationship during its term when (1) designating a hedging relationship, i.e. on inception and (2) on a going basis[8]. In other words, the hedge effectiveness test is prospective. This analysis of the sources of hedge ineffectiveness is the basis for the entity's assessment of whether the hedge effectiveness requirements are met.

Economic Relationship between Hedged Item and Hedging Instrument

The economic relationship between hedged item and hedging instrument means that they have values that generally move in the opposite direction due to the same hedged risk. If the underlyings in the hedged item and hedging instrument are not the same but are economically related, there is a possibility that the values of the hedging instrument and hedged item move in the same direction. For instance, when the price differential between the two related underlyings changes whilst the underlyings themselves do not move significantly. In that situation, if the values of the hedging instrument and hedged item are expected to typically move in the opposite directions when the underlyings move, it will still meet the economic relationship between hedging item and hedged instrument criterion.

page 909

In the assessment of whether an economic relationship exists, the IFRS Standard requires the entity to include an analysis of the possible behavior of the hedging relationship during its term to establish if the risk management objective is expected to be met. A mere statistical correlation between two variables in itself does not support the existence of an economic relationship.

Effect of Credit

As the hedge accounting model in IFRS 9 is predicated on a general notion on the gains and losses on the hedging instrument and hedged item offsetting each other, the effectiveness of the hedge is not just dependent on the economic relationship between the hedging instrument and hedged item. Credit risk arising from both items will also have an impact on the hedge effectiveness. In particular, credit risk may render the offset between the gains or losses on the hedging instrument and hedge item so erratic such that it frustrates the effect of changes in the underlyings on the value of the hedging instrument or the hedged item. In this case, the change in credit risk may dominate the economic relationship between the hedging instrument and hedged item such that the hedge is ineffective. An example is when the increase in credit risk of the counterparty to a commodity derivative dominates the changes in commodity prices. When that happens, the level of offset between the gains and losses on the hedged item and hedging instrument may go awry.

Hedge Ratio

As discussed above, IFRS 9 requires the hedge ratio in a hedge relationship to be the ratio that results from the quantity of the hedged item that the entity actually hedges and the quantity of the hedging instrument that the entity actually uses to hedge in that relationship. The IFRS Standard does not allow an entity to set a hedge ratio that reflects a deliberate imbalance between the weightings of hedged item and hedging instrument that would create hedge ineffectiveness. This is because that would be inconsistent with the purpose of hedge accounting.

However, if there are valid commercial reasons for particular weightings of the hedged item and hedging instruments to be used, notwithstanding that it creates hedge ineffectiveness, IFRS 9 clarifies that this is not inconsistent with the purpose of hedge accounting. For example, if the standard volume or lot of hedging instrument that is traded in the market does not allow the entity to hedge the exact quantity of hedged item, the commercial

reason for the weightings of hedging instrument and hedged item is not inconsistent with hedge accounting. Illustration 10.5 which is an adaptation of B6.4.11(b) to IFRS 9 illustrates this.

ILLUSTRATION 10.5 Designating the hedge accounting ratio

Coffee Ltd hedges 100 tonnes of coffee purchases with standard coffee futures contracts that have a contract size of 37,500 lbs (pounds). However, Coffee Ltd can only use either five or six contracts (equivalent to 85.0 and 102.1 tonnes respectively) to hedge the purchase volume of 100 tonnes as opposed to the quantity that it determined as the best hedge for the coffee purchases (i.e. 100 tonnes). This is because the standard volume of the coffee futures contract does not allow Coffee Ltd to enter into that exact quantity as a hedging instrument (a "lot size issue").

In this case, Coffee Ltd designates the hedging relationship using the hedge ratio that results from the number of coffee futures contracts that it actually uses (i.e. either 85 or 102.1 tonnes). There would be some hedge ineffectiveness as there is a mismatch in the weightings of the hedged item and the hedging instrument. However, in this case, it would not result in an accounting outcome that is inconsistent with the purpose of hedge accounting as there is a valid commercial reason for the particular weightings. page 910

The above scenario were varied such that the coffee futures contracts can be customized to meet Coffee Ltd's requirement, i.e. Coffee Ltd can buy 100 tonnes worth of coffee futures contracts as hedging instruments. However, Coffee Ltd chooses to procure 85.0 tonnes to minimize hedge ineffectiveness. In this case, this hedge ratio of 0.85:1 is considered to be unbalanced and it is entered with the intent to avoid recognition of accounting ineffectiveness. This is therefore inconsistent with the purpose of hedge accounting. Accordingly, for hedge accounting purposes, the hedge ratio would have to be based on the hedge ratio of 1:1 (since coffee futures contract can be customized). Consequently, if the relative change in the fair value of the coffee futures is greater than that of the hedged item of coffee purchases, some hedge ineffectiveness will have to be recognized in the profit or loss.

Measuring Hedge Ineffectiveness

As discussed above, paragraph B6.4.2 of IFRS 9 requires the entity to analyze the sources of hedge ineffectiveness that are expected to affect the hedging relationship during its term when (1) designating a hedging relationship, i.e. on inception and (2) on a going basis, at a minimum at each reporting date or when a significant change in circumstances affecting hedge effectiveness occurs. As the analysis is based on the entity's expectations on hedge effectiveness, the hedge effectiveness test is quintessentially a forward-looking test. Notwithstanding the above requirement, it must be emphasized that IFRS 9 requires an entity to measure and recognize hedge ineffectiveness when it has happened. For instance, IFRS 9 requires the ineffective portion of a cash flow hedge to be recognized in the profit or loss.

As explained in BC6.278 – 279 Basis for Conclusions Accompanying IFRS 9, hedge ineffectiveness is measured based on the actual performance of the hedging instrument and the hedged item by comparing the changes in their values in currency units. The IFRS Standard provides a mathematical expedient in which an entity can use to calculate the change in the value of a hedged item for the purpose of measuring hedge ineffectiveness in a hedge relationship. This expedient is known as the "hypothetical derivative" method.

Essentially, the use of the hypothetical derivative involves an entity using a derivative that has terms that matches the critical terms of the hedged item. Hence, the hypothetical derivative in this case, replicates the hedged item and accordingly changes in the value of the hedged item. The change in the value of the hypothetical derivative is then compared against the change in the value of the hedging instrument to measure the hedge effectiveness. For the purpose of using this methodology, IFRS 9 states that the hypothetical derivative cannot include features that exist only in the hedging instrument, but not in the hedged item. The IFRS Standard also clarifies that the hypothetical derivative is one possible way of calculating the change in the value of the hedged item. Entities may also use other methods to achieve the same objective.

In addition, for the purposes of measuring hedge ineffectiveness, IFRS 9 states that entities have to factor in the time value of money. What this means is that the entity will have to determine the value of the hedged item on a present value basis.

Causes of Hedge Ineffectiveness There are several possible reasons for hedge ineffectiveness. One of these is the inclusion of the time value or interest component of the hedging instrument in the hedging relationship. As discussed earlier, this problem is easily resolved by excluding the time value or interest component from the hedging relationship. Another reason is when one or more of the critical terms of the hedged item and hedging instrument do not match. The critical terms may not match exactly because the notional amounts for the hedging instrument and the hedged item differ, or the maturity date for the hedged item differs from that of the hedging instrument, or the underlying's base is different from that of the hedging instrument; for example, in an interest rate swap, the hedged item may be a variable debt based on prime rate while the swap is based on LIBOR (London Interbank Offer Rate). In the case where the hedged item is a commodity, such as gold, the location where the gold is produced may cause the spot price of the hedged item to differ significantly from the price of the derivative because of transport costs. Another reason is that the hedged item has multiple risks, for example, a foreign currency bond, and the hedging relationship is not correctly designated. On the other hand, a hedging instrument may also have multiple underlyings, for example, a combined interest rate and currency swap, which may cause some hedge ineffectiveness.

page 911

REBALANCING

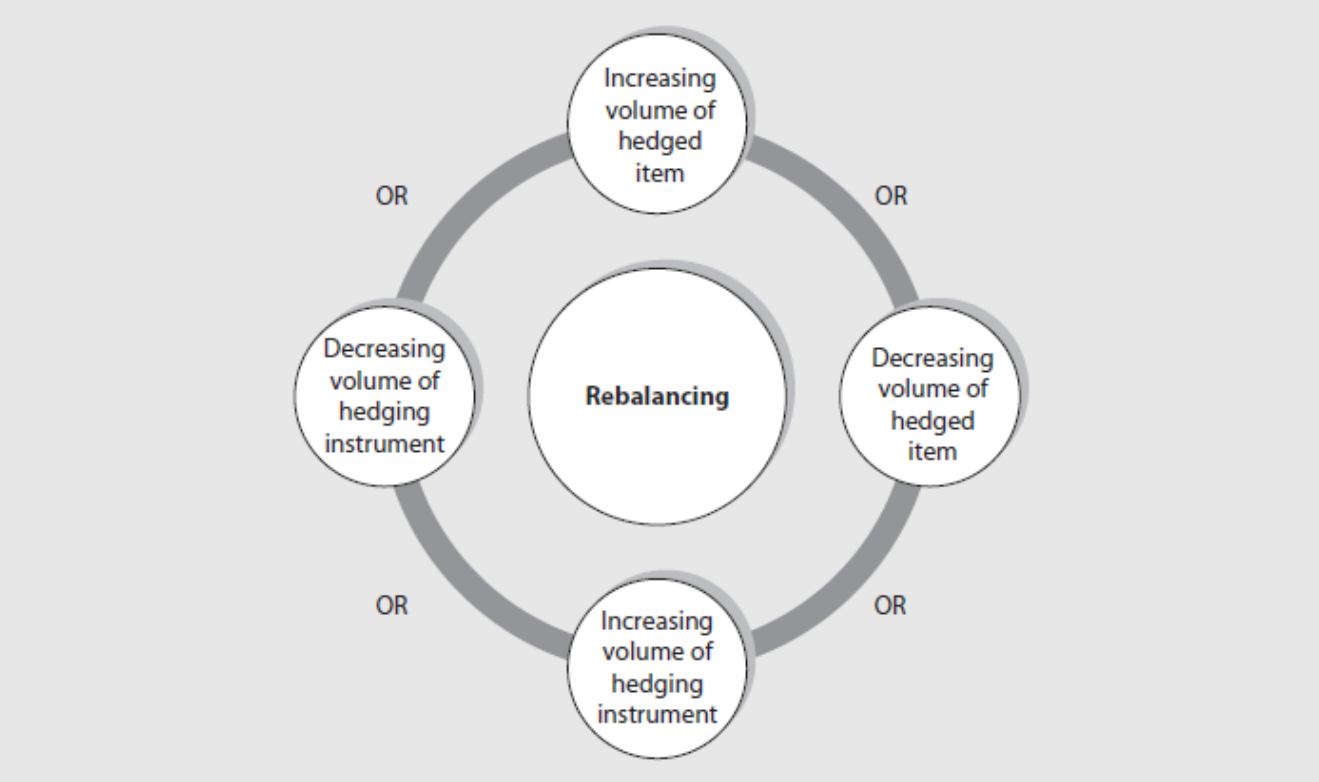
There could be situations that a hedging relationship ceases to meet the hedge effectiveness requirement in respect of the hedge ratio. This could be due changes in the relationship between the hedging instrument and the hedged item that arose from their underlyings or risk variables (for example: indices, rates, prices). When that happens and if the risk management objective[9] for that designated hedging relationship remains the same, paragraph 6.5.5 of IFRS 9 requires the entity to adjust the hedge ratio in the hedging relationship so that it meets the qualifying criteria again. The IFRS refers to this as "rebalancing".

The objective of rebalancing is to allow the continuation of a hedging relationship in situations where the relationship between the hedging instrument and the hedged item changes and this change can be compensated for by adjusting the hedge ratio (Paragraph B6.5.9 of IFRS 9). This, however, can only be done if the risk management objective for that hedging relationship remains unchanged. If the risk management objective has changed, paragraph B6.5.15 of IFRS 9 states clearly that rebalancing does not apply. Instead, the entity will discontinue hedge accounting for that hedge relationship.

Specifically, what the entity does when it rebalances the hedge ratio is to adjust the designated quantities of the hedged item or the hedging instrument of an existing hedging relationship with the intent of maintaining a hedge ratio that complies with the hedge effectiveness requirements. IFRS 9 states unequivocally that if the change to the designated quantities of a hedged item or of a hedging instrument is made for a purpose other than to comply with the hedge effectiveness requirement, that change does not constitute rebalancing for the purpose of the IFRS Standard. Figure 10.5 shows how an entity can achieve rebalancing. Further, paragraph B6.5.8 of IFRS 9 states that the entity is required to determine the hedge ineffectiveness of the hedging relationship on rebalancing and recognized immediately in the profit or loss before adjusting the hedging relationship.

page 912

FIGURE 10.5 Different methods to achieve rebalancing



IFRS 9 clarifies that when an entity changes the volume as part of rebalancing, that change in volume relates to the quantities that are part of the hedging relationship. Therefore, when the entity decreases the volumes, it does not mean that the items or transactions no longer exist, or are no longer expected to occur. It merely means that they are no longer part of the hedging relationship. The entity will have to account for the portion for which the volume was reduced under normal accounting rules. For instance, if the entity reduces the volume by decreasing the volume of the hedging instrument such that only part of the previous original amount remains as a hedging instrument in the hedging relationship, the entity continues to retain the volume that is no longer needed. In this situation, the entity will account for the undesignated part of the derivatives at fair value through profit or loss in accordance with IFRS 9. Illustration 10.6 demonstrates this.

ILLUSTRATION 10.6 Accounting for the effects of rebalancing

Assuming the same facts in Illustration 10.5. In this case, Coffee Ltd designates the hedge ratio as 1.02:1 on 30 June 20x1. In other words, Coffee Ltd designates a coffee future contract of 102.1 tonnes as a hedging instrument as a cash flow hedge for a highly probable forecast purchase of 100 tonnes of coffee (i.e. the hedged item). On 31 December 20x1, the cumulative change in the fair value of the futures contract is a loss of $50,000. The cumulative change in the fair value of the highly probable forecast purchase of coffee is a gain of $48,000 on the same date. Hence, Coffee Ltd will account for the cashflow hedge on 31 December 20x1 as follows:

Dr Fair value reserve – OCI (Effective portion)	48,000	
Dr Fair value change relating to hedge ineffectiveness – P/L	2,000	
Cr Futures contract – hedging instrument		50,000
Being accounting for effective and ineffective portion of cash flow hedge of highly probable forecast purchase		

On closer analysis on the hedging relationship, due to quality differences between the coffee to be purchased and the benchmark coffee quality in futures contract, Coffee Ltd determined that its initial expectation of the relationship was not precise enough. Consequently, Coffee Ltd decides to rebalance the hedge relationship. In particular, Coffee Ltd decides to adjust the hedge ratio as 0.85:1 on 31 December 20x1. In other words, it is going to designates 85 tonnes out of the 102.1 tonnes in the coffee future contract as a hedging instrument as a cash flow hedge for a highly probable forecast purchase of 100 tonnes of coffee. Consequently, 17.1 tonnes (102.1 tonnes – 85 tonnes) will no longer be part of the cash flow hedge relationship as a result of the rebalancing on 31 December 20x1. Accordingly, Coffee Ltd will have to discontinue hedge accounting in respect of the 17.1 tonnes (102.1 tonnes – 85 tonnes). In particular, Coffee Ltd will have to reclassify 17.1/102.1 (16.7%) of the fair value of the coffee futures contract as at 31 December 20x1 from being a hedging instrument to a held for trading instrument. Specifically, Coffee Ltd will pass the following accounting entry to account for the rebalancing.

Dr Futures contract – held for trading	8,550	
Cr Futures contract – hedging instrument		8,550

Being accounting for rebalancing

The fair value of the remaining portion 83.3% remains to be designated as a hedging instrument for the cash flow hedge.

When an entity rebalances a hedging relationship, IFRS 9 requires the entity to update its analysis of the sources of hedge ineffectiveness that are expected to affect the hedging relationship during its (remaining) term. The documentation of the hedging relationship is updated accordingly.

CLASSIFICATION OF HEDGING RELATIONSHIPS

IFRS 9 categorizes three types of hedging relationships:

1. Fair value hedge;
2. Cash flow hedge; and
3. Hedge of a net investment in a foreign entity.

In the following sections, we will describe these three types in detail.

FAIR VALUE HEDGE ACCOUNTING

A *fair value hedge* is a hedge of "the exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment, or an identified portion of such an asset, liability or firm commitment, which is attributable to a particular risk and could affect profit or loss." Examples of a fair value hedge include, but are not limited to, the following:

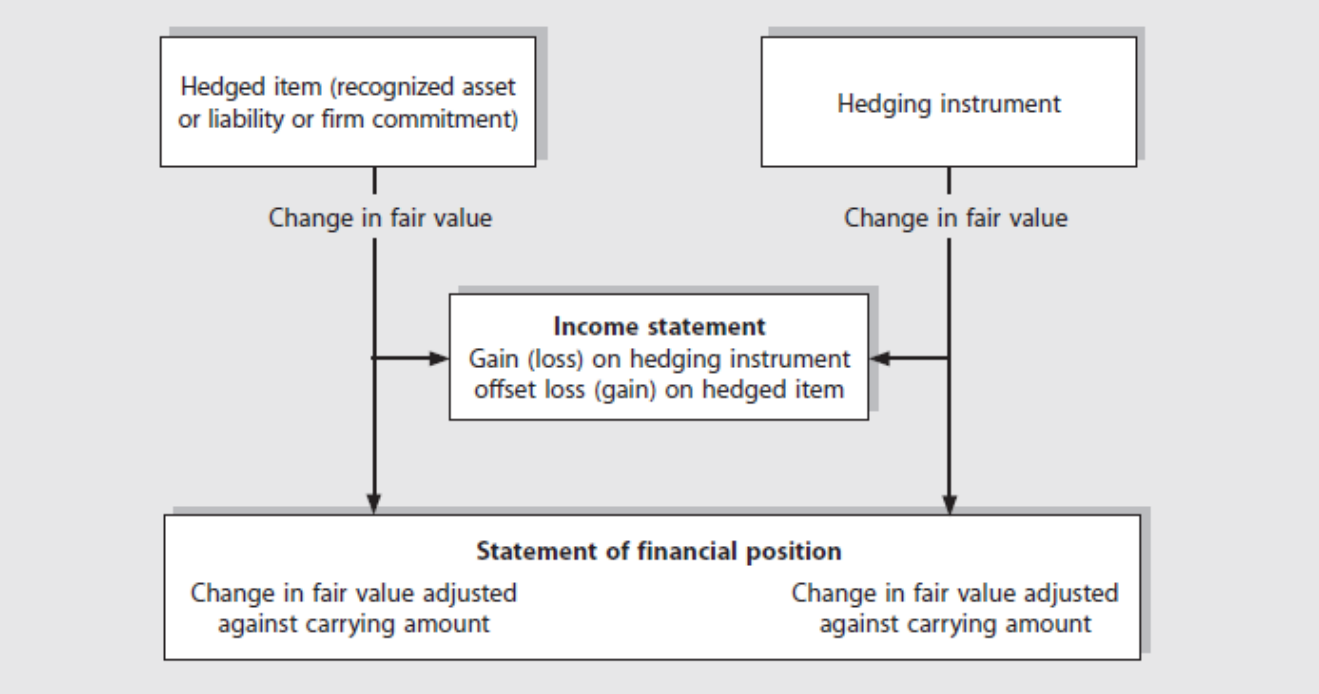
1. Hedge of FVOCI security;
2. Hedge of a fixed rate investment;
3. Hedge of inventory; or
4. Hedge of a firm commitment.

A firm commitment is "a binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date or dates." A hedge of a firm commitment is a fair value hedge because the commitment carries a contractual obligation that is tied to a fixed price. This exposes the enterprise to the risk that a change in the market price will result in a loss or gain on the commitment. B6.5.3 of IFRS 9 clarifies that a hedge of the foreign currency risk of a firm commitment could alternatively be accounted for as a cash flow hedge. Fair value hedges are typically hedges against fixed rate exposures.

Accounting for a Fair Value Hedge

The accounting procedures for a fair value hedge as set out in Paragraph 6.5.8 of IFRS 9 are summarized as follows (see Figures 10.6 and 10.7):

FIGURE 10.6 Accounting for a fair value hedge



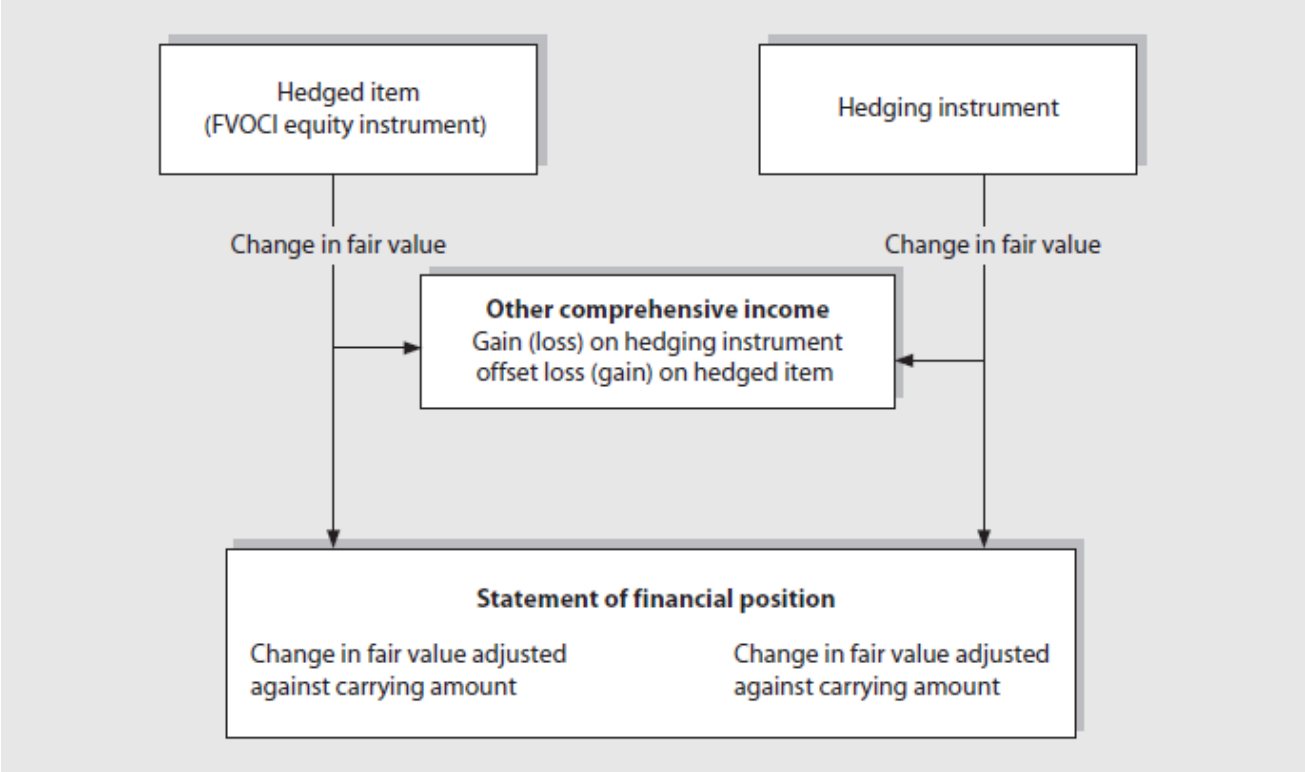
1. The change in the fair value of the hedging instrument is taken to the profit or loss; the carrying value of the hedging instrument is adjusted for the change in fair value. The exception to this requirement is when the hedged item is an equity instrument with changes in fair values recognized in other comprehensive income. In this case, the gains or losses on the hedging instrument is recognized in other comprehensive income to allow the offset to be carried out in other comprehensive income (see Figure 10.7).
2. The gain or loss on the hedged item attributable to the hedged risk is taken to the profit or loss. The carrying amount of the hedged item is adjusted by the amount of gain or loss. This is called "basis adjustment." Basis adjustment applies even if the hedged item is otherwise measured at cost, for example, inventory. What this means is that the adjusted carrying value of the hedged item in the case of a fair value hedge may result in the hedged item being carried at neither cost nor fair value as the adjustment is made only for fair value changes attributable to the risk being hedged (e.g. foreign currency risk), i.e. it is not adjusted for all risks and this adjustment will only take place for the duration for which hedge accounting is applied. If the hedged item is a financial instrument carried at amortized cost, the adjustment made to the carrying value is amortized to profit

or loss using a recalculated effective interest in the financial instrument. On the other hand, if the hedged item is an equity instrument for which the entity has elected to present changes in fair value in other comprehensive income, the gain or loss attributable to the hedged risk will remain in other comprehensive income.

3. When the hedged item in a fair value hedge is a firm commitment, the cumulative change in the fair value of the firm commitment attributable to the hedged risk is recognized as an asset or a liability with the corresponding gain or loss recognized in the profit or loss. If the firm commitment is for the acquisition of an asset or the incurrence of a liability, the cumulative change in the fair value of the firm commitment is adjusted against the initial carrying amount of the asset or liability when the commitment is met. A hedge of a foreign currency risk of a firm commitment may be accounted for as a fair value hedge or cash flow hedge.

Before we set out a series of examples that illustrate the accounting for fair value hedges, lets focus on hedging instruments. As discussed above, derivatives measured at fair value through profit or loss would generally qualify as hedging instruments under IFRS 9. Hedging instruments are required to be designated in its entirety in a hedge relationship. However, IFRS 9 provides for some exceptions. In particular, an entity can choose to designate the change in the intrinsic value but not the time value of an option as the hedging instrument. This is an alternative to designating the fair value change of the entire option as the hedging instrument. Similarly, an entity may designate the spot element but not the forward element in a forward contract as the hedging instrument in a hedge relationship. When the entity applies this option, IFRS 9 provides specific accounting rules for the two components. We will discuss this in the following section first before we set out different examples illustrating fair value hedge accounting.

FIGURE 10.7 Accounting for a hedge of a FVOCI equity instrument



ACCOUNTING FOR TIME VALUE OF OPTIONS

Paragraph 6.2.4(a) of IFRS 9 allows an entity to separate the intrinsic and time value of an option contract and designates only the change in intrinsic value of an option and not the change in its time value as the hedging instrument. The change in time value in the hedging instrument is recognized initially in other comprehensive income. The subsequent accounting of time value depends on the characteristics of the hedged item, i.e. whether it is transaction-related or time period-related (Paragraph 6.5.15 of IFRS 9). The hedged item is transaction-related if the time value of the option is used to hedge an item represents part of the cost of the transaction. An example is an entity hedging a forecast commodity purchase against commodity price risk using a purchased option and the entity includes transaction costs in the initial measurement of the carrying value of inventory.

For transaction-related hedged item, if hedged item subsequently results in recognition of non-financial asset or liability or a firm commitment, the fair value accumulated in other comprehensive income is adjusted against the initial cost or carrying amount of the asset or liability. This is not a reclassification adjustment. In other cases and in situations when the loss is not expected to be recovered in the future, the fair value accumulated in other comprehensive income is reclassified to profit or loss as a reclassification adjustment. A transaction hedge typically arises from a hedge of highly probable transaction or firm commitment.

The hedged item is time period-related if the time value is the cost for obtaining protection against a risk over a specific time period, but does not involve transaction costs. For example, the time value of option hedging a commodity inventory for six months is amortized to profit or loss over the six-month period. Another example is an interest rate cap (option) to protect against increases in interest expenses of a floating rate bond. The time value of the cap is amortized over the period when the cap hedges increases in interest rates (expenses) of the bond. A time-related hedge is one that covers the risks of recognized asset or liability. Time values are classified in OCI in both transaction-related and time-related hedges. In transaction-related hedge, the OCI is adjusted to the asset/liability that arises from the forecasted transaction or firm commitment. In time-related hedge, the OCI is allocated to profit/loss over the time period of hedge.

ILLUSTRATION 10.7 Transaction-related hedge using option

On 1 April 2018, an entity with functional currency Singapore dollar plans to buy a piece of equipment in USD 12,000,000 that is expected to be delivered on 31 December 2018. The entity faces a USD versus SGD foreign exchange risk. The entity hedges the downside risk with an option to buy USD 12,000,000 and sell SGD with the same terms as the highly probable purchase of equipment and exercise price of 1.30. The entity designates the intrinsic value of the option as a cash flow hedge. The USD/SGD exchange rates on 1 April 2018, 30 June 2018, 30 September 2018 and 31 December 2018 are 1.30, 1.36, 1.37 and 1.40 respectively.

On 1 April 2018, 30 June 2018 and 30 September 2018, the time values of option are SGD 50,000, SGD 30,000, and SGD 14,000, respectively. This corresponds to changes in time values booked in fair value reserve (OCI) of SGD 20,000, SGD 16,000, and SGD 14,000 in quarters 2, 3, and 4, respectively. On 31 December 2015, the SGD 50,000 in fair value reserve is included in the equipment cost, when the equipment has been delivered.

This is a hedge of highly probable forecasted purchase transaction, a transaction-related cash flow hedge. Journal entries are as follows (in Singapore dollars).

1 April 2018	Dr Call Option	50,000	
	Cr Cash		50,000
	Purchase of call option		

30 June 2018	Dr Cash flow hedge reserve (OCI)	20,000	
	Cr Call option		20,000
	Decline in time value from 1 April to 30 June 2018		
	Dr Call option (1.36 – 1.30) × 12 million	720,000	
	Cr Cash flow hedge reserve (OCI)		720,000
	Increase in intrinsic value from 1 April to 30 June 2018		
30 September 2018	Dr Cash flow hedge reserve (OCI)	16,000	
	Cr Call option		16,000
	Decline in time value from 30 June to 30 September 2018		
	Dr Call option (1.37 – 1.36) × 12 million	120,000	
	Cr Cash flow hedge reserve (OCI)		120,000
	Increase in intrinsic value from 30 June to 30 September 2018		
31 December 2018	Dr Cash flow hedge reserve (OCI)	14,000	
	Cr Call option		14,000
	Decline in time value from 30 September to 31 December 2018		
	Dr Call option (1.40 – 1.37) × 12 million	360,000	
	Cr Cash flow hedge reserve (OCI)		360,000
	Increase in intrinsic value from 30 September to 31 December 2018		
	Dr Equipment	16,800,000	
	Cr Cash (12 million × 1.40)		16,800,000
	Delivery of equipment		
	Dr Equipment	1,200,000	
	Cr Cash flow hedge reserve (OCI)		1,200,000
	Adjust equipment cost for the cash flow hedge reserve		
	Dr Cash	1,200,000	
	Cr Call option		1,200,000
	Exercise of call option on expiry date		

For time-related hedged item, the time value is accumulated in other comprehensive income and amortized over the period during which the hedge adjustment for the intrinsic value affects profit or loss (or other comprehensive income if the hedged item has been elected to present changes in fair value in other comprehensive income). If the hedge accounting is discontinued, the net amount in other comprehensive income including the cumulative amortization is reclassified into profit or loss.

ILLUSTRATION 10.8 Time period-related hedge using option

On 1 April 2018, an entity with functional currency Singapore dollar issued a five-year floating rate (nominal amount SGD1 million, at interest rate LIBOR + 3% payable annually) bond in Singapore dollars. In order to protect itself from interest rate increases, the entity bought an interest rate cap on 1 April 2018 with maturity of five years. The entity designates the intrinsic value of the cap as the cash flow hedge. LIBOR rate was 2% on 1 April 2018.

On 1 April 2018 and 31 December 2018, the time values (fair values) of the interest rate cap are SGD 100,000 (SGD100,000) and SGD 88,000, (SGD92,000) respectively. The time values are amortized on a straight-line basis over the hedge period. For the period 1 April to 31 December 2018, the amortization of time value to expense is SGD 100,000/5 × 9/12 = SGD 15,000. The OCI balance is credit SGD 3,000 (SGD 88,000 – (SGD 100,000 – SGD 15,000)).

This is a hedge of cash flows from floating interest rates, a time-related cash flow hedge. Journal entries are as follows (in Singapore dollars).

1 April 2018	Dr Cash	1,000,000	
	Cr Bond payable		1,000,000
	To record issuance of bond		
	Dr Interest rate cap	100,000	
	Cr Cash		100,000
	To record purchase of interest rate cap		
31 December 2018	Dr Interest expense	37,500	
	Cr Interest payable (5% × $1 million × 9/12)		37,500
	To record interest accrual on bond payable		
	Dr Cash flow hedge reserve (OCI)	12,000	
	Cr Interest rate cap (100,000 – 88,000)		12,000
	Change in time value of interest rate cap from 1 April to 31 December 2018		
	Dr Amortization of interest rate cap (P/L)	15,000	
	Cr Cash flow hedge reserve (OCI)		15,000

The accounting for time value of options applies to the net nil time value in the combination of a purchased and a written option. Changes in time value are recognized in other comprehensive income. For transaction-related hedged item, the time value that adjusts hedged item or is reclassified to profit or loss at the end of the hedging relationship is nil. For time-related hedged item, the amortization expense is nil.

If the critical terms of the hedging option and the hedged item are not fully aligned, the aligned time value (that is, value of option that with terms that perfectly match the hedged item) is determined and accounted for as follows:

(a) If at inception of hedging relationship, actual time value is higher than aligned time value, the aligned time value is accumulated in other comprehensive income and the difference between actual and aligned time values are accounted for in profit or loss.

(b) If at inception of hedging relationship, aligned time value is higher than actual time value, the lower of the two is accumulated in other comprehensive income and the remainder of the change in actual time value is recognized in profit or loss.

ACCOUNTING FOR FORWARD ELEMENT OF FORWARDS

Paragraph 6.2.4(b) of IFRS 9 also allows an entity to separate the forward element and the spot element of a forward contract and designate only the change in the value of the spot element of a forward contract and not the forward element as the hedging instrument. The change in the fair value of the (actual) forward element is accumulated in other comprehensive income and the (aligned) forward element that exists at inception amortized in profit or loss over the period over which the forward element relates. The forward element is accounted for similar to the time value of option, classified by transaction-related or time value-related hedged item (paragraphs 6.5.15-6.5.16 IFRS 9). If the hedge accounting is discontinued, the net amount in other comprehensive income including the cumulative amortization, is reclassified to profit or loss. The forward element of a forward contract relates to the hedged item if the critical terms of forward contract are fully aligned with the hedged item. If the critical terms are not fully aligned, the amount is accumulated in other comprehensive income as follows:

(a) If at inception of hedging relationship, the absolute actual forward element is higher than aligned forward element, the aligned forward element is accumulated in other comprehensive income and the difference between actual and aligned forward elements are accounted for in profit or loss.

(b) If at inception of hedging relationship, the aligned forward element is higher than the absolute actual forward element, the lower of the two is accumulated in other comprehensive income and the remainder of the change in actual forward element is recognized in profit or loss.

In this section, we set out the examples that illustrate the accounting for the following types of fair value hedges:

1. Hedge of an exposed monetary asset (see Illustration 10.9 - time value of forward is separately accounted)
2. Hedge of inventory (see Illustration 10.10 overall forward is accounted as a fair value hedge without time value separately accounted);
3. Hedge of equity instruments classified as FVOCI (see Illustration 10.11);
4. Hedge of a firm commitment (see Illustration 10.12).

ILLUSTRATION 10.9 Hedge of an exposed monetary asset

Gemini Enterprise, whose functional currency is the dollar, sold merchandise with an invoice value of FC 100,000 on 2 December 20x4 with payment due on 31 January 20x5. The spot exchange rate on that date was $1.85/FC 1. Gemini hedged the exposed accounts receivable by entering into a forward exchange contract to deliver (sell) FC 100,000 on 31 January 20x5 at the forward rate of $1.835/FC 1. The exchange rates between the FC and the dollar are as follows:

	Spot rate	31 January 20x5 forward rate
31 December 20x4	$1.835/FC 1	$1.825/FC 1
31 January 20x5	$1.82/FC 1	$1.82/FC 1

Gemini's year-end is 31 December. Discounting is ignored in order to simplify the illustration. Gemini Enterprise records the following entries to account for the hedge:

2 Dec 20x4	Dr Accounts receivable (FC)	185,000	
	Cr Sales		185,000
	Sale of merchandise with invoice value of FC 100,000 at the spot exchange rate		
31 Dec 20x4	Dr Loss on accounts receivable (P/L)	1,500	
	Cr Accounts receivable (FC)		1,500
	Remeasure accounts receivable to closing spot rate as it is a monetary item and recognize a transaction loss: [FC 100,000 × (1.835 – 1.85)]		
	Dr Forward contract	1,500	
	Cr Gain on forward contract (P/L)		1,500
	Intrinsic value gain on forward contract: [FC 100,000 × (1.835 – 1.85)]		
31 Dec 20x4	Dr Deferred loss on forward (OCI)	500	
	Cr Forward contract		500
	((1.85 – 1.835) - (1.835 – 1.825)) × 100,000 Time value change of forward from 2 Dec to 31 Dec 20x4		
31 Dec 20x4	Dr Amortization of time value (P/L)	750	
	Cr Deferred loss on forward (OCI)		750
	(1.85 – 1.835) × 100,000 × 1/2 Amortization of initial time value of forward to P/L		

31 Jan 20x5	Dr Loss on accounts receivable (P/L)	1,500	
	Cr Accounts receivable (FC)		1,500
	Remeasure accounts receivable to closing spot rate and record a transaction loss: [FC 100,000 × (1.82 – 1.835)]		

31 Jan 20x5	Dr Forward contract	1,500	
	Cr Gain on forward contract (P/L)		1,500
	Intrinsic value gain on forward contract: [FC 100,000 × (1.835 - 1.82)]		
31 Jan 20x5	Dr Deferred loss on forward (OCI)	1,000	
	Cr Forward contract (1.835 – 1.825) × 100,000 . .		1,000
	Time value change of forward from 31 Dec 20x4 to 31 Jan 20x5		
31 Jan 20x5	Dr Amortization of time value (P/L)	750	
	Cr Deferred loss on forward (OCI)		750
	Amortization of initial time value of forward to P/L		
31 Jan 20x5	Dr Cash	183,500	
	Cr Forward contract		1,500
	Cr Accounts receivable (FC)		182,000
	Settlement of accounts receivable and closing of forward contract. The accounts receivable is settled at the spot rate at settlement date (FC 100,000 × 1.82)		

The settlement amount of the forward contract is the balance in the forward contract account. It can also be checked by multiplying the notional amount with the difference between the contracted forward rate and the spot rate at settlement date [FC 100,000 × (1.835 – 1.82)]. In this situation, there is a receipt due from the broker because the contracted forward rate is higher than the final spot rate. The net cash proceeds of $183,500 effectively locks in the overall settlement at the forward rate of 1.835.

There is a loss of $3,000 on the accounts receivable that is partially offset by a gain of $1,500 on the forward contract as a result of the depreciation of the FC against the dollar. The difference of $1,500 is the forward discount on the contract; it represents the cost of hedging. Since the loss on the translation of the foreign currency denominated accounts receivable and the gain on the forward contract are both taken to the income statement, special rules for hedge accounting are not needed to achieve the offset. Such scenario is known as natural hedge in practice. Hence, in this case, Gemini Enterprise does not need to apply the hedge accounting rules and accordingly, hedge documentation are not required to be maintained.

A comparison of consequence from hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging
Profit or loss effects			
Sales	185,000	185,000	185,000

Gain on forward contract	1,500	1,500	–
Loss on accounts receivable	3,000	3,000	3,000
Cash flow effects			
Sale proceeds	185,000	185,000	185,000
Proceeds from forward contract	1,500	1,500	–

ILLUSTRATION 10.10 Hedge of inventory (fair value hedge)

GEMS Mining Company had an inventory of 10,000 ounces of gold at 31 October 20x3, which was carried at cost at $3,000,000 ($300 per ounce). The price of gold on that date was $352 per ounce. On 1 November 20x3, GEMS sold a gold forward contract on 10,000 ounces of gold at a forward price of $350 per ounce. The contract matured on 31 March 20x4. The forward contract was deemed a financial instrument under IFRS 9 as GEMS intended to settle the contract on a net settlement basis. The purpose of entering into this contract was to lock in a net margin of $50 per ounce or $500,000 in total when the gold was eventually sold. On 31 December 20x3, the financial year-end of GEMS, the forward price for a 31 March 20x4 gold contract was $340 per ounce while the spot price of gold was $342 per ounce. There was a gain of $100,000 on the forward contract, and a corresponding loss was recorded on the inventory.

The financial year-end of GEMS is 31 December. In documenting the hedge, GEMS designated the risk as the change in the value of the gold inventory as a result of changes in the spot price of gold. GEMS measured hedge effectiveness by comparing the cumulative change in the fair value of the forward contract with the cumulative change in the fair value of the inventory. Since the hedged item is the inventory of gold whose value changes with the price of gold, the hedge was designated as a fair value hedge. To qualify for hedge accounting, the requirements for hedge effectiveness must be met. Specially, at inception, GEMS assesses the economic relationship between the hedged item (i.e. 10,000 ounces of gold inventory) and hedging instrument (forward contract to sell 10,000 ounces of gold) qualitatively based on a critical terms analysis. As the hedged exposure is exactly matched by the hedging instrument, there is clearly an economic relationship between them. In particular, the hedge was expected to be highly effective as the critical terms match. Further, based on GEMS' analysis, credit risk is minimal and does not dominate the economic relationship between the hedging instrument and hedged item at inception. The hedge ratio is based on a forward contract for the sale of 10,000 ounces of gold at $350 per ounce for an existing batch of inventory of 10,000 ounces of gold that is carried at $300 per ounce in the financial statements. In other words, the hedge ratio is 1:1 or 100%. Discounting of the forward contract was ignored to simplify the illustration. At 31 December 20x3, the hedge was fully effective as the change in the fair value of the forward contract ($100,000) was fully offset by the change in the fair value of the inventory ($100,000). The hedge effectiveness ratio was 1. The journal entries to record the fair value hedge for the year ended 31 December 20x3 are as follows:

1 Nov 20x3	*No entry or just a memorandum entry as the fair value of the forward contract is nil*		
31 Dec 20x3	Dr Forward contract	100,000	
	Cr Gain on forward contract (P/L)		100,000
	Gain on forward contract: 10,000 × ($340 – $350)		

31 Dec 20x3	Dr Loss on inventory (P/L)	100,000	
	Cr Inventory		100,000
	Loss on inventory: 10,000 × ($342 – $352)		

Notes:

1. Since this is a fair value hedge, the change in the fair value of the hedging instrument (the forward contract) and the change in the value of the hedged item (the inventory) are taken to the income statement.
2. The carrying value of the inventory is adjusted for the fair value change so that the offsetting changes in the fair value of the hedged item and the hedging instrument are recorded in the same period. The adjusted carrying value of the inventory becomes the new cost basis for the purpose of applying the lower of cost or net realizable value rule.

page 923

Assume that the inventory is sold to a third party at a price of $330 an ounce on 31 March 20x4, which was also the maturity date of the forward contract. (Note that the sale of the inventory is not settlement of the forward contract by physical delivery.) The journal entries to record the sale and the hedge for the year ended 31 December 20x4 are as follows:

31 Mar 20x4	Dr Forward contract	100,000	
	Cr Gain on forward contract		100,000
	Gain on forward contract: 10,000 × ($330 – $340)		
31 Mar 20x4	Dr Loss on inventory	120,000	
	Cr Inventory		120,000
	Loss in value of inventory: 10,000 × ($330 – $342)		
31 Mar 20x4	Dr Cash	3,300,000	
	Cr Sales		3,300,000
	Sale of inventory: 10,000 × $330		
31 Mar 20x4	Dr Cost of goods sold	2,780,000	
	Cr Inventory		2,780,000
	Cost of goods sold: $3,000,000 – $100,000 – $120,000		
31 Mar 20x4	Dr Cash	200,000	
	Cr Forward contract		200,000
	Close forward contract and record net receipt on settlement, which is the notional amount multiplied by the difference between the contracted forward rate and the spot rate on settlement [10,000 × ($350 – $330)]		

A comparison of consequence from hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging

Profit or loss effects			
Sales	3,300,000	3,300,000	3,300,000
Cost of goods sold	(2,780,000)	(3,000,000)	(3,000,000)
Gain on forward contract	200,000	200,000	–
Loss on inventory	(220,000)	–	–
Net profit or loss	500,000	500,000	300,000
Cash flow effects			
Sale proceeds	3,300,000	3,300,000	3,300,000
Proceeds from forward contract	200,000	200,000	–

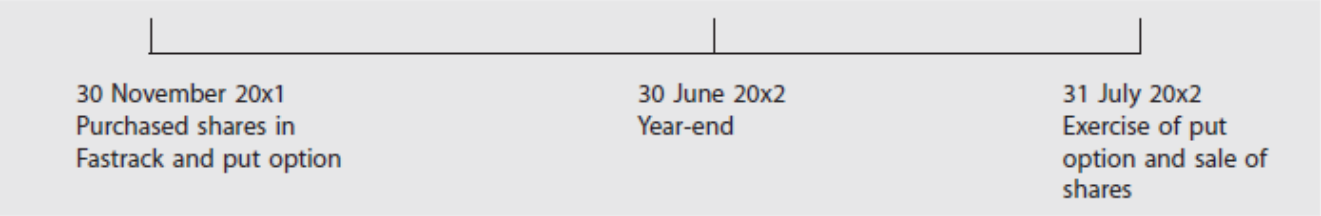
ILLUSTRATION 10.11 Fair value hedge of FVOCI equity instrument with a purchased put option

On 30 November 20x1, Systech Ltd purchased 1,000 shares of Fastrack Ltd at $5 per share. To protect itself against a loss in the value of the investment should the share price of Fastrack Ltd fall, Systech Ltd purchased an at-the-money put option (that is, the exercise price was $5 per share) on 1,000 Fastrack shares for $500 on the same date. The put option matured on 31 July 20x2. Systech's financial year-end is 30 June. The price movements of Fastrack shares and the put option are as follows:

Date	Price of Fastrack share	Price of put option
30 November 20x1	$5.00	$ 500
30 June 20x2	4.50	700
31 July 20x2	4.00	1,000

Systech classified the investment as FVOCI. Systech designated the hedged risk as the risk that Fastrack's share price would fall below $5. The time value component of the put option was excluded from the hedging relationship. System documented the hedge as a fair value hedge. To qualify for hedge accounting, the requirements for hedge effectiveness must be met. Specially, at inception, Systech assesses the economic relationship between the hedged item (i.e. 1,000 Fastrack shares) and hedging instrument (purchased put option to sell 1,000 Fastrack shares) qualitatively based on a critical terms analysis. As the hedged exposure is exactly matched by the hedging instrument, there is clearly an economic relationship between them. In particular, at inception, the hedge was expected to be highly effective as the critical terms matched. Further, based on Systech's analysis, credit risk is minimal and does not dominate the economic relationship between the hedging instrument and hedged item at inception. The hedge ratio is based on a put option on 1,000 Fastrack shares at $5 per share for existing 1,000 Fastrack shares held by Systech. In other words, the hedge ratio is 1:1 or 100%. On 31 July 20x2, Systech closed the option and disposed of its investment in Fastrack.

The hedge is depicted in the following timeline diagram.



Fair value computations

	30 November 20x1	30 June 20x2	31 July 20x2
Fastrack shares:			
Per share	$ 5	$ 4.50	$ 4.00
Total (1,000 shares)	5,000	4,500	4,000
Put option:			
Fair value (a)	500	700	1,000
Less: Intrinsic value (b)	0	500	1,000
Time value (a) – (b)	$ 500	$ 200	$ 0

Journal entries to record the hedged item and the hedging instrument are as follows:

Hedged item				Hedging instrument			
30 Nov 20x1	Dr FVOCI investment.....	5,000		*30 Nov 20x1*	Dr Put option	500	
	Cr Cash.....		5,000		Cr Cash.....		500
	FVOCI investment				*Purchase of put option*		
30 Jun 20x2	Dr Deferred Loss on FVOCI Investment (OCI).....	500		*30 Jun 20x2*	Dr Put option	500	
	Cr FVOCI investment....		500		Cr Deferred gain on put option (OCI)		500
	Loss in fair value FVOCI: Refer to Notes 1–3				*Gain in intrinsic value of put option*		
31 Jul 20x2	Dr Deferred Loss on FVOCI Investment (OCI).....	500		*30 Jun 20x2*	Dr Deferred loss on put option (OCI).....	300	
	Cr FVOCI investment		500		Cr Put option		300
	Loss in fair value of FVOCI investment				*Loss in time value of put option*		
31 Jul 20x2	Dr Cash	4,000		*31 Jul 20x2*	Dr Put option	500	
	Cr FVOCI Investment....		4,000		Cr Deferred gain on put option (OCI).....		500
	Sale of FVOCI Investment: *Refer to Note 4*				*Gain in intrinsic value of put option*		
31 Jul 20x2	Dr Retained earnings.....	1,000		*31 Jul 20x2*	Dr Deferred loss on put option (OCI).....	200	
	Cr Deferred loss on FVOCI Investment (OCI).....		1,000		Cr Put option		200
	Being reclassified of amounts accumulated in OCI to retained earnings on disposal of FVOCI investment				*Loss in time value of put option*		
					Dr Deferred gain on put option (OCI).....	500	
					Cr Retained earnings ..		500
					Reclassify from deferred gain to retained earnings		
					Dr Cash	1,000	
					Cr Put option		1,000
					Exercise put option		

Notes:

1. When a financial asset is classified as FVOCI, IFRS 9 requires it to be measured at fair value with the changes in the fair value taken to other comprehensive income.
2. When a FVOCI equity security is part of an effective hedging relationship, changes in the fair value of the security are taken to other comprehensive income while changes in the fair value of the hedging instrument are also recognized in other comprehensive income and accumulated in a separate reserve in equity. Consequently, any hedge ineffectiveness is recognized in other comprehensive income (Paragraph

6.5.3 of IFRS 9). Upon the sale of the FVOCI investment, the gains or losses accumulated in other comprehensive income are not reclassified to profit or loss. Accordingly, the same treatment will apply for the cumulative fair value changes on the hedging instrument (includes any hedge ineffectiveness) that was recorded in other comprehensive income.

3. Any deferred gain or loss on a FVOCI security prior to the commencement of a hedge remains in equity until the security is disposed of.
4. The hedge has the effect of locking the cash inflow at $5,000 as follows:

Proceeds from the sale	$4,000
Proceeds from the put option	1,000
Effective proceeds	$5,000

A comparison of consequence of hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging
Profit or loss effects			
Gain from put option	–	500	–
FVOCI equity investment	–	–	–
Cash flow effects			
Sale proceeds	4,000	4,000	4,000
Proceeds from put option	1,000	1,000	–

ILLUSTRATION 10.12 Fair value hedge of a firm commitment

On 30 June 20x5, Decca Company entered into a firm commitment to sell 10,000 tons of palm oil at $298 per ton to a customer with delivery and payment on 30 September 20x5. The spot price of palm oil at 30 June 20x5 was $298 per ton. By entering into the firm commitment, Decca had a fair value exposure to changes in the price of palm oil. If the price of palm oil had increased on the date of delivery, Decca would suffer a loss on the firm commitment as the committed sale price would be less than the market price of palm oil. Decca decided to hedge the commitment by purchasing ten September 20x5 futures contracts (each contract had a notional amount of 1,000 tons) at $300 per ton. If the price of palm oil increased to above $300 per ton, Decca would make a gain on the futures contract. Decca Company was required to pay a margin deposit of $10,000 per contract, which must be maintained throughout the life of the futures contracts. Decca Company designated the hedge as a fair value hedge of the firm commitment to sell 10,000 tons of palm oil. The management of Decca measured hedge effectiveness by comparing the cumulative change in the fair value of the futures contracts with the cumulative change in the fair value of the firm commitment. To qualify for hedge accounting, the requirements for hedge effectiveness must be met. Specially, at inception, Decca assesses the economic relationship between the hedged item (i.e. the firm commitment to sell 10,000 tons of palm oil with delivery and payment in September 20x5) and hedging instrument (10 futures contract with total notional amount of 10,000 tons of palm oil with settlement on September 20x5) qualitatively based on a critical terms analysis. As the hedged exposure is exactly matched by the hedging instrument, there is clearly an economic relationship between them. In particular, at inception, the hedge was expected to be highly effective as the

critical terms matched. Further, based on Decca's analysis, credit risk is minimal and does not dominate the economic relationship between the hedging instrument and hedged item at inception. The hedge ratio is based on futures contract on 10,000 tons of palm oil for a firm purchase commitment of 10,000 tons of palm oil. In other words, the hedge ratio is 1:1 or 100%.

The selected spot and futures prices are as follows:

	30 June	31 July	31 August	30 September
Spot price/ton	$298	$305	$309	$315
30 September futures price/ton	$300	$307	$310	$315

The following table shows the changes in the fair values of the futures contracts and the firm commitment.

	31 July	31 August	30 September
Spot price/ton	$ 305	$ 309	$ 315
30 September futures price/ton	307	310	315
Contracted futures price	300	300	300
Quantity (tons)	10,000	10,000	10,000
Fair value of futures contract	$ 70,000[a]	$100,000[b]	$150,000
Change in fair value of futures	70,000	30,000	50,000
Value of firm commitment	(70,000)[c]	(110,000)[d]	(170,000)
Change in value of firm commitment	(70,000)	(40,000)	(60,000)
Hedge effectiveness ratio	1	0.91[e]	0.88[f]

[a] ($307 – $300) × 10,000 (Current futures price – Previous futures price) × Quantity

[b] ($310 – $300) × 10,000

[c] ($298 – $305) × 10,000 (Contracted price – Current spot price) × Quantity

[d] ($298 – $309) × 10,000

[e] $100,000/$110,000

[f] $150,000/$170,000

The journal entries to record the hedged item and the hedging instrument for 20x5 are as follows:

Hedged item			Hedging instrument		
30 Jun	No journal entry is required to record the firm commitment		*30 Jun*	Dr Margin deposit[10]	100,000
				Cr Cash	100,000
				To record payment of margin deposit on ten contracts	

Hedged item				Hedging instrument			
31 Jul	Dr Loss on firm commitment (P/L)	70,000		*31 Jul*	Dr Futures contract	70,000	
	Cr Firm commitment		70,000		Cr Gain on futures contract (P/L)		70,000
	To record loss in fair value of firm commitment as a result of the increase in the spot price of palm oil. Discounting of the firm commitment has been ignored to simplify the illustration				*To record gain on futures contract*		
31 Aug	Dr Loss on firm commitment (P/L)	40,000		*31 Aug*	Dr Futures contract	30,000	
	Cr Firm commitment		40,000		Cr Gain on futures contract (P/L)		30,000
	To record loss in fair value of firm commitment				*To record gain on futures contract*		
30 Sep	Dr Loss on firm commitment (P/L)	60,000		*30 Sep*	Dr Futures contract	50,000	
	Cr Firm commitment		60,000		Cr Gain on futures contract (P/L)		50,000
	To record loss on firm commitment				*To record gain on futures contract*		
30 Sep	Dr Cash	2,980,000		*30 Sep*	Dr Cash	250,000	
	Cr Sales		2,980,000		Cr Margin deposit		100,000
	To record sale of palm oil at the contracted price of $298 per ton				Cr Futures contract		150,000
30 Sep	Dr Firm commitment	170,000			*To close the position on the futures contract and record refund of the margin deposit*		
	Cr Sales		170,000				
	To adjust firm commitment against sales						

A comparison of consequence of hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging
Profit or loss effects			
Sales	3,150,000	2,980,000	2,980,000
Gain on futures contract	150,000	150,000	–
Loss on firm commitment	(170,000)	–	–
Net profit/loss	3,130,000	3,130,000	2,980,000
Cash flow effects			

Sale proceeds	2,980,000	2,980,000	2,980,000
Proceeds from futures contract	150,000	150,000	–

The company has a firm commitment to sell at $298 per ton, deliverable on 30 September. To hedge this exposure, it enters into a futures contract to buy at $300 per ton, deliverable on 30 September. Hence, if the price of the palm oil increases to above $298, it would lose on the sales contract but the loss on the sales contract would be offset by the gain on the futures contract. If the price of the palm oil decreases, it would gain on the sales contract but would lose on the purchase contract. Regardless of the price change, the net profit will be locked.

For comparability, we assume that the inventory is bought on 30 September.

	Hedged	Hedged	Unhedged	Unhedged
Spot Price on 30 Sept	315	290	315	290
Sales	3,150,000	2,900,000	2,980,000	2,980,000
Cost of sales	(3,150,000)	(2,900,000)	(3,150,000)	(2,900,000)
Gross profit	–	–	(170,000)	80,000
Gain/(Loss) on firm commitment *(a)*	(170,000)	80,000	0	0
Gain/(loss) on futures contract *(b)*	150,000	(100,000)	0	0
Net Profit	(20,000)	(20,000)	(170,000)	80,000

(a) Gain or loss is the difference between the contracted price and the spot price

IFRS 9 paragraph 6.5.9 states that when a hedged item is a firm commitment, the initial carrying amount of asset or liability that arises from the entity meeting the firm commitment is adjusted to include the cumulative change in fair value of hedged item recognized in the statement of financial position.

(b) Gain or loss on the futures contract is the difference between the Spot and the contracted price

Notes:

1. A firm commitment is an executory contract. As explained earlier, an executory contract is normally not recognized in the financial statements. However, IFRS 9 provides an exception to this rule and requires the recognition of changes in the fair value of a firm commitment in the financial statements in applying hedge accounting. At inception, the fair value of the firm commitment is nil. As the underlying changes, the fair value of the firm commitment may become positive (classified under the Current Assets section) or negative (classified under the Current Liabilities section). This is a temporary account and the balance is adjusted against sale revenue on the date of delivery.
2. The effect of the hedge is to allow Decca Company to avoid any loss from the increase in the palm oil price above the contracted price of $298 per ton.

CASH FLOW HEDGE ACCOUNTING

A *cash flow hedge* is a "hedge of the exposure to variability in cash flows that (i) is attributable to a particular risk associated with a recognized asset or liability (such as all or some future interest payments on variable rate debt) or a highly probable forecast transaction, and (ii) could affect profit or loss." A cash flow hedge applies to the following situations:

1. Hedge of a recognized asset or liability with a variable interest rate (resulting in a variable future cash flow); and
2. A highly probable future transaction.

Certain types of hedges have the characteristics of both a fair value hedge and a cash flow hedge. An example is the hedge of a firm commitment denominated in a foreign currency. An exchange rate movement will affect the fair value of the commitment, implying a fair value change. An alternative view is that the cash flows from a foreign currency denominated firm commitment are exposed to exchange rate changes when the commitment is ultimately settled. The hedge of a foreign currency denominated firm commitment can be either a fair value hedge or a cash flow hedge. Cash flow hedges are typically hedges against floating rate exposures.

Accounting for a Cash Flow Hedge

The procedures for accounting for a cash flow hedge are more complex than those for a fair value hedge. The procedures as set out in Paragraph 6.5.11 of IFRS 9 are summarized as follows:

1. The change in the fair value of the hedging instrument is adjusted to its carrying value in the statement of financial position.
2. The change in the fair value of the hedging instrument is separated into an effective portion and an ineffective portion, if any.
3. The effective portion is deferred to other comprehensive income (cashflow hedge reserve) and the ineffective portion (if any) is recognized as an expense in the profit or loss. The reason for the deferment of the effective portion is that the transaction (the hedged item) has not been recognized yet.
4. The effective portion that is deferred to other comprehensive income is the lesser of the following (in absolute amounts):
   (a) The cumulative gain or loss on the hedging instrument from the inception of the hedge; and
   (b) The cumulative change in the present value of the expected future cash flows on the hedged item from the inception of the hedge.
5. If the hedged item is a financial asset or financial liability, the deferred gain or loss in other comprehensive income is taken to profit or loss in the same period or periods during which the asset acquired or the liability assumed affects profit or loss (such as in the periods that interest income or interest expense is recognized).
6. If the hedged item is a forecasted transaction that will result in the recognition of a non-financial asset or non-financial liability, transfer the deferred gains or losses in other comprehensive income to adjust the initial cost or other carrying amount of the asset or liability. This same accounting treatment will apply when the hedged forecast transaction of a non-financial item asset or liability becomes a firm commitment for which fair value hedge accounting is applied.
7. For all other hedges, the amount accumulated in other comprehensive income will be reclassified from other comprehensive income to profit and loss as a reclassification adjustment in the same period (or periods) when the hedged future cash flows affect the profit or loss.

The accounting treatment of a cash flow hedge of a forecasted transaction is shown in Figure 10.8.

FIGURE 10.8

Accounting for a cash flow hedge

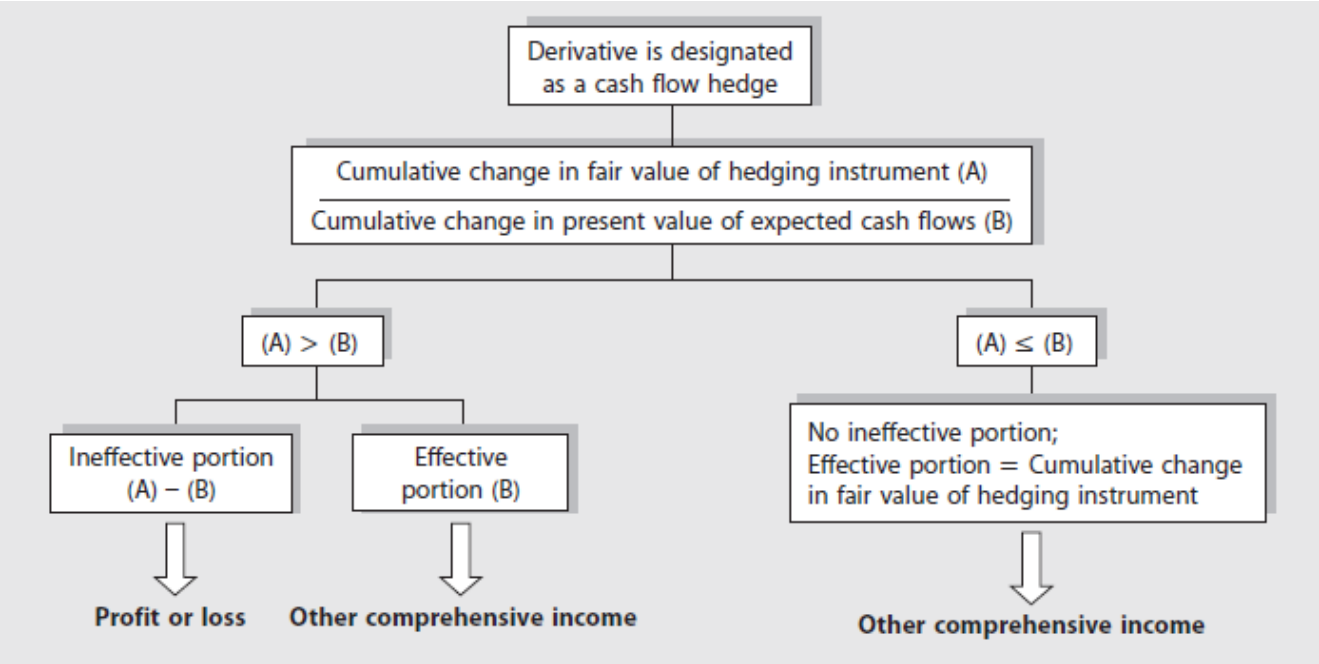


Figure 10.8 shows the procedures for determining the effective and ineffective portions (if any) in the accounting for a cash flow hedge. Over the life of the hedge, changes in the fair value of the hedging instrument are calculated on a period-to-period basis as well as cumulatively. If the time value component of the hedging instrument is excluded from the designated hedging relationship, the time value component is taken to profit or loss other comprehensive income[11], and only the intrinsic value component (if the hedging instrument is an option contract) or the spot rate component (if the hedging instrument is a forward contract) is considered as the hedging instrument. The intrinsic value (for an option contract) or the spot element (for a forward contract) is also used to measure the delta ratio in calculating hedge effectiveness. Paragraph 6.5.15 of IFRS 9 requires the time value component to be accounted for differently depending on the type of hedged item which the hedging instrument hedges (either transaction related hedged item or time period hedged item)[12]. The carrying value of the entire hedging instrument is adjusted for changes in its fair value. Likewise, the present value of the expected cash flows of the forecasted transaction is determined on a period-to-period basis and cumulatively.

page 931

At the end of each accounting period, the cumulative change in the fair value of the hedging instrument is compared with the cumulative change in the present value of the expected cash flows. If the amount of the former is less than the amount of the latter, there is no hedge ineffectiveness. The change in the fair value of the hedging instrument is taken to cash flow hedge reserve (in other comprehensive income within the equity section of the statement of financial position). However, if the cumulative change in the fair value of the hedging instrument is greater than the cumulative change in the present value of expected cash flows, the excess is considered the ineffective portion. This is logical because the main purpose of the hedge is to "cover" the loss (or gain) on the expected cash flows with the gain (or loss) on the hedging instrument and not to exceed it. The portion of the change in the fair value of the hedging instrument for the period which is deemed to be ineffective is recognized as a gain or expense in the profit or loss. The effective portion is taken to cash flow hedge reserve.

page 932

It is possible that in a particular period, the cumulative change in the fair value of the hedging instrument is greater than the cumulative change in the present value of the expected cash flows and in a subsequent period, the position is reversed. In this situation, the amount taken to cash flow hedge reserve in the subsequent period would be

greater than the change in the fair value of the hedging instrument for that period. To balance the entry, the profit or loss is debited or credited by an amount equal to the difference.

Examples of cash flow hedges include:

1. Hedge of a highly probable forecasted transaction (see Illustration 10.13);
2. Hedge of an anticipated issue of a bond (see Illustration 10.14).
3. An interest rate swap to hedge a floating rate financial asset or financial liability (see Illustration 10.15);

We will discuss also in more details the financial instruments that can be adopted to hedge against interest rate risks such as interest rate swaps.

Highly Probable Forecasted Transaction

A highly probable forecasted transaction is one that has a high probability of occurrence. In one respect, it is similar to a firm commitment in that it is a future transaction that has yet to occur. However, the fundamental difference is that in a forecasted transaction, there is no commitment to a specific price, hence, it does not entail any rights or obligations. A firm commitment, on the other hand, carries a fair value exposure because of its commitment to a specific price. If the price changes by the time the transaction takes place, there is either a gain or a loss on the fair value of the commitment. A highly probable forecasted transaction does not involve such an exposure because of the absence of a commitment to a specific price. A highly probable forecasted transaction, however, has a cash flow exposure that stems from changes in the price of the forecasted item. Depending on the price eventually received or paid, the amount of cash flow of the related revenue or purchase may differ from when the transaction is first forecasted. Thus, highly probable forecasted transactions expose an entity to a cash flow risk that will affect reported earnings. An entity can designate the highly probable forecasted purchase or sale of an asset (such as an inventory) at the market price at the date of purchase or sale as a hedged transaction because the asset (inventory) will be recorded at that future purchase or sale price.

The possibility that the highly probable forecasted transaction may be postponed, or even cancelled, cannot be ruled out. However, since it is highly probable that the transaction will take place, the entity is exposed to cash flow risk because of changes in the price of the hedged item when the transaction eventually occurs.

ILLUSTRATION 10.13 Cash flow hedge of a highly probable forecast transaction

On 30 November 20x5, Alpha Company forecast the purchase of an equipment costing FC 2,000,000 on 30 January 20x6. The purchase of the equipment is forecasted based on Alpha Company's production schedule for which production is expected to commence in March 20x6. Alpha Company's functional currency is the dollar. Alpha Company was concerned that the FC might have appreciated by the time the delivery of the equipment was made, and decided to hedge against the risk of an appreciation of the FC by entering into a two-month forward exchange contract to purchase FC 2,000,000 for delivery on 31 January 20x6. It designated the forward exchange contract as a cash flow hedge of a highly probable forecast purchase of equipment on 30 November.[13] All other hedge accounting conditions in IFRS 9 were met. The equipment was delivered on schedule. Alpha's year-end is 31 December. The following are the relevant spot and forward rates:

page 933

Date	Spot rate FC 1 =	Forward rate for 30 January 20x6 delivery
30 November 20x5	$1.70	$1.72
31 December 20x5	1.73	1.74
30 January 20x6	1.75	1.75

A discount rate of 6% per annum is applicable to the forward contract. When a firm uses a forward contract as the hedging instrument in a cash flow hedge, the measurement of hedge effectiveness can be based on either the spot rate or the forward rate. Thus, in order to ensure that the hedge meets the effectiveness criterion for hedge accounting, Alpha Company should designate the hedging relationship as:

$$\frac{\text{Change in fair value of forward contract based on the spot rate}}{\text{Change in expected cash flows based on the spot rate}}$$

The interest element (time value) in the forward contract is excluded from the designated hedging relationship. The hedging instrument is defined as the spot element of the forward contract. The hedge is likely to be highly effective because the critical terms match and changes in both the hedged cash flows and the value of the hedging instrument are based on spot rates.

The fair value of the forward contract and the spot rate and interest elements in the forward contract over the life of the contract are shown in Table 10.5.

TABLE 10.5 Fair value of forward contract and the spot and interest rate components

Date (a)	Spot rate (b) FC 1 =	Forward rate to 31 January 20x6 (c) FC 1 =	Fair value of forward contract (d) = (e) + (f)	Spot element in forward contract (e)	Interest element in forward contract (f)
30 Nov 20x5....	$1.70	$1.72			
31 Dec 20x5....	1.73	1.74	$39,801 (Note 1)	$ 59,701 (Note 2)	$(19,900) (Note 3)
30 Jan 20x6	1.75	1.75	60,000 (Note 4)	100,000	(40,000)

Note 1:

$$\frac{(|1.74 - 1.72|) \times \$2{,}000{,}000}{1 + 0.06/12}$$

Note 2:

$$\frac{(|1.73 - 1.70|) \times \$2{,}000{,}000}{1 + 0.06/12}$$

Note 3: The interest element in the forward contract can be obtained as follows:

$$\left[\left(\begin{matrix}\text{Current period}\\ \text{forward premium}\end{matrix} - \begin{matrix}\text{Contracted or previous}\\ \text{period forward premium}\end{matrix}\right) \times \text{Notional amount}\right] \div \begin{matrix}\text{Discount factor for the remaining}\\ \text{period of the contract}\end{matrix}$$

$$= \frac{(|1.74 - 1.73|) - (|1.72 - 1.70|) \times \$2{,}000{,}000}{1 + 0.06/12}$$

Alternatively, it can be derived as the difference between the fair value of the forward contract and the spot element in the forward contract: $39,801 – $59,701 = –$19,900.

Note 4: At 31 January 20x6, the fair value of the forward contract is $60,000. This is calculated as follows:

$$\begin{aligned}&(\text{Forward rate at maturity date}^{*} - \text{Contracted forward rate}) \times \text{Notional amount}\\ &= (|1.75 - 1.72|) \times \$2{,}000{,}000\\ &= \$60{,}000\end{aligned}$$

* The forward rate at maturity is equal to the spot rate as the remaining period of the forward contract is nil. This figure is not discounted since it represents the present value at the date of maturity.

The changes in the expected cash flows associated with the forecasted transaction based on spot rate and forward rate are shown in Table 10.6.

TABLE 10.6 Changes in expected cash flows of forecasted transaction based on spot rate and forward rate

Date (a)	Spot rate (b) FC 1 =	Forward rate (c) FC 1 =	Change in cumulative expected cash flow based on spot rate (d)	Present value of cumulative change in cash flow based on spot rate (e)	Cumulative change in expected cash flow based on forward rate (f)	Present value of cumulative change in cash flow based on forward rate (g)
30 November 20x5..	$1.70	$1.72				
31.12.20x5.....	1.73	1.74	$ (60,000) (Note 1)	$ (59,701) (Note 2)	$(40,000) (Note 3)	$(39,801) (Note 4)
31.1.20x6.....	1.75	1.75	(100,000) (Note 5)	(100,000) (Note 6)	(60,000) (Note 7)	(60,000)

Note 1: ($1.70 – $1.73) × 2,000,000 = –$60,000
Note 2: –$60,000/(1 + 0.06/12) (or $60,000/1.005)
Note 3: ($1.72 – $1.74) × 2,000,000 = –$40,000
Note 4: –$40,000/(1 + 0.06/12) (or –$40,000/1.005)
Note 5: ($1.70 – $1.75) × 2,000,000 = –$100,000
Note 6: –$100,000/1 (Discount rate is 1 since there is no future period remaining)
Note 7: ($1.72 – 1.75) × 2,000,000 = –$60,000

The comparison of the cumulative amounts of the hedged cash flows and the change in the fair value of the hedging instrument to determine the effective portion is summarized below.

Date	Cumulative change in fair value of derivative (based on spot rate)	Cumulative change in present value of expected cash flows (based on spot rate)	Hedge effectiveness ratio
31 December 20x5	$ 59,701	$ 59,701	1
31 January 20x6	100,000	100,000	1

The journal entries for the hedged item and hedging instrument in the forward contract for both situations are as follows:

30 Nov 20x5	No journal entry is needed. Only memorandum record as the value of forward contract is zero at inception		
31 Dec 20x5	Dr Forward contract	39,801	
	Dr OCI (interest element)	19,900	
	Cr Cash flow hedge reserve (OCI)		59,701
	To record the change (gain) in fair value of the forward contract between 30 November 20x5 and 31 December 20x5. The hedge is fully effective as the gain in the spot element of the forward contract ($59,701) is exactly offset by the loss on the expected cash flow based on the spot settlement of the forward contract ($59,701).** The gain on the effective portion is taken to other comprehensive income.*		
	The interest element is also taken to other comprehensive income as only the intrinsic value is designated as the hedging instrument.		

* Column (e) in Table 10.5.

** Column (e) in Table 10.6.

30 Jan 20x6	Dr Forward contract	20,199	
	Dr OCI (interest element)	20,100	
	Cr Cash flow hedge reserve (OCI)		40,299
	To record the change in the fair value of the forward contract between 31 December 20x5 and 30 January 20x6. The hedge is fully effective. The effective portion is taken to other comprehensive income and the interest element in the forward contract taken to other comprehensive income as only the intrinsic value is designated as the hedging instrument.		
30 Jan 20x6	Dr Equipment	3,500,000	
	Cr Cash		3,500,000
	To record the purchase of equipment for FC 2,000,000 at the exchange rate of FC 1 = $1.75		
30 Jan 20x6	Dr Cash flow hedge reserve (OCI)	100,000	
	Cr Equipment		100,000
	To record the basis adjustment of the carrying value of the equipment		

30 Jan 20x6	Dr Cash	60,000	
	Cr Forward contract		60,000
	Net settlement received from the dealer on maturity of forward contract		
30 Jan 20x6	Dr Equipment	40,000	

Cr OCI (interest element)		40,000

To record the basis adjustment of the carrying value of the equipment in respect of the interest component of the forward contract as this is a transaction related hedge

An alternative method of using forward rates for the hedging instrument are allowed by the standard. A comparison of consequence from hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging
Profit or loss effects			
Gain on forward contract	–	60,000	–
Cash flow effects			
Purchase payment	(3,500,000)	(3,500,000)	(3,500,000)
Proceeds from forward contract	60,000	60,000	–

As the forecasted transaction results in the recognition of a non-financial asset, the deferred gain is adjusted against the cost of the asset under IFRS 9 as illustrated in the accounting entries above.

HEDGING AGAINST INTEREST RATE RISK

The preceding illustrations focused on the use of derivatives to manage the foreign exchange risk and price risk of commodities and financial assets. The remaining section of this chapter illustrates the use of derivatives to manage interest rate risk and the related accounting procedures. As discussed earlier, entities that issue debt or have investments in debt instruments face interest rate risk. Interest rate risk is also faced by firms that intend to issue debt or invest in debt instruments. The types of derivatives that are commonly used to manage interest rate risk are summarized in Table 10.7.

TABLE 10.7 Types of derivatives for hedging interest rate risk

Type of interest rate derivative	Characteristics
Interest rate futures	An exchange-traded contract whereby one party agrees to deliver a given amount of the related debt security at a later date to another party. Some examples are treasury-bill futures, treasury-bond futures, and Eurodollar futures
Options on interest rate futures	A contract whereby the holder has the right but not the obligation to buy or sell the corresponding interest rate futures contract at a specified price for a specified period

Forward rate agreements	A forward contract in which two parties agree to exchange an interest rate differential between a fixed rate and a floating interest rate based on a notional principal amount at a given future date
Interest rate caps	A contract that provides protection to the holder against the interest on a floating-rate debt increasing beyond a specified maximum level
Interest rate floors	A contract that protects the holder from declines in the interest rate by making a payment to the holder when an underlying interest rate (the "index" or "reference" interest rate) falls below a specified strike rate (the "floor rate")
Interest rate collars	A contract that combines the purchase of a cap and the sale of a floor to keep the interest rate within a specific range. The contract protects the buyer against the risk of a significant rise in a floating rate, but limits the benefits of a drop in that floating rate
Interest rate swaps	A contractual agreement entered into between two counterparties under which each agrees to make periodic payments to the other for an agreed period based on a notional amount of principal

Illustration 10.14 provides an example of a cash flow hedge of a to-be-issued bond.

ILLUSTRATION 10.14 Cash flow hedge of an anticipated issue of bonds using interest rate futures contracts

On 30 June 20x1, the board of Company X approved the investment in a project that cost $150 million, which was to be financed partly by the issue of a $50 million five-year bonds in January 20x2. The interest rate for a bond similar to the proposed bond was 6% at 30 June 20x1, with semi-annual interest payments. Company X was concerned that market interest rates would rise before the bond was issued on 1 January 20x2. If interest rates went up before 1 January 20x2, the bond would have to be issued at a higher coupon rate, which translated into higher interest payments on the bond. Therefore, Company X decided to hedge the interest rate risk from the date it decided to issue the bond to the date the bonds were issued.

Company X performed historical correlation to identify the appropriate instrument that was likely to provide an effective hedge of the bond. The results showed a high correlation between five-year treasury notes and the type of bond that Company X would be issuing. If the interest rate increased, the price of treasury notes decreased; the futures contracts on treasury notes would show a gain, offsetting the higher interest payments on the bond when it was issued. At 30 June 20x1, a 31 December 20x1 five-year treasury note that carried an interest rate of 5% was selling at par (assumed to be $100). The futures exchange required a margin of $800 per contract.

page 938

Because the relationship between the market interest rate and the bond price was non-linear, Company X had to determine the number of futures contracts to effectively hedge the forecasted bond issue. This was accomplished by using a measure called *duration*, which measures the price sensitivity of a bond to interest rate movements. Duration indicates the percentage change in the price of a bond for a given change in yield.

Assume that duration calculations indicated that Company X should sell 488 five-year treasury notes futures contracts to provide an effective hedge. Each contract had a face value of $100,000.

Company X designated the futures contracts as a cash flow hedge of the future interest payments on its forecasted bond issue. Hedge effectiveness was calculated as the ratio of the cumulative change in the fair value of the futures contracts to the cumulative change in the present value of changes in the expected interest payments on the bond attributable to changes in market interest rates. Assume that all other conditions for hedge accounting are met. The short positions would be closed in January 20x2 when the bonds were issued.

As expected, from 30 June 20x1 to 31 December 20x1, the market interest rate increased. The following table shows the yield on five-year treasury notes and the forecasted interest rate on the to-be-issued bond.

Date	Yield on 5-year treasury notes	Forecasted interest on to-be-issued bond
30 June 20x1	5.0%	6%
30 September 20x1	5.5%	6.5%
31 December 20x1	6.0%	7%

As a result of the increase in interest rates, the price of interest rate futures on five-year treasury notes decreased.

Date	Price of futures contract	Total value of 488 futures contracts	Cumulative gain on futures contract
30 June 20x1	$100,000	$48,800,000	
30 September 20x1	97,906	47,778,128	$1,021,872
31 December 20x1	95,875	46,787,000	2,013,000

The changes in the expected interest payments are calculated as follows:

Date	Forecasted borrowing rate	Expected interest payment	Cumulative change in semi-annual interest payment	PV of change in interest payment at 6% per annum
30 June 20x1	6%	$1,500,000		
30 September 20x1	6.50%	1,625,000	$125,000	$1,066,275[a]
31 December 20x1	7.00%	1,750,000	250,000	2,132,551[b]

[a] Ten semi-annual payments of $125,000 discounted at the effective interest rate of 6% (3% semi-annually) at the inception of the hedge.

[b] Ten semi-annual payments of $250,000 discounted at 6% (3% semi-annually).

The ratio of the cumulative change in the fair value of the futures contracts to the cumulative change in the present value of the change in interest payment as at 30 September and 31 December 20x1 is within the effectiveness range of 0.80 to 1.25 as shown in the following table.

Date	Cumulative change in fair value of futures contract	Cumulative change in present value of expected interest payments	Hedge effectiveness ratio
30 September 20x1	$1,021,872	$1,066,275	0.958
31 December 20x1	2,013,000	2,132,551	0.944

The accounting entries for the cash flow hedge are as follows:

30 Jun 20x1	Dr Margin deposit	390,400	
	Cr Cash		390,400
	To record the margin deposit of $800 per contract on 488 contracts		

30 Sep 20x1	Dr Futures contract	1,021,872	
	Cr Hedging reserve (OCI)		1,021,872
	To record the gain on futures contract that is taken to equity		
	Note: There is no ineffective portion in the hedge as the delta ratio is less than 1. Changes in the margin deposit are ignored.		
31 Dec 20x1	Dr Futures contract	991,128	
	Cr Hedging reserve (OCI)		991,128
	To record the gain on futures contract that is taken to equity		
	Note: There is no ineffective portion in the hedge as the cumulative change in the hedging instrument is less than the cumulative change in the present value of expected cash flows		
31 Dec 20x1	Dr Cash	2,403,400	
	Cr Margin deposit		390,400
	Cr Futures contract		2,013,000
	To record the refund of margin deposit and the closing off of the futures position		

The deferred gain taken to hedging reserve (equity) will be recycled to profit or loss over the life of the bond using the effective interest method.

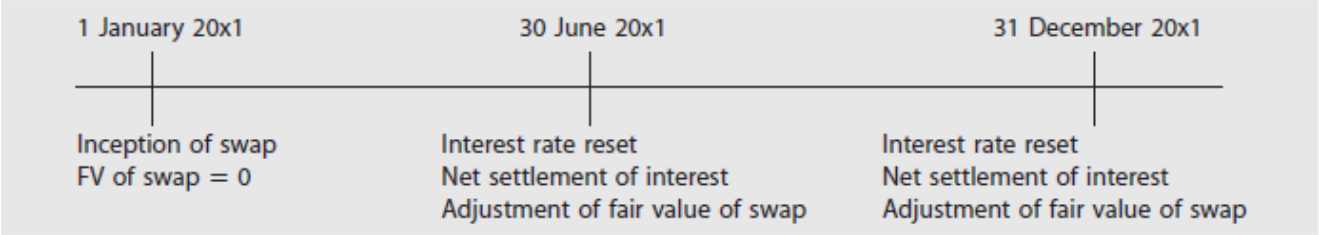
A comparison of consequence of hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging
Profit or loss effects			
Gain on futures contract	–	2,013,000	–
Cash flow effects			
Proceeds from futures contract	2,013,000	2,013,000	–

Interest Rate Swaps

An *interest rate swap* is an agreement between two counterparties to exchange interest payments based on a notional amount and agreed upon interest rates. The most common variety, known as a *plain vanilla swap*, involves the exchange of floating rate interest[14] payments for fixed rate interest payments based on a notional amount in the same currency. Although there is no exchange of the principal amount, a notional amount of the principal is required in order to compute the actual cash amounts that will be periodically exchanged. The cash flows to be exchanged under an interest rate swap on each settlement date are typically "netted" (or offset), so what is paid or received is the difference between the fixed and floating rates of interest on the notional amount (see the timeline below). Because of

the periodic net settlements, an interest rate swap is in essence a series of forward contracts on interest rates. It is important to note that in the case of a forward contract, the exchange of payment flows provides a complete settlement of the contract at maturity. In contrast, the periodic exchanges of payment flows under an interest rate swap provides only a partial periodic settlement of the contract; the fair value of the swap does not reduce to zero until at the end of the swap contract.



An entity that wishes to enter into a swap typically faces two problems. The first problem is to find a counterparty with opposite matching requirements. For example, a firm with a floating rate debt that wishes to pay a fixed interest rate will have to find a counterparty willing to pay a floating rate interest and receive a fixed rate interest based on a common notional amount. The second problem is that even if such a counterparty be found, there is still the issue of counterparty risk, that is, whether the counterparty will fulfil its obligations. This is where a financial intermediary or a swap dealer comes in. The swap dealer assumes the counterparty risk and at the same time seeks out a counterparty with opposite matching requirements. In return, the counterparty charges a commission or "spread."

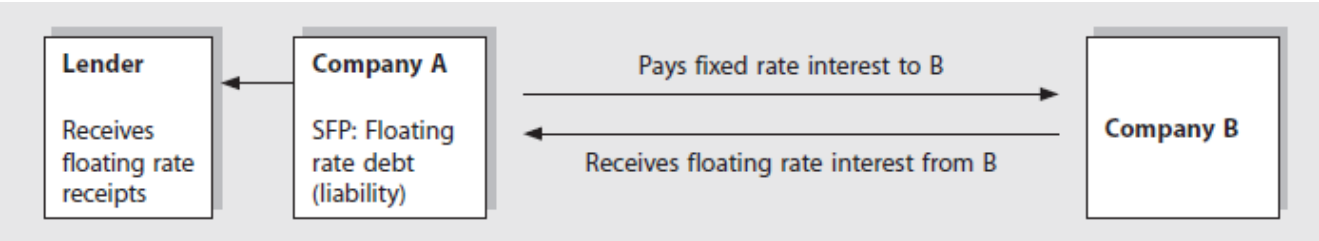
Interest rate swaps are used extensively by commercial and investment banks, insurance companies, non-financial entities, investment trusts, and governments for one or more of the following reasons:

1. To hedge interest rate exposure;
2. To obtain lower cost of funding;
3. As part of an entity's asset or liability management strategies; and
4. To gain by speculating on interest rate movements.

Using Swaps for Hedging

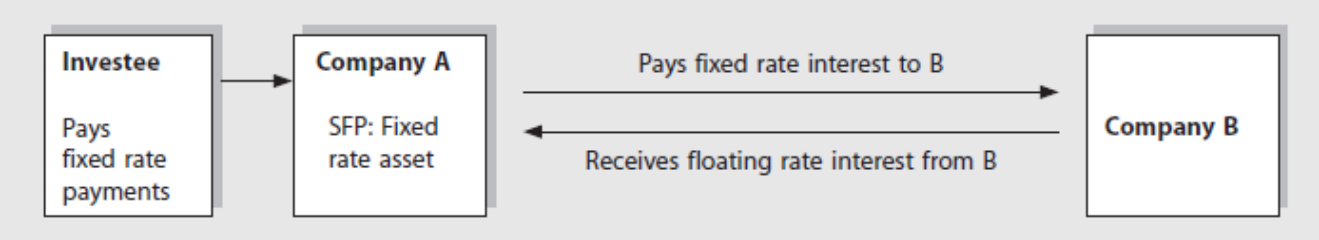
Swaps are commonly used to manage two types of interest rate risk — cash flow risk and price risk. These two types of risks are explained under two different situations labeled Scenario 1 and Scenario 2 as follows:

Scenario 1: Company A has a floating rate debt but wishes to pay a fixed interest rate. It swaps interest rate flows with Company B (who may be a financial intermediary). The swap is a cash flow hedge as it transforms future variable cash outflows, into fixed cash outflows thereby removing the uncertainty of future cash flows. Effectively, the swap creates what is called a "synthetic fixed rate" debt. It is important to note that Company A still has a floating rate debt in its books, but it ends up paying a fixed rate interest because of the creation of the synthetic instrument.



Scenario 2: Company A has a fixed rate investment (classified as FVOCI). The hedge portrayed in Scenario 2 is a fair value hedge. A fixed rate asset or debt is exposed to changes in fair value. When interest rates rise, the fair value of the fixed rate asset or debt declines and vice versa. In periods of volatile interest rates, this results in volatile earnings. This volatility is avoided as a result of the swap as it has effectively changed the fixed rate asset to a "synthetic" floating rate asset. Changes in the fair value of the fixed rate asset (which still remains in Company A's books) are offset by changes in the fair value of the swap asset or liability. Note the following:

1. A swap (assuming it is effective as a hedge) is a cash flow hedge if the hedged item is a floating rate asset or liability.
2. A swap (assuming it is effective as a hedge) is a fair value hedge if the hedged item is a fixed rate asset or liability.



Determining the Fair Value of a Swap

The estimation of the fair value of a swap contract requires the computation of the present value of the net payment or receipt for each future period and aggregating the present values for all the periods. The discount rate is the forward interest rate, which is the expected future interest rate for each future period. What makes the estimation of the fair value of a swap complex is that interest rates change at each settlement period. To simplify the estimation, the market yield curve, which relates interest rates to the time to maturity, can be used to estimate the interest rate for each period. Still, the computations can be quite complex if the yield curve is upward sloping or downward sloping (also known as an "inverted yield curve"). An upward sloping yield curve implies that long-term interest rates are higher than short-term interest rates while an inverted yield curve implies the opposite. The easiest method to estimate the fair value of a swap is to assume a flat yield curve, which implies a constant forward interest rate for the future periods.[15] If a swap is based on LIBOR (London Interbank Offer Rate), its fair value can be obtained from the International Swap Dealers Association, which provides a standardized swap contract with standardized pricing for swaps with varying maturities.

Another point to note is that at inception, the fair value of the swap is zero.[16] As discussed earlier, an interest rate swap involves the exchange of fixed rate and floating rate streams of payments between two parties. At inception, the present value of the net difference between the fixed rate stream of payments and the floating rate stream of payments must be zero. Otherwise, one party will make a gain and the other party a loss at inception. Alternatively, the swap can be viewed as a combination of fixed and floating rate loans except that there is no initial borrowing and no subsequent repayment of the principal. The net present value of the fixed rate loan and the floating rate loan at inception must be zero or one party will gain simply by borrowing. However, after the inception date, with the passage of time, the fair value of the swap will be either positive or negative because the shape of the yield curve used to price the swap initially will change over time. On settlement/maturity date, the fair value of the swap is zero.

Short-cut Method for Accounting for Swap Hedges

Determining hedge effectiveness for interest rate swaps can be a highly complex process. The Financial Accounting Standards Board (FASB) allows a "short-cut"[17] method whereby the assumption of a perfect hedge (no hedge ineffectiveness) can be made if certain conditions are met. These conditions include matching of the notional amount

of the swap with the principal amount of the interest-bearing asset or liability, zero fair value of the swap at inception, no prepayment on the interest-bearing asset or liability and matching of the index interest rate with the interest rate of the hedged item for a variable interest rate asset or liability. IAS 39 and IFRS 9, however, do not have such provisions.

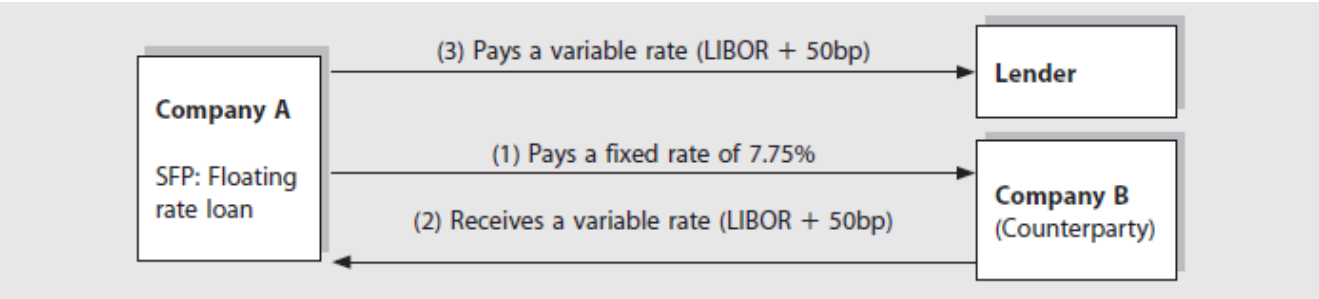
For the purpose of illustrating the accounting treatment of interest rate swaps, Illustrations 10.15 and 10.16 will adopt the FASB's "short-cut" method and assume that the fair value of an interest rate swap is determined based on a flat yield curve. While this assumption is admittedly not realistic as the yield curve is normally upward sloping, it has the advantage of simplifying the illustrations enabling us to focus on the accounting treatment without getting involved in complicated computations.

ILLUSTRATION 10.15 Hedge of interest rate risk using a swap (cash flow hedge)

Company A has a floating rate loan of $10 million, with interest payable at LIBOR + 50 basis points. Company A entered into a contract with Firm B on 30 June 20x5 to swap interest payments. Under this arrangement, Company A paid interest at a fixed rate of 7.75% per annum on a notional principal of $10 million to Company B over a one-year period in exchange for the receipt of a floating rate interest based on LIBOR + 50 basis points. Interest settlements were made at the end of each quarter. The year-end is 31 December. Floating rate payment was "reset" by using LIBOR at the beginning of each quarter. The rates are as follows:

30 June 20x5	7.25%
30 September 20x5	6.25%
31 December 20x5	7.45%
31 March 20x6	7.50%

The sequence of exchanges is as follows:



Assumptions:

1. Fair value of swap at inception is zero.
2. Fair value of swap at the end of each subsequent period:
   a. Current floating rate continues to prevail till the end of the swap tenure (flat yield curve assumption).
   b. Next immediate net receipt/(payment) applies to future periods.

The schedule of interest rate payments and net settlement is given in Table 10.8A.

TABLE 10.8A Schedule of interest payments and net settlement

TABLE 10.8A Schedule of interest payments and net settlement

Quarter ended	Floating rate (LIBOR + 50bp) as at this date	Floating rate receipt (based on previous LIBOR)	Fixed rate payments at 7.75% to swap counterparty	Current net receipt/ (payment)	Fair value of swap asset/ (liability)	Change in fair value
Start of swap:						
30 June 20x5	7.75%				0	
30 September 20x5	6.75%	$193,750	$193,750	0	$(72,538)	$(72,538)
31 December 20x5	7.95%	168,750	193,750	$(25,000)	9,710	82,248
31 March 20x6	8.00%	198,750	193,750	5,000	6,127	(3,583)
30 June 20x6		200,000	193,750	6,250	0	(6,127)

Notes:

1. At inception date (30 June 20x5), LIBOR is 7.25%; this rate (plus 50 basis points) is used to calculate the floating rate receipt for the quarter ending 30 September 20x5. The fixed rate payment is 7.75%. Thus, for the quarter ending 30 September 20x5, the floating rate payment is $193,750, and the fixed rate receipt is also $193,750. Thus, the net receipt or payment at 30 September 20x5 is nil. Under the flat yield curve assumption, this is assumed to apply for the four quarters of the swap tenure. Therefore, the estimated fair value of the swap at 30 June 20x5 is nil.
2. At the end of the first quarter (30 September 20x5), LIBOR has fallen to 6.25%, and the floating rate receipt for the next quarter ending 31 December 20x5 is $168,750 ($10,000,000 × 0.0675 × ¼). The fixed rate payment is $193,750, resulting in an expected net payment of $25,000 on 31 December 20x5. It is assumed that the expected net payment will hold for the next three quarters. Using a discount rate of 6.75%, the present value is –$72,538. This is the estimated fair value of the swap at 30 September 20x5. Since the estimated fair value is negative, it is a swap liability in the statement of financial position.
3. At the end of the second quarter (31 December 20x5), LIBOR rises again to 7.45%. The floating rate receipt for the next quarter ending 31 March 20x6 is $198,750. Since the fixed rate payment is $193,750, there is a net receipt of $5,000 on 31 March 20x6. It is assumed that this net receipt will apply for the quarters ending 31 March 20x6 and 30 June 20x6. The aggregate present value of the net receipts for these two quarters is $9,710. The fair value of the swap has turned from negative (swap liability) to positive (swap asset).
4. The process is repeated for the third quarter.

The journal entries are as follows:

	30 September 20x5		31 December 20x5		31 March 20x6		30 June 20x6	
Dr Interest expense	193,750		168,750		198,750		200,000	
Cr Bank.....		193,750		168,750		198,750		200,000
Payment for interest on floating rate loan								
Dr Interest expense			25,000					
Cr Bank				25,000				
Being settlement of swap differential								
Dr Bank.....					5,000		6,250	
Cr Interest expense						5,000		6,250
Being receipt of swap differential								
Dr Fair value adjustment (OCI).....	72,538				3,583		6,127	
Cr Interest rate swap liability/asset (SFP) ..		72,538				3,583		6,127
Fair value unfavorable adjustment								
Dr Interest rate swap asset/liability (SFP)....			82,248					
Cr Fair value adjustment (OCI)				82,248				
Fair value favorable adjustment								

page 945

An extract of the income statement is shown below:

	30 September 20x5	31 December 20x5	31 March 20x6	30 June 20x6
Interest expense	193,750	193,750	193,750	193,750

Below is an extract from the statement of financial position:

	30 September 20x5	31 December 20x5	31 March 20x6	30 June 20x6
Equity – fair value adjustment accumulated gains/(losses)	(72,538)	9,710	6,127	
Swap asset/(liability)	(72,538)	9,710	6,127	

A comparison of consequence of hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging
Profit or loss effects			
Fair value gain/loss on swap (20x5)	–	9,710	–
Interest expense on bank loan (20x5)	(362,500)	(362,500)	(362,500)
Interest expense on swap (20x5)	(25,000)	(25,000)	–
Net profit or loss	(387,500)	(377,790)	(362,500)
Cash flow effects			
Interest expense on bank loan	(362,500)	(362,500)	(362,500)
Interest expense on swap	(25,000)	(25,000)	–

Alternatively, Company A can pass the following set of accounting entries which demonstrates the recycling of the effective portion of the cash flow hedge to the profit or loss in the same period when the hedged cashflows affect the profit or loss. Note in this case, Company A will have to compute the "dirty" fair value of the swap. The dirty value is the fair value of the swap that includes the net cash flow settled at the end of the year. The fair value calculated in Table 10.8A is the "clean" fair value of the swap which excludes the net cash flow settled at the end of the year. Table 10.8B shows the calculation.

TABLE 10.8B Calculation of dirty fair value and clean fair value of swap

Fair value of Swap	30 Sep 20x5	31 Dec 20x5	31 Mar 20x6	30 Jun 20x6
Beginning fair value of swap	–	(72,538)	9,710	6,127
Movement during the year	(72,538)	57,248	1,417	123
"Dirty" fair value of swap	(72,538)	(15,290)	11,127	6,250
Net cash flow paid/(received)	–	25,000	(5,000)	(6,250)
"Clean" fair value of swap	(72,538)	9,710	6,127	–

Hence, the accounting entries passed are as follows:

	30 September 20x5		31 December 20x5		31 March 20x6		30 June 20x6	
Dr Interest expense	193,750		168,750		198,750		200,000	
Cr Bank.....		193,750		168,750		198,750		200,000
Payment for interest on floating rate loan								
Dr Swap			25,000					
Cr Bank				25,000				
settlement of swap differential								
Dr Cash					5,000		6,250	
Cr Swap						5,000		6,250
Settlement of swap differential								
Dr Cash flow hedge reserve (OCI).....	72,538							
Cr Swap		72,538						
Being fair value of swap recognized								
Dr Swap			57,248		1,417		123	
Cr Cash flow hedge reserve (OCI)).....				57,248		1,417		123
Being dirty fair value of swap recognized in OCI								
Dr Interest expense			25,000					
Cr Cash flow hedge reserve (OCI).....				25,000				
Being effective portion of cash flow hedge reclassified to profit or loss								
Dr Cash flow hedge reserve (OCI).....					5,000		6,250	
Cr Interest expense						5,000		6,250
Being effective portion of cash flow hedge reclassified to profit or loss								

ILLUSTRATION 10.16 Hedge of a fixed interest notes payable (a fair value hedge)

On 1 January 20x1, Alpha Company borrowed a $20,000,000 loan from a bank at a fixed rate of 10% per annum with interest due on a semi-annual basis. The loan was for a period of two years. Anticipating that interest rates were likely to decline and wishing to change its obligations to a floating rate basis, Alpha Company entered into a swap to receive a fixed rate of 10% per annum in return for the payment of a variable LIBOR. Differences between the fixed and variable rates were to be settled by a semi-annual payment. The notional amount of the swap

page 947

was $20,000,000. The swap was settled, and the variable rate was reset for the following semi-annual interest payment based on the beginning LIBOR. Relevant rates are as follows:

Date	LIBOR as at this date used for subsequent half-year payment
1 January 20x1	10.0% per annum
30 June 20x1	9.5% per annum
31 December 20x1	9.0% per annum
30 June 20x2	8.8% per annum

Notes:

1. At the inception of the swap agreement, the fair value of the swap contract was zero.
2. Flat yield curve assumptions hold.
3. Other risks such as credit risk which affect the fair value of the swap remains constant.
4. The loan was for two years and matured on 31 December 20x2. Therefore, the swap did not exist after that point in time; the fair value of the swap agreement reached zero at the end of the term of the agreement.

The schedule of interest and swap payments is given in Table 10.9.

TABLE 10.9 Schedule of interest and swap payments

Period half-year ended	Floating rate LIBOR as at this date	Floating rate payment (based on previous LIBOR)	Fixed rate receipts at 10% per annum	Current net receipt/ (payment)	Fair value of swap asset/ (liability)	Change in fair value: gain/(loss)
Start of swap:						
1 January 20x1	10.0%				0	
30 June 20x1	9.5%	$1,000,000	$1,000,000	$ 0	$136,803	$ 136,803
31 December 20x1	9.0%	950,000	1,000,000	50,000	187,267	50,464
30 June 20x2	8.8%	900,000	1,000,000	100,000	114,943	(72,324)
31 December 20x2		880,000	1,000,000	120,000	0	(114,943)

The journal entries are as follows:

1 Jan 20x1	Dr Cash	20,000,000	
	Cr Loan payable		20,000,000
	Inception of loan		
30 Jun 20x1	Dr Interest expense	1,000,000	
	Cr Cash		1,000,000
	Interest expense on fixed rate loan		
30 Jun 20x1	Dr Interest rate swap asset	136,803	
	Cr Unrealized gain on swap (P/L)		136,803

Change in the value of the swap

30 Jun 20x1	Dr Unrealized loss on loan (P/L)	136,803	
	Cr Loan payable		136,803
	Change in the value of debt attributable to the change in interest rate		
31 Dec 20x1	Dr Interest expense	1,000,000	
	Cr Cash		1,000,000
	Interest expense on fixed rate loan		
31 Dec 20x1	Dr Cash	50,000	
	Cr Interest expense		50,000
	Receipt of interest rate difference on swap: 9.5% vs 10% on $20,000,000 × ½ year		
31 Dec 20x1	Dr Interest rate swap asset	50,464	
	Cr Unrealized gain on swap (P/L)		50,464
	Change in the value of the swap		
31 Dec 20x1	Dr Unrealized loss on loan (P/L)	50,464	
	Cr Loan payable		50,464
	Change in the value of debt attributable to the change in interest rate		
30 Jun 20x2	Dr Interest expense	1,000,000	
	Cr Cash		1,000,000
	Interest expense on fixed rate loan		
30 Jun 20x2	Dr Cash	100,000	
	Cr Interest expense		100,000
	Receipt of interest rate difference on swap: 9% vs 10% on $20,000,000 × ½ year		
	Dr Unrealized loss on swap (P/L)	72,324	
	Cr Interest rate swap asset		72,324
	Change in the value of the swap		
30 Jun 20x2	Dr Loan payable	72,324	
	Cr Unrealized gain on loan (P/L)		72,324
	Change in the value of debt attributable to the change in interest rate		

31 Dec 20x2	Dr Interest expense	1,000,000	
	Cr Cash		1,000,000
	Interest expense on fixed rate loan		
31 Dec 20x2	Dr Cash	120,000	
	Cr Interest expense		120,000
	Receipt of interest rate difference on swap: 8.8% vs 10% on $20,000,000 × ½ year		

31 Dec 20x2	Dr Unrealized loss on swap ((P/L))	114,943	
	Cr Interest rate swap asset		114,943
	Write down swap value to zero at the end of contract		
31 Dec 20x2	Dr Loan payable	114,943	
	Cr Unrealized gain on loan (P/L)		114,943
	Change in the value of debt attributable to the change in interest rate		
31 Dec 20x2	Dr Loan payable	20,000,000	
	Cr Cash		20,000,000
	Repayment of loan		

Notes:

1. Even though the debt is carried at cost, the carrying value of the debt is adjusted by an amount equal to the change in the fair value of the debt directly attributable to the change in LIBOR (the benchmark interest rate).
2. The adjustment to the carrying value of the debt effectively represents a premium or discount on the debt. There is no need to amortize the premium or discount as long as the hedge is in place.

A comparison of consequence from hedging and apply hedge accounting, hedging and not apply hedge accounting and no hedging is as follows.

Accounts	Hedging and Apply Hedge Accounting	Hedging and Not Apply Hedge Accounting	No Hedging
Profit or loss effects			
Unrealized loss on loan (20x1)	(187,267)	–	–
Fair value gain on swap (20x1)	187,267	187,267	–
Interest expense on bank loan (20x1)	(2,000,000)	(2,000,000)	(2,000,000)
Interest income on swap (20x1)	50,000	50,000	–
Cash flow effects			
Interest expense on bank loan (20x1)	(2,000,000)	(2,000,000)	(2,000,000)

Interest income on swap (20x1)	50,000	50,000	–

An interesting point to note is that fair value exposures and cash flow exposures are mutually exclusive in interest rate swaps. In other words, the swap reduces one exposure but generally increases the other exposure. For example, a pay-fixed-receive-floating swap (a cash flow hedge of a variable rate loan) results in fixed interest receipts (or expenses), transforming the variable rate loan to a fixed rate loan, thereby eliminating the exposure to risk of a change in cash flows. However, it creates an exposure to the risk of a change in the fair value of the swap. The net cash flows on the loan and the swap will not change (or at most change minimally) with market rates of interest, but the combined fair value of the loan and the swap will change. Additionally, since cash flows are a major factor in determining fair value, the changes in the fair value of an asset or liability are inseparable from its expected cash flows.

page 950

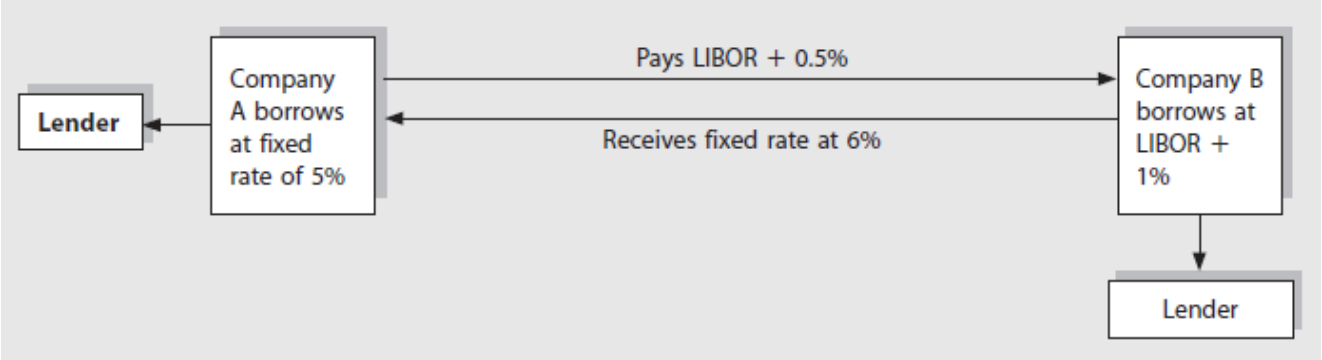
Using Swaps to Reduce the Cost of Borrowing

While swaps are widely used to manage interest risk or currency risk or both, they can also be used to reduce financing costs by exploiting the different comparative advantage of borrowers in different capital markets. Consider two companies with different credit ratings. Both companies can borrow at fixed and floating rates but on different terms.

Borrower	Can borrow at fixed rate	Can borrow at floating rate
Company A	5%	LIBOR + 0.5%
Company B	7%	LIBOR +1%
Difference:	2%	0.5%

Company A has an absolute advantage in fixed rate and floating rate borrowings. However, Company A's advantage is greater for fixed rate borrowing than for floating rate borrowing. Company A is said to have a comparative advantage in fixed rate borrowing. Company B has a comparative advantage in floating rate borrowing. The difference in the cost of fixed rate borrowing between the two companies is 2% while the difference in floating rate borrowing is 0.5%. The net difference is 1.5%. Both parties can enjoy a total savings of 1.5% if they enter into a swap arrangement. However, the sharing of the gain depends on the bargaining power of the two companies. It is clear from the situation depicted, since Company A has absolute advantage in both types of borrowing, its bargaining power should be greater than that of Company B. Company A will probably enjoy a greater share of the savings.

Assume that Company A prefers to borrow at a floating rate, and Company B prefers to borrow at a fixed rate. Because Company A has a comparative advantage in fixed rate borrowing, it borrows at a fixed rate. Similarly, Company B borrows at a floating rate where it has a comparative advantage. The two parties then enter into a swap whereby Company A makes floating rate payments to Company B and receives fixed rate payments from the latter. The swap should result in Company A paying a floating rate at LIBOR + less than 0.5% and Company B paying a fixed rate at less than 7%. For example, assume that the terms of the swap provide for Company A paying LIBOR + 0.5% to Company B and receiving a fixed rate at 6% from Company B, which borrows at LIBOR + 1%.



As can be seen from the table below, both counterparties benefit from the swap in terms of lower borrowing costs.

	Company A	Company B
Originally pays	Fixed 5%	LIBOR + 1%
Under swap:		
Pays	LIBOR + 0.5%	Fixed 6%
Receives	Fixed 6%	LIBOR + 0.5%
Net result	Pays LIBOR – 0.5%	Pays fixed 6.5%
Gain	1%	0.5%

HEDGE OF A NET INVESTMENT IN A FOREIGN ENTITY

The hedge of a net investment in a foreign entity applies to foreign operations (foreign subsidiaries and associated companies) whose functional currencies are the currencies of the country where the foreign operations are located. The translation method is the closing rate method, with the translation difference taken to other comprehensive income. If the foreign operations operate in countries with depreciating currencies, the cumulative translation differences can result in significant translation losses, and adversely affect the group's equity position. Thus, entities with foreign operations in such countries may find it necessary to hedge the foreign exchange risk.

It is important to note that the hedge of a net investment in a foreign entity is a hedge of foreign exchange rate risk and not a hedge of changes in the value of the investment. Therefore, it cannot be a fair value hedge. Since the translation difference arising from the changes in exchange rates is taken to equity, the hedging gain or loss should also be taken to equity so as to offset the translation difference. Additionally, if the hedging instrument is a derivative that has a time value component, this component may be excluded from the hedging relationship and taken to profit or loss. The hedge effectiveness (delta) ratio is calculated as follows:

$$\frac{\text{Cumulative change in fair value of hedging instrument (A)}}{\text{Cumulative translation difference on net investment (B)}}$$

There is an ineffective portion if (A) is greater than (B). The change in the fair value of the hedging instrument should be split into an effective and ineffective portion (if any), with the effective portion taken to other comprehensive income and the ineffective portion to the profit or loss. Thus, the accounting treatment of a hedge of a net investment in a foreign operation is similar to that of a cash flow hedge. The effective hedging gain or loss from

the hedging instrument, together with the translation adjustments, is reclassified from foreign currency translation reserve in other comprehensive income to the profit or loss when the investment in the foreign operation is disposed of. The IFRS states that this accounting treatment is also extended to hedges of monetary items that are accounted for as net investment in the foreign operation as set out in IAS 21. Illustration 10.17 demonstrates the accounting treatment.

ILLUSTRATION 10.17 Hedge of a net investment in a foreign entity

Four Seas Corporation, whose functional currency is the dollar, acquired a 100% interest in Locom Inc, a foreign company, several years ago. Locom's functional currency is the FC. As at 31 December 20x3, Locom's share capital was FC 1,000,000 and retained earnings FC 200,000. The exchange rate on 31 December 20x3 was $1.85 to FC 1. On the same date, Four Seas Corporation decided to hedge its investment in Locom by taking a loan of FC 1,200,000 at 5% interest. For the year ended 31 December 20x4, Locom Inc reported a net profit of FC 380,000. No dividend had been paid. The exchange rate at 31 December 20x4 was $1.70 to FC 1; the average exchange rate for the year was $1.78 to FC 1. Assume that the foreign currency translation reserves in the group accounts as at 31 December 20x3 showed a credit balance of $15,000.

page 952

The translation difference in Locom Inc's translated financial statements for the year ended 31 December 20x4 is as follows:

On net assets at 1 January 20x4 [FC 1,200,000 × $(1.70 – 1.85)]	$(180,000)
On net profit for 20x4 [FC 380,000 × $(1.70 – 1.78)	(30,400)
Translation loss for 20x4	$(210,400)

The foreign currency translation reserves as at 31 December 20x4 showed a debit balance of $195,400 ($210,400 – $15,000). In Four Seas Corporation's books, the following entries would have been recorded:

31 Dec 20x3	Dr Cash	2,220,000	
	Cr Loan payable		2,220,000
	The loan payable is designated as a hedge of the net investment: FC 1,200,000 × spot rate of $1.85		
31 Dec 20x4	Dr Interest expense	106,800	
	Cr Accrued interest		106,800
	Interest expense during the year at 5% × FC 1,200,000 × $1.78		
31 Dec 20x4	Dr Accrued interest	106,800	
	Cr Cash		102,000
	Cr Exchange gain		4,800
	Settlement of accrued interest at year-end		
31 Dec 20x4	Dr Loan payable	180,000	
	Cr Foreign currency translation reserves		180,000
	Exchange gain on FC loan taken directly to equity: FC 1,200,000 × ($1.70 – $1.85)		

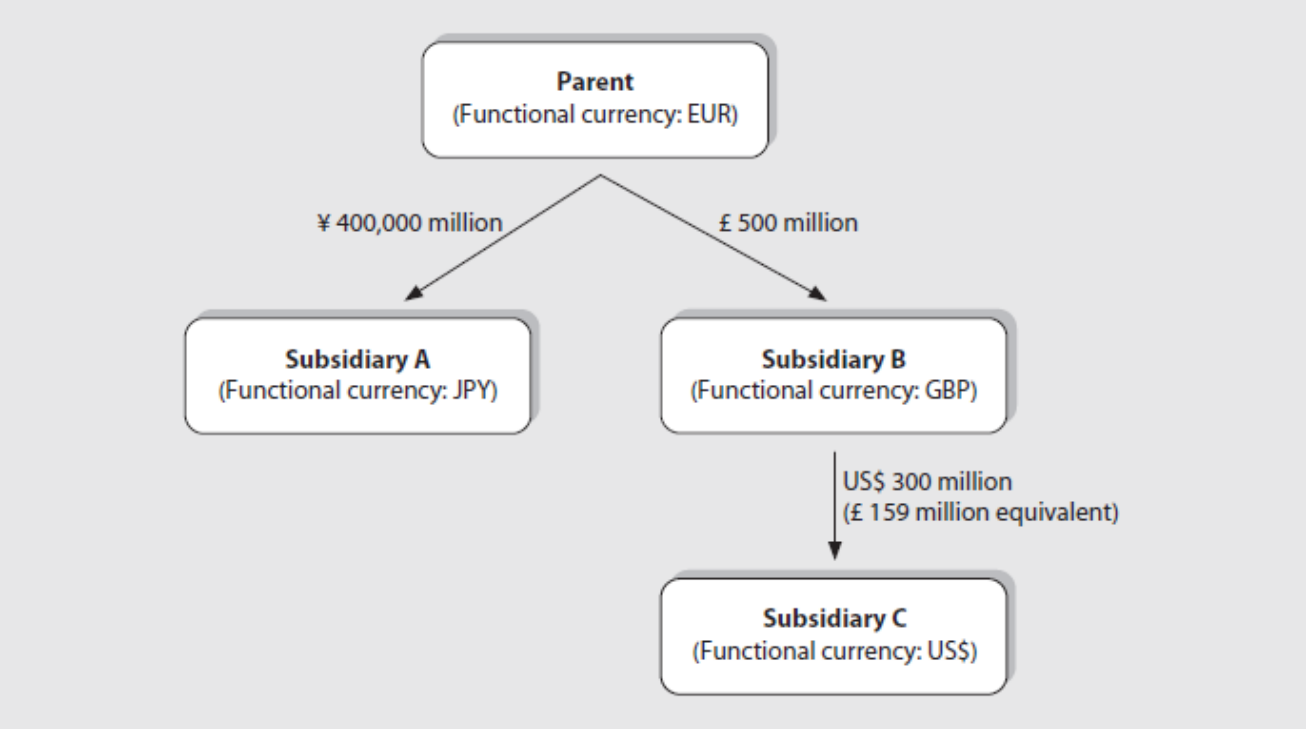
The amount hedged is the net investment at the end of 20x3.

Notes:

1. Under IAS 21, the foreign currency loan, being a monetary item, will be remeasured using the closing rate at reporting date and the exchange gain taken to the income statement. However, with the application of hedge accounting, the exchange gain is taken to equity to offset the translation loss.
2. There is no ineffective portion on the hedging instrument, since it is a non-derivative that does not have a time value component.

In the case of complex group structures, IFRIC 16 *Hedges of a Net investment in a Foreign Operation* provides additional guidance on how hedge accounting on the net investment in foreign operations can be achieved. The principles in IFRIC 16 can be best explained using a scenario that is adapted from the illustrative example in IFRIC 16.

ILLUSTRATION 10.18 Hedge of net investment in foreign operations



Background information

Parent who is the ultimate parent entity has three wholly owned subsidiaries. The functional currency of Parent is Euro (€) and it presents consolidated financial statements in Singapore Dollars (S$). The functional currency of subsidiary A, B and C are Japanese Yen (¥), Pounds (£) and US dollars (US$) respectively. Subsidiary B's net investment in Subsidiary C amounted to US$300 million (which is equivalent to £159 million). Parent's net investment

in Subsidiary B of £500 million includes Subsidiary B's net investment in Subsidiary C of £159 million. In other words, Subsidiary B's net assets other than its investment in Subsidiary C is £341 million.

Parent's net investment in Subsidiary A amounted to ¥ 400,000 million. Included in Subsidiary A's net assets of ¥ 400,000 million is an external bank loan undertaken by Subsidiary A of US$300 million.

It is assumed that the other hedge effectiveness requirements are met.

IFRIC 16 addresses three main issues on hedges of net investment in foreign operations.

Issue 1: **Whether Parent entity may (a) designate only the foreign currency exposure arising from the difference between the functional currencies of Parent entity (€) and its foreign operations (Subsidiary A – ¥, Subsidiary B – £ and Subsidiary C – US$) as the hedged risk or (b) whether Parent can also designate the foreign currency exposure arising from the difference between the presentation currency of Parent's consolidated financial statements (S$) and the functional currencies of the foreign operations?**

IFRIC 16 concludes that the Parent entity can apply hedge accounting only in situation (a) but not (b). In other words, hedge accounting can be applied only to the foreign exchange difference arising between the functional currency of the parent and the functional currencies of its foreign operations. Hence, applying to the example above, Parent can designate as a hedge risk, the foreign exchange differences between Subsidiary A, B and C's respective functional currencies of ¥, £ and US$ and €.

page 954

In addition, Parent can also hedge the foreign currency exposure between Subsidiary B functional currency of £ and Subsidiary C's functional currency of US$ as a hedged risk in its consolidated financial statements.

Issue 2: **Is a qualifying hedge relationship established only when the entity hedging its net investment is a party to the hedging instrument or whether any entity in the group can hold the hedging instrument regardless of its functional currency?**

IFRIC 16 concludes that any entity or entities within the group can hold the hedging instrument provided that the designation, documentation and hedge effectiveness requirement in IFRS 9 are met.

If Parent entity wishes to hedge the foreign exchange risk pertaining to its net investment in Subsidiary C of US$300 million in its consolidated financial statements, it can designate the US$300 million loan held by Subsidiary A as a hedging instrument. Assuming that the other requirements in hedge effectiveness is met, the exchange differences is accounted for as follows:

- The €/US$ foreign exchange rate change on the US$300 million net investment in Subsidiary C will be recognized in the foreign currency translation reserve in Parent's consolidated financial statements;
- The €/US$ foreign exchange rate change on the US$300 million external bank loan will be recognized in the foreign currency translation reserve in Parent's consolidated financial statements.

Issue 3: **How should the amounts to be reclassified from the parent's foreign currency translation reserve in the consolidated financial statements to profit or loss in respect of the hedging instrument and hedged item (i.e. the foreign operation) be determined when the foreign operation is disposed?**

In respect of the hedging instrument, IFRIC 16 concludes that the amount to be reclassified from the foreign currency translation reserve to the profit or loss in the parent's consolidated financial statement is the cumulative gain or loss on the hedging instrument that was determined to be an effective hedge in accordance with IFRS 9.

For the net investment in the foreign operation that was disposed, the amount to be reclassified from the foreign currency translation reserve is based on the amount that was included in the parent's consolidated financial statements in accordance with the requirements in IAS 21.

IFRIC 16 clarifies that the aggregate net amount recognized in the foreign currency translation reserve in respect of all foreign operations in the ultimate parent's consolidated financial statements is not affected by whether the parent uses the direct or step-by-step method of consolidation[18]. However, the IFRS Interpretation states that the amount included in the foreign exchange translation reserve in respect of an individual foreign operation may be affected by the consolidation method. In particular, the use of the step-by-step method may result in an amount that is reclassified to the profit or loss that is different from that used to determine hedge effectiveness. IFRIC 16 clarifies

that an entity can make an accounting policy choice to eliminate the difference by determining the amount that would have arisen had the direct method been used for consolidation.

Applying it to the scenario above, if Subsidiary C is disposed, the amount to be reclassified from the foreign currency translation reserve to the profit or loss in Parent's consolidated financial statements is as follows:

page 955

(1) For the US$300 million net investment in Subsidiary C, the amount is determined in accordance with IAS 21 based on the consolidation method.

If the direct method was adopted, the FCTR balance will be determined based on the €/US$ foreign exchange rate. Conversely, if the step-by-step method was used, the FCTR balance will be determined using a two-step approach. First, Parent entity will determine the FCTR balance recognized by Subsidiary B using the £/US$ exchange rate. Following that, that FCTR balance recognized by Subsidiary B using the £/US$ exchange rate will then be translated into Parent's functional currency using the £/€ exchange rate.

(2) For the US$300 million external bank loan of Subsidiary A, the amount is calculated in accordance with IFRS 9. In other words, it is the cumulative amount recognized in other comprehensive income (that was determined to be an effective hedge) that will be reclassified to the profit or loss in the Parent's consolidated financial statements.

OPTION TO DESIGNATE A CREDIT EXPOSURE AT FVTPL

A financial instrument with credit risk managed by a credit derivative measured at FVTPL can itself be measured at FVTPL if the name of the credit exposure and seniority of the financial instrument matches that of the reference entity (IFRS 9 paragraph 6.7). The financial instrument could be outside the scope of IFRS 9, for example loan commitment. The designation at FVTPL may be done while the loan commitment is unrecognized, at initial recognition or subsequent to initial recognition. If the designation occurs after the initial recognition, the difference between the fair value and carrying amount is recognized in profit or loss at the designation date. The measurement of financial instrument at FVTPL is discontinued when the qualifying criteria are no longer met and the financial instrument is not otherwise measured at FVTPL. The fair value at the date of discontinuation becomes the new carrying amount, which is subsequently amortized (IFRS 9 paragraphs 6.7.2 to 6.7.4).

OWN USE CONTRACTS

Under IFRS 9, contracts to buy or sell a non-financial item that can be settled net in cash or using another financial instrument are included within the scope of the IFRS Standard. The same treatment will apply if such contracts can be settled through the exchange of financial instruments as if the contracts were financial instruments. The rationale is because such contracts with these features are in substance similar to financial derivatives. Most commodity purchase or sales contracts (e.g. soyabean, corn) which are readily convertible to cash (as they are traded in commodity exchanges) will meet the criteria for net settlement in cash. Accordingly, they will be accounted for under IFRS 9 as a derivative contract at fair value through profit or loss.

The exception to this principle is when these contracts are entered into and continue to be held for the purpose of the receipt or delivery of a non-financial item in accordance with the entity's expected purchase, sale or usage requirements (Paragraph 2.4 of IFRS 9). In other words, the entity who enters into such arrangement will take physical delivery of the underlying item as the entity needs it for its own purchase, sale or consumption requirements. In practice, this is known as own-use scope exception. When the conditions under this exception

page 956

applies, the entity will not account for these contracts as financial instruments under IFRS 9. Instead, they will account for this as normal purchase or sales contracts (i.e. as executory contracts). The logic behind is this: given that these underlying items in the contracts for the entity's own consumption or use, fair changes of the contracts are not relevant to the entity itself. The own use scope exception mostly applies to contracts for commodity purchases or sales.

However, it is not uncommon for entities in the commodity industry to enter into contracts for both their own use requirements as well as for risk management purposes. Typically, contracts of both types will be managed together. When this happens, an accounting mismatch ensues. This is because the change in the fair value of those contracts designated for risk management purposes is recognized in profit or loss. The change in the fair value of the commodity supply contract for own use, on the other hand is not recognized as they are accounted for as executory contracts.

To eliminate this accounting mismatch, an entity could apply hedge accounting by designating the own-use commodity supply contracts (which meet the definition of a firm commitment) as a hedged item in a fair value hedge relationship. Consequently, the own-use commodity supply contracts would be measured at fair value with fair value changes taken to profit or loss. The fair value changes on those contracts that designated as hedging instruments would offset the changes in the fair value on the hedged items (to the extent that those are effective hedges). However, for the entity to apply hedge accounting in these circumstances, it is administratively burdensome as that entity will have to adhere to the requirements in IFRS 9 for hedge accounting (for instance preparing the hedge documentation at inception). In addition, as further explained in BCZ2.24 in the Basis to Conclusions for IFRS 9, such entities usually enter into large volumes of commodity contracts and some positions may offset each other. Therefore, these entities would typically hedge on a net basis. As the net position is generally monitored, managed and adjusted on a daily basis, the entities would have to adjust the fair value hedge relationships frequently if they were to apply hedge accounting.

To address this concern, the IASB introduced a fair value option for own use contracts as set out in paragraph 2.5 of IFRS 9. Specifically, an entity may irrevocably designate such contracts, at the inception of the contract, as measured at fair value through profit or loss. The IFRS stresses that this designation is available only at inception of the contract and only if it eliminates or significantly reduces the accounting mismatch that would have resulted if the own-use contracts were scoped out of IFRS 9.

DISCONTINUATION OR TERMINATION OF HEDGE ACCOUNTING

Paragraph 6.5.6 of IFRS 9 requires an entity to discontinue hedge accounting in its entirety when the hedging relationship as a whole ceases to meet the qualifying criteria[19]. In contrast to IAS 39, IFRS 9 does not allow voluntary discontinuation of hedge accounting. Discontinuation applies prospectively from the date on which the qualifying criteria are no longer met. The IFRS provides some instances in which this would be the case. These instances include when the hedging instrument has reached its maturity date or is sold, terminated or exercised[20]. In addition, as discussed in the preceding section, hedge accounting is discontinued if the risk management objective for the hedge relationship has changed.

Discontinuation of hedge accounting is not just restricted to the entire hedge relationship. In contrast to IAS 39, IFRS 9 introduces partial discontinuation of hedge accounting. In particular, an entity discontinues hedge accounting for part of a hedging relationship if that part of the hedging relationship ceases to meet the qualifying criteria. An example of this is when an entity rebalances a hedging relationship as explained in Illustration 10.6. In that illustration, Coffee Ltd is effectively discontinuing the hedge relationship partially when it reclassifies 16.7% of the fair value of the coffee futures contract on 31 December 20x1 from a hedging instrument to a held for trading instrument.

When an entity discontinues a hedge relationship, paragraph B6.5.28 of IFRS 9 allows the entity to designate a new hedging relationship that involves the hedging instrument or hedged item for which hedge accounting was discontinued. The IFRS Standard clarifies that when the entity does that, this does not constitute a continuation of an existing hedging relationship. Instead, it is the start of a new hedge relationship.

Accounting for Discontinuation of Hedge Accounting for Fair Value Hedge

In a nutshell, when an entity discontinues hedge accounting, it ceases adjusting the carrying value of the hedged item for fair value changes arising from the hedged risk from the date where the hedge relationship is discontinued. The accounting for the hedged item reverts to the normal accounting principles as set out in the IFRS Standards. Insofar as to those adjustments that were made to the carrying value of the hedged item prior to hedge discontinuation, the entity continues to reflect those adjustments in the carrying value of the hedged item. If the hedged item is a financial instrument or a component of financial instrument that is measured at amortized cost, paragraph 6.5.7 of IFRS 9 requires the entity to amortize those adjustments to profit or loss using a recalculated effective interest rate. That recalculated effective interest rate is the one that was recalculated at the date where amortization began. Paragraph 6.5.10 of IFRS 9 clarifies that amortization may begin as soon as an adjustment exists and will not begin later than when the hedged item ceases to be adjusted for hedging gains and losses. In other words, this means that amortization may commence at the point of adjustment when the hedge relationship is still in place. That adjustment will be fully amortized at the date of the maturity of the financial instrument. For hedges of equity instruments that are classified as fair value through other comprehensive income, the entity stops recording gains or losses on the hedging instrument in other comprehensive income when hedge accounting is discontinued.

In respect of the derivatives which were designated as hedging instruments, upon hedge discontinuation, the accounting for the derivatives reverts to the accounting treatment as set out in IFRS 9, i.e. at fair value through profit or loss.

Table 10.10 summarizes the accounting treatment in respect of the hedged item and hedging instrument in the various scenarios where hedge accounting is discontinued.

TABLE 10.10 Accounting treatment for hedged item and hedging instrument when hedge accounting is discontinued

Scenarios in which Hedge Accounting is Discontinued	Hedged Item	Hedging Instrument
Hedge effectiveness qualifying criteria is no longer met (for instance: the effect of credit risk starts to dominate economic relationship between the hedging instrument and hedged item)	• Adjustments made prior to hedge discontinuation will continue to be reflected in the carrying value • Carrying value of hedged item ceases to be adjusted for fair value changes arising from the hedged risk from date where hedge is discontinued • Accounting reverts to the normal accounting principles as set out in the IFRS Standards • If hedged item is a financial instrument measured at amortized cost, amortize adjustments to profit or loss using a recalculated effective interest rate	• If derivative, continue to account for at fair value through profit or loss
The hedged item is sold, terminated or no longer expected to occur/take place	• Hedged item is derecognized with gains or losses recognized in profit or loss • If firm commitment, previous fair value changes are de-recognized to profit or loss	• If derivative, continue to account for at fair value through profit or loss

The hedging instrument has reached its maturity date or is sold, terminated or exercised.	• Adjustments made prior to hedge discontinuation will continue to be reflected in the carrying value • Carrying value of hedged item ceases to be adjusted for fair value changes arising from the hedged risk from date where hedge is discontinued • Accounting reverts to the normal accounting principles as set out in the IFRS • If hedged item is a financial instrument measured at amortized cost, amortize adjustments to profit or loss using a recalculated effective interest rate	• Hedging instrument is derecognized

Accounting for Discontinuation of Hedge Accounting for Cash flow Hedge

Paragraph 6.5.12 of IFRS 9 sets out the accounting requirements when an entity discontinues hedge accounting for a cash flow hedge. In particular, the accounting treatment for the amount that has been recorded in the cash flow hedge reserve in other comprehensive income is dependent on whether the hedged future cash flows are still expected to occur.

Specifically, if the hedge future cash flows are still expected to occur[21], paragraph 6.5.12(a) of IFRS 9 requires the entity to retain the amount accumulated in the cash flow hedge reserve until the cash flows occur. Upon the occurrence of these future cash flows, the entity will do a basis adjustment[22] as discussed above if (1) the hedged forecast transaction results in the recognition of a non-financial asset or non-financial liability, or (2) a hedged forecast transaction for a non-financial asset or a non-financial liability becomes a firm commitment for which fair value hedge accounting is applied. For any other cash flow hedges other than these two scenarios, the entity will reclassify the amount from the cash flow hedge reserve to the profit or loss as a reclassification adjustment in the same period or periods during which the hedged expected future cash flows affect profit or loss. The exception to this is when the amount accumulated in the cash flow hedge reserve is a loss and the entity expects that all or a portion of that loss will not be recovered in one or more future periods. If that is the case, the IFRS Standard requires the entity to reclassify the amount that is not expected to be recovered into profit or loss as a reclassification adjustment immediately.

page 958

page 959

Conversely, if the hedged future cash flows are no longer expected to occur, paragraph 6.5.12(a) of IFRS 9 states that the amount accumulated in the cash flow hedge reserve is reclassified from other comprehensive income to profit or loss as a reclassification adjustment immediately.

HEDGES WHERE HEDGE ACCOUNTING IS NOT REQUIRED

Not all hedge relationships require the application of hedge accounting as the effects of “natural hedging” can be achieved through normal accounting procedures. Recall that the main objective of hedge accounting is to ensure that offsetting gains and losses of the hedged item and the hedging instrument are reported in the same accounting period in order to reduce the volatility of reported earnings. If normal accounting treatment for the hedged item and the hedging instrument results in the offsetting gains and losses being reported in same period, there is no need to apply hedge accounting. An example is a hedge of a financial instrument classified as fair value through profit or loss. Changes in the fair values of the hedging instrument and the hedged item will naturally offset each other in the

income statement. Monetary items that are denominated in foreign currency give rise to exchange gains and losses when they are remeasured at settlement or at the reporting date. The resulting gains or losses are taken to the profit or loss. If a foreign currency monetary item is hedged by a derivative, the loss or gain on the monetary item will offset the gain or loss on the hedging instrument in the same period provided the critical terms match[23] (see Illustration 10.9).

EVALUATION OF HEDGE ACCOUNTING

This chapter concludes with an assessment of hedge accounting. The objectives of hedge accounting are twofold: to reflect the effectiveness of hedging activities of a firm and to reduce the volatility of reported earnings. Generally, firms (and investors) prefer stable to volatile earnings, so, there is an incentive to apply hedge accounting. IFRS 9 has simplified the hedge accounting rules and made them consistent with the entity's risk management objective.

Many entities, particularly financial institutions, do not hedge on an individual item basis. Typically, the hedges are on a portfolio basis. Applying hedge accounting to portfolio hedges will prove particularly challenging. Many portfolios consist of assets and liabilities that differ in terms of the type of risk they are exposed to and the maturity period. Additionally, hedges are often made on a net basis. Compliance with hedge accounting criteria for portfolio (or macro) hedges will be particularly challenging, if not impossible. Organizations such as Freddie Mac and Fannie Mae, which are very huge financial corporations in the US, have encountered problems with their interpretation and implementation of the hedge accounting requirements of SFAS 133[24]. The Board is exploring an accounting approach to dynamic interest rate risk management to address the macro hedging issues.

page 960

page 961

CONCEPT QUESTIONS

CQ10.1 From a risk perspective, how is a forward contract different from a futures contract?

CQ10.2 How does the position of an option holder differ from that of an option writer?

CQ10.3 A firm that intends to hedge against commodity price risk has to decide whether to use a forward contract or an options contract to hedge the risk. What factors should the firm consider before deciding on the type of contract to use? You may use any assumptions to support your discussion.

CQ10.4 Distinguish between a cash flow hedge and a fair value hedge.

CQ10.5 In what situations can a hedged item be either a fair value hedge or a cash flow hedge? Explain why each type of hedge is applicable to the situation.

CQ10.6 How is a swap similar to a forward contract?

CQ10.7 Both a firm commitment and a forecasted transaction result in a future transaction. Why is a hedge of a firm commitment a fair value hedge and a hedge of a forecasted transaction a cash flow hedge?

CQ10.8 How is a hedge of a net investment in a foreign entity accounted for?

EXERCISES

Use the following information to answer E10.1 and E10.2.

On 31 July 20x1, Atlas Company wrote (sold) a put option on 10,000 Listco shares. The option premium was $0.18 per share and the exercise price was $3.60. The option expired on 30 September 20x1. The prices of Listco shares and the put option on selected dates are as follows:

Date	Price of Listco shares	Put option premium per share
31 July 20x1	$3.85	$0.18
31 August 20x1	$3.75	$0.16
30 September 20x1	$3.55	?

E10.1 The put option premium per share on 30 September 20x1 was:

(a) $0
(b) $0.05
(c) $0.20
(d) $0.15

E10.2 Assume that Atlas Company did not make any journal entries relating to the put option. Atlas Company would have to report the following gain/(loss) on the put option on 30 September 20x1:

(a) $5,000
(b) $1,800
(c) $(1,800)
(d) $1,300

Use the following information to answer E10.3 and E10.4.

Alpha Corporation had the following transactions in 20x5:

Date	Transaction
1 January 20x5	Bought 100,000 units of shares of Company X at the market price of $3.80 per share. Alpha Corporation classified the investment as FVOCI
1 July 20x5	Purchased a put option, which gave it the right but not the obligation to sell 100,000 units of shares of Company X at a price of $4.50 which was the prevailing market price. Alpha paid a premium of $12,000 for the put option. The put option expired on 30 September 20x5. Alpha Corporation classified the put option as a fair value hedge of its investment in Company X. Hedge effectiveness was measured based on the ratio of the cumulative

	change in the intrinsic value of the put option to the cumulative change in the fair value of the FVOCI
30 September 20x5	Alpha Corporation closed the long position on the put option but retained the FVOCI investment. The market price of Company X's shares was $4.00

At 31 December 20x5, the price of Company X's shares was $3.90.

E10.3 The amount of gain (loss) taken to equity in respect of the put option for the year ended 31 December 20x5 was:

(a) $0
(b) Gain of $38,000
(c) Gain of $12,000
(d) Gain of $50,000
(e) None of the above

E10.4 The amount of fair value changes taken to equity as at 31 December 20x5 was:

(a) $10,000
(b) $20,000
(c) $60,000
(d) $70,000
(e) None of the above

E10.5 If Gemini has a floating rate loan and enters into a pay-fixed-and-receive-floating interest swap transaction with the same principal amount, which of the following statements is the most appropriate for Gemini?

(a) Changes in the fair value of the swap should be deferred in equity with corresponding changes recognized in the carrying amount of the loan.
(b) Changes in the fair value of the swap should be deferred in equity with corresponding changes recognized in a swap asset or swap liability.
(c) Changes in the fair value of the swap should be recognized in the income statement with corresponding changes recognized in the carrying amount of the loan.
(d) Changes in the fair value of the swap should be recognized in the income statement with corresponding changes recognized in a swap asset or swap liability.

E10.6 On 1 April 20x6, ABC Company entered into a contract to sell 10,000 shares in XYZ Company for delivery on 30 June 20x6 at a price that is not below $3.00 per share and not higher than $4.00 per share. The current market price is $3.50.

Which of the following statements is correct?

(a) The contract has an embedded long call option with a strike price of $3.00 and an embedded long put option with a strike price of $3.00.
(b) The contract has an embedded call option with a strike price of $3.00 and an embedded written (short) put option with a strike price of $4.00.
(c) The contract has an embedded written (short) call option with a strike price of $4.00 and an embedded (long) put option with a strike price of $3.00.

(d) The contract has an embedded (long) call option with a strike price of $3.00 and an embedded (long) put option with a strike price of $4.00.

Use the following information to answer E10.7, E10.8 and E10.9.

On 1 October 20x4, SingCo committed to purchase machinery for FC 10,000,000, which would be delivered on 1 February 20x5. At the same time, SingCo entered into a forward purchase contract to buy FC 10,000,000, which would mature on 1 February 20x5. The forward purchase contract was designated as a hedge of the fixed asset foreign currency purchase commitment. Time value of the forward contract was excluded in determining hedge effectiveness. Details are as follows:

	1 October 20x4	31 December 20x4	1 February 20x5
Notional amount of forward purchase contract	FC 10,000,000		
Spot rate ($: FC 1)	1.23	1.32	1.28
Forward rate for 1 Feb 20x5 delivery ($: FC 1)	1.25	1.33	1.28

Ignore discounting. SingCo's functional currency is the dollar. The financial year-end is 31 December.

E10.7 What is the gain/(loss) to be recognized in the income statement for 20x4 under IFRS 9?

(a) $800,000
(b) 0
(c) $(100,000)
(d) $(200,000)
(e) $100,000

E10.8 What should be the total cost of the equipment as at 1 February 20x5 under IFRS 9?

(a) $12,800,000
(b) $12,500,000
(c) $11,500,000
(d) $12,300,000

E10.9 What is the overall net cash inflow/(outflow) arising from the forward contract?

(a) $300,000
(b) ($300,000)
(c) ($12,800,000)
(d) ($12,500,000)

Use the following information to answer E10.10 and E10.11.

XYZ Company purchased a call option on 1 April 20x4, which was exercised on 30 June 20x4. The changes in time and intrinsic value of the call option to purchase 10,000 units of securities in S Company are as follows:

	At 30 June 20x4
Loss in time value	(200)
Gain in intrinsic value	1,500

E10.10 If XYZ Company purchased the call option primarily to benefit from an expected rising market value of the call option, which of the following statements best describes the appropriate accounting treatment as at 30 June 20x4 under IFRS 9?

(a) Loss in time value is expensed off to the income statement while gain in intrinsic value is deferred in equity.
(b) Loss in time value and gain in intrinsic value are taken to the income statement.
(c) Loss and gain are disclosed in footnotes.
(d) Loss in time value is expensed off to the income statement while gain in intrinsic value is adjusted to the cost of the shares.

E10.11 Ignore the previous question. On 1 April 20x4, XYZ Company entered into a commitment to sell 10,000 units of securities in S Company at a fixed price for delivery on 30 June 20x4. If the call option was deemed as an effective hedge (with time value excluded) of the commitment, which of the following statements is most appropriate under IFRS 9 as at 30 June 20x4?

(a) Profit on sale of securities will increase by $1,300.
(b) Profit on sale of securities will increase by $1,500.
(c) Income from option will increase by $1,300.
(d) Deferred gain in equity will increase by $1,500.

PROBLEMS

P10.1 Fair value hedge of inventory

On 1 November 20x5 Company X, a manufacturer of gold jewelry and ornaments, had an inventory of 10,000 ounces of gold ingots that cost $780 an ounce. The price of gold was $950 an ounce. Company X expected to use the gold to produce investment-grade gold coins that would be sold in February 20x6. Company X was concerned that the price of gold would fall, which would in turn affect the price of gold coins. Therefore, Company X decided to hedge the value of its gold inventory by selling gold futures on the commodity exchange. Gold futures were traded in 100 troy ounce contracts; Company X entered into 100 31 January 20x6 contracts at a price of $952 per ounce. The exchange required a margin deposit of $3,300 per contract. The spot price and the price of January futures contracts are as follows:

	Spot price of gold (per ounce)	January gold futures (per ounce)
1 November 20x5	$950	$952
31 December 20x5	940	941
31 January 20x6	960	960

Company X designated the futures contract as a fair value hedge of the change in the value of the gold inventory due to changes in the spot price of gold. Hedge effectiveness is assessed based on the ratio of the change in the entire fair value of the futures contract to the change in the value of the inventory based on the spot gold price.

Required:

1. Assess the effectiveness of the hedge at inception and during the life of the futures contract.
2. Prepare journal entries to record the hedging instrument and the hedged item.

P10.3 Hedge of a forecasted transaction

On 1 March 20x3, East-West Airlines Inc purchased an at-the-money call option on 100,000 barrels of jet-fuel oil with an exercise price of $40 per barrel for delivery on 31 May 20x3. East-West paid a premium of $200,000 for the call option. The following are the quoted spot prices for the jet-fuel oil and the call option from 1 March 20x3 to 31 May 20x3.

	Spot price of jet-fuel oil $/barrel	Price of 31 May 20x3 call option
1 March 20x3	$40	$2 per barrel
31 March 20x3	$42	$3 per barrel
30 April 20x3	$45	$6 per barrel
31 May 20x3	$44	$4 per barrel

The option contract was to hedge against the forecasted purchase of 100,000 barrels of jet-fuel oil on 31 May 20x3. The option contract was an effective hedge as the critical terms matched and the time value of the option contract was excluded from the hedging relationship. The contract would be settled on a net basis. East-West Airlines Inc's financial year-end is 30 April.

Required:

1. Calculate the time value and the intrinsic value of the option contract on 31 March 20x3, 30 April 20x3 and 31 May 20x3.
2. Prepare the journal entries relating to the hedging instrument.

P10.3 Hedge of a firm commitment

On 30 November 20x1, Systech Ltd entered into a non-cancellable contract to buy 1,000 shares of Fastrack Ltd for $5,000 on 31 July 20x2. On the same date, Systech Ltd purchased a put option on 1,000 Fastrack shares for $500 to hedge the risk of a fall in the fair value of the commitment. The exercise price was $5 per share. The put option's expiration date was 31 July 20x2. Data on the price movements of Fastrack shares and the put option are as follows:

Date	Price of Fastrack's share	Put option
30 November 20x1	$5.00	$ 500
30 June 20x2	$4.50	$ 700
31 July 20x2	$4.00	$1,000

Systech designated the option contract as a hedge of the risk of changes in the fair value of the firm commitment resulting from changes in the price of Fastrack's shares. Systech excluded the time value of the option contract from the hedging relationship. Systech Ltd closed the position on the put option on 31 July 20x2, fulfilled its obligations under the contract, and sold off its shares on the same date. Systech's year-end is 30 June 20x2.

Required:

Prepare the journal entries on 30 November 20x1, 30 June 20x2, and 31 July 20x2.

P10.4 Hedge of foreign exchange rate risk

On 1 March 20x3, ABC Corporation, whose functional currency is the dollar, was informed that it had been successful in its tender for a contract to supply plant and equipment to an overseas customer. ABC Corporation's tender price for the contract was FC 500,000. However, the contract would only be signed on 1 June 20x3 as there were certain technical details to be agreed upon. The delivery date was 31 December 20x3. Since the customer had indicated that it would give ABC Corporation a bank guarantee for the entire contract sum, ABC Corporation agreed to have the entire sum settled on 28 February 20x4. The equipment was delivered on schedule and the amount was settled on the due date.

In anticipation of the signing of the contract, ABC Corporation purchased a put option contract with a notional amount of FC 500,000 on 1 March 20x3. The option, which had an exercise price of $1.75/FC 1, expired on 28 February 20x4. ABC Corporation paid a premium of $0.045 per FC 1 for the option. The purchase of the put option was to hedge the foreign exchange risk of the forecasted transaction on 1 March 20x3 and the resulting receivable after the transaction materializes. The spot exchange rates between the dollar and the FC, and the price of a 28 February 20x4 put option are as follows:

	FC 1 =	Price of option
1 March 20x3	$1.75	$0.045/FC 1
1 June 20x3	1.73	0.055/FC 1
31 December 20x3	1.70	0.06/FC 1
28 February 20x4	1.68	

Assume that the option contract qualifies as an effective hedge and the time value component of the option contract is excluded from the hedge relationship.

Required:

1. What is the price of the option on 28 February 20x4?
2. Show all journal entries (with narratives) relating to the hedge from 1 March 20x3 to 28 February 20x4.

P10.5 Hedge of a foreign-currency-denominated investment

Atticus Ltd, whose functional currency is the dollar, purchased 100,000 shares of Scotts Corporation (a foreign company listed in country X whose currency is the LC) at a price of LC 2.80 per share when the spot exchange rate was LC 1 to $1.28 on 1 October 20x4. Atticus Ltd classified the long term equity investment as fair value to other comprehensive income (FVOCI). The share price of Scotts Corporation on 31 December 20x4 was LC 3.00 and the spot exchange rate was LC 1 = $1.21. Atticus Ltd's financial year-end is 31 December. The following additional information is available:

(a) On 1 November 20x4, the price of Scotts Corporation's share had risen to LC 2.85. Atticus Ltd entered into a contract with a bank to sell forward LC 285,000 for delivery on 31 March 20x5. The spot exchange rate was LC 1 to $1.25 and the forward rate on the contract was LC 1 to $1.23. The purpose of the contract was to hedge the foreign currency risk associated with the investment in Scotts Corporation as Atticus Ltd anticipated a possible depreciation of the LC vis-à-vis the dollar.

(b) On 31 December 20x4, Atticus Ltd purchased a put option on 100,000 units of Scotts Corporation shares with a strike price of LC 3.00. The purpose of the put option was to hedge against a decrease in the share price of Scotts Corporation below LC 3.00. The option expired on 30 June 20x5.

page 968

The following information on the price of Scotts Corporation shares, the $/LC exchange rates and the premium on the put option is available:

	31 December 20x4	31 March 20x5
Share price of Scotts Corporation	LC 3.00	LC 2.93
Spot LC/$ exchange rate	$1.21	$1.20
Forward exchange rate for 31 March 20x5 contract	$1.19	$1.20
Premium on put option (per unit of underlying)	LC 0.03	LC 0.085

Atticus settled the forward contract on a net basis at the maturity date and continued to hold the shares in Scotts Corporation. On 30 June 20x5, Atticus Ltd closed the option position and sold off all the shares at the prevailing market price of LC 2.85 when the spot exchange rate was LC 1 to $1.21.

Required:

Assume that all hedge accounting requirements are met and Atticus designates the option contract and the forward contract as fair value hedges of the price and foreign exchange risk. Atticus excludes the time value element from the hedging relationships in both contracts. Show the journal entries pertaining to the forward contract and the put option on the following dates:

(a) 1 November 20x4
(b) 31 December 20x4
(c) 31 March 20x5
(d) 30 June 20x5

Show workings and include brief narratives. Ignore discounting of the forward contract.

P10.6 Hedge of a foreign-currency-denominated forecasted transaction and firm commitment

The following information pertains to Alpha Corporation whose functional currency is the dollar.

Date	Event
1 December 20x1	A highly probable sales transaction of FC 10,000,000 was forecasted to arise from successful negotiations with a customer.
	Alpha Corporation entered into a forward exchange contract to deliver (sell) FC 10,000,000 on 30 March 20x2 to hedge the foreign exchange risk of the forecasted sales transaction.
31 December 20x1	Alpha Corporation's financial year-end.
1 February 20x2	Signed a non-cancellable contract with the customer for an order of FC 10,000,000 with an agreed delivery and settlement date of 30 March 20x2.
30 March 20x2	Delivery made to the customer. Net settlement of forward contract.

The relevant exchange rates are as follows:

	Spot rates (SR) $ to FC 1	Forward rate (FR) for period to 30 March 20x2
1 December 20x1	1.74	1.70
31 December 20x1	1.70	1.67
1 February 20x2	1.65	1.63
30 March 20x2	1.69	1.69

Required:

Assume that Alpha Corporation designates the forward contract as a fair value hedge of the foreign exchange risk related to the transaction. The time value of the forward contract is excluded from the hedging relationship. Prepare journal entries for the period 1 December 20x1 to 30 March 20x2. (To simplify the computations, ignore discounting of the forward contract.)

P10.7 Accounting for a cash flow hedge

Refer to P10.6. Assume that Alpha Corporation designates the forward contract as a cash flow hedge of the foreign exchange risk related to the transaction. Prepare journal entries for the period 1 December 20x1 to 30 March 20x2. (To simplify the computations, ignore discounting of the forward contract.)

P10.8 Cash flow hedge of a firm commitment using a forward contract

On 30 September 20x5, Singco entered into a non-cancellable contract to purchase inventory for 100,000 euros to be delivered on 31 January 20x6 with payment due on 31 March 20x6. Singco was concerned that the euro might appreciate by the time the inventory transaction took place. To hedge against the risk of an appreciation of the euro, Singco entered into a six-month forward exchange contract on 30 September 20x5 to purchase 100,000 euros on 31 March 20x6. It designated the forward exchange contract as a cash flow hedge of a firm commitment to purchase inventory on 31 January 20x6 and the 100,000 euros payable arising from the transaction. Since the critical terms matched closely, the hedge was expected to be highly effective.

The inventory was delivered on 31 January 20x6 as scheduled and Singco settled the resulting accounts payable on 31 March 20x6. Singco's functional and presentation currency is the dollar and its financial year-end is 31 December. Relevant exchange rates are as follows:

Date	Spot rate $ to euro	Forward rate to 31 March 20x6
30 September 20x5	2.915	2.980
31 December 20x5	2.937	2.969
31 January 20x6	2.920	2.926
31 March 20x6	2.931	2.931

Assume the following:

(a) A discount rate of 6% per annum.

(b) Singco's accounting policy was to apply basis adjustment under IFRS 9 paragraph 6.5.16 to non-financial assets that resulted from hedged transactions. Singco designates the hedge as a cash flow hedge in accordance with the alternative permitted under IFRS 9 paragraph 6.5.4.

Required:

1. Singco designated the hedging relationship for changes in the spot rate element of the forward contract, that is, the interest element in the forward contract was excluded from the measurement of hedge effectiveness. Prepare the journal entries to record the transactions from 30 September 20x5 to 31 March 20x6. (Hint: Treat the firm commitment as though it is a forecast transaction.)
2. Ignore (a) above. Singco designated the hedging relationship as being for changes in the fair value of the forward contract; that is, the interest element in the forward contract was not excluded from the measurement of hedge effectiveness. Prepare the journal entries to record the transactions from 30 September 20x5 to 31 March 20x6. (The hint in part (1) applies.)

P10.9 All-in-one hedge of foreign exchange rate risk

Lexco Company's functional currency is the dollar. On 1 December 20x1, Lexco entered into a four-month forward contract to sell FC (foreign currency) units. Terms of the contract are as follows:

Notional amount	FC 10,000,000
Maturity	1 April 20x2
Forward sales rate:	$1.80 to FC 1

	Spot rates (SR) $ to FC 1	Forward rate (FR) for period to 1 April 20x2
1 December 20x1	1.84	1.8
31 December 20x1 (year-end)	1.73	1.7
1 March 20x2	1.7	1.68
1 April 20x2	1.76	1.76 (maturity)

Date	Event
1 December 20x1	Non-cancellable order to sell goods for FC 10,000,000. Delivery on 1 March 20x2. Forward contract was entered into to hedge the foreign currency receipts from the sales order.
31 December 20x1	Year-end.
1 March 20x2	Fulfilment of sales order.
1 April 20x2	Settlement of accounts receivable by customer. Net settlement of forward contract.

Required:

1. Prepare the journal entries from 1 December 20x1 to 1 April 20x2 applying the requirements of IFRS 9 and IAS 21. The purpose of the forward contract is to hedge the foreign exchange risk; the interest element in the forward contract is excluded from the hedging relationship. The forward contract is designated as a cash flow hedge of the commitment and the resultant receivable. Assume all other requirements for hedge accounting are met.
2. How will the journal entries differ if the forward contract is accounted for as a fair value hedge?

P10.10 Hedge of the foreign exchange risk of a forecast transaction

Alfalfa Company's functional currency is the dollar. On 30 June 20x1, it entered into a forward exchange contract to purchase FC 100,000 at the forward rate of $1.077 for delivery on 30 June 20x2. The spot exchange rate was $1.072. It designated the forward exchange contract as a hedging instrument in a cash flow hedge of a forecast transaction to purchase commodity on 31 March 20x2 and the resulting payable was to be paid on 30 June 20x2. All hedge accounting conditions in IFRS 9 were met. The purchase of the commodity occurred on 31 March 20x2 as expected.

The following exchange rates apply for the period to 30 June 20x2.

Date	Spot rate $ to FC 1	Forward rate to 30 June 20x2
30 June 20x1	1.072	1.077
31 December 20x1	1.080	1.082
31 March 20x2	1.083	1.0845
30 June 20x2	1.087	1.087

The applicable interest rate was 6% per annum throughout the period. Alfalfa's financial year end is 31 December.

Required:

1. Show the journal entries if the hedging relationship is designated as being for changes in the fair value of the entire forward exchange contract and Alfalfa's accounting policy is to adjust the cost of non-financial assets that result from hedged forecast transaction (hint: IFRS 9 allows the expected cash flows to be based on either spot rate or forward rate).
2. Show the journal entries if the hedging relationship is designated as being for changes in the spot element of the forward exchange contract and the interest element is excluded from the designated hedging relationship (IFRS 9: 6.5.16), and Alfalfa's accounting policy is to adjust the cost of non-financial assets that result from hedged forecast transaction.
3. Is there any difference in the financial statements between (1) and (2) above?

P10.11 Fair value hedge of a firm commitment

Assume the same information as in P10.10, except that the hedged item is a firm commitment and the forward contract was designated as a fair value hedge of the foreign exchange risk of a firm commitment.

Required:

1. Prepare the journal entries for the hedging instrument and the hedged item for the duration of the hedge. Assume that the time value (interest element) is excluded from the hedge relationship.

2. Is there any difference between designating the hedge as a fair value hedge and as a cash flow hedge as in P10.10(2)?

P10.12 Interest rate swap

Cusso Corporation had a bank loan of $50,000,000, which was to be repaid at the end of 20x5. The loan carried an interest rate based on the three-month London Interbank Offer Rate (LIBOR) plus 150 basis points. Interest on the loan was payable half-yearly on 30 June and 31 December. Cusso, concerned that interest rates might increase during the next three years, decided to enter into a swap with a financial intermediary on 1 January 20x3, which involved Cusso paying a fixed rate of 5.5% per annum and receiving LIBOR plus 150 basis points. The notional amount of the swap was $50,000,000.

LIBOR was reset semi-annually beginning with 1 January 20x3 in order to determine the next interest payment. Differences between the fixed rate and the variable rate would be settled on a semi-annual basis. The following interest rates occurred over the term of the swap.

Date	LIBOR	LIBOR + 150 basis points
1 January 20x3	4.0%	5.5%
30 June 20x3	4.5%	6.0%
31 December 20x3 . . .	5.0%	6.5%
30 June 20x4	4.7%	6.2%
31 December 20x4 . . .	4.5%	6.0%
30 June 20x5	4.3%	5.8%

The following assumptions are made:

(a) The yield curve is flat.

(b) No hedge ineffectiveness (the conditions for the FASB's "short-cut" method are assumed to be met).

(c) Other risks remain constant.

Cusso designates the swap as a cash flow hedge.

Required:

Prepare the journal entries required to account for the loan and the swap over the period of the swap.

P10.13 Hedge of a forecasted sale of inventory

Eastern Company had inventory of 5,000,000 one-ounce silver coins, which were carried at a cost of $15 million (current market value is $16.5 million). The selling price of the silver coins was largely determined by the spot price of silver, which accounted for the bulk of the manufacturing costs. In recent months, the price of silver had risen substantially due to disruption in supply as a result of strikes in Australia, which is the main producer of silver. The management of Eastern Company was concerned about a potential fall in the price of silver when the supply shortage eases. To hedge against this risk, the management of Eastern Company sold silver futures contracts with a total notional quantity of 5 million ounces at $3.21 per ounce on 1 October 20x1. The contract matured on 31 March 20x2. The commodity exchange required a margin deposit of $0.03 per ounce for the futures contract. The level of margin deposit had to be maintained at all times.

page 973

The management of Eastern Company had designated the futures contracts as a cash flow hedge of the anticipated sale of silver coins. Past experience had proven that there was a very high correlation between the spot price of silver and the selling price of silver coins. Therefore, the management expected that the futures contracts were an effective hedge of the anticipated sale and that the other conditions for hedge accounting were met. For the purpose of assessing hedge effectiveness, the entire change in the fair value of the futures contract was compared

with the change in the expected cash flows. The spot prices of silver coins and the prices of silver futures contracts for 31 March 20x2 delivery are as follows:

	Spot price of one-ounce silver coin	Futures price of silver per ounce for 31 March 20x2 delivery
1 October 20x1	$3.30	$3.21
31 December 20x1	3.265	3.17
28 February 20x2	3.15	3.05
31 March 20x2	3.10	3.00

The entire inventory was sold off on 31 March 20x2 at $3.10 per pound. Ignore the discounting of the expected future cash flow.

Required:

1. Assess the effectiveness of the hedge during the life of the futures contracts on a period-to-period basis as well as on a cumulative basis.
2. Show the journal entries for the hedging relationship and the sale of the inventory at all the dates given above. Assume the hedge effectiveness is assessed on a cumulative basis. Ignore movement in the margin deposit.
3. Compare the profit on the sale of the inventory with and without hedging.

P10.14 Hedge of inventory

The information is the same as in P10.13 except that on 1 October 20x1, the management of Eastern Company acquired 50 options contracts that gave the holder the right but not the obligation to sell 100,000 one-ounce silver coins per contract at a price of $3.30 per coin. The option contracts expired on 31 March 20x2. The premiums on the option are as follows:

	Option premium (per coin)
1 October 20x1	$0.12
31 December 20x1	0.13
28 February 20x2	0.175

The management of Eastern Company designated the options contracts as a hedge of the fair value of the inventory. The time value of the options was excluded from the hedging relationship. The entire inventory was sold off on 31 March 20x2 at $3.10 per coin.

Required:

1. Show the journal entries for the hedging instrument and the hedged item from 1 October 20x1 to 31 March 20x2.
2. Compare the profit on the sale of the inventory with and without hedging.

P10.15 Comprehensive problem on hedge accounting

Cambell Corporation had the following transactions in derivatives in 20x5:

Transaction 1 Cambell Corporation bought 100,000 shares of Hindz Company on 31 July 20x5 at $2.50 per share. The long term equity investment is classified as FVOCI. At the same date, Cambell Corporation purchased an out-of-the-money put option on 100,000 shares of Hindz Company and paid a premium of $3,000. The put option had an exercise price of $2.48 and expired on 30 September 20x5. The purpose of the put option was to provide Cambell Corporation with partial protection against declines in the share price of Hindz Company. Cambell Corporation designated the change in the intrinsic value of the put as the hedging instrument and the hedge as a fair value hedge of changes in the fair value of its investment in Hindz Company. At 30 September, Cambell Corporation continued to hold the 100,000 shares in Hindz Company and the put option position was closed on a net basis. The prices of Hindz Company shares and the put option are as follows:

	Share price of Hindz Company	Price per unit of put option
30 September	$2.20	$0.28

The time value of the option contract was excluded from the assessment of hedge effectiveness.

Transaction 2 On 1 January 20x5, Cambell Corporation borrowed $80,000,000 from a bank for a period of 24 months at an interest rate based on the London Interbank Offer Rate (LIBOR) plus 50 basis points. Interest on the loan was payable quarterly. Cambell entered into a swap with a financial intermediary on 1 January 20x5, which involved Cambell paying a fixed rate of 4.5% per annum and receiving LIBOR plus 50 basis points. The notional amount of the swap was $80,000,000. LIBOR rates were reset quarterly beginning with 1 January 20x5 in order to determine the next interest payment. Differences between the fixed rate and the variable rate would be settled on a quarterly basis. The following information pertains to interest rates and fair value of the swap over 20x5.

Date	LIBOR	Fair value of swap
1 January 20x5	4.0%	
31 March 20x5	4.5%	$ 666,273
30 June 20x5	5.0%	1,144,204
30 September 20x5	4.7%	673,507

Cambell designated the swap as a cash flow hedge. Assume there is no hedge ineffectiveness.

Transaction 3 On 1 January 20x3, Cambell acquired an 80% interest in the share capital of OGRE Inc, a foreign company with a paid-up capital of FC 2,000,000, and retained earnings of FC 300,000. Subsequent to the date of acquisition, the FC began to depreciate against the dollar and on 1 January 20x5 Cambell entered into a 12-month forward contract to sell FC 2,240,000 to hedge the investment. The equity section of OGRE Inc's statement of financial position as at 31 December 20x4 is as follows.

	FC
Share capital	2,000,000
Retained earnings	800,000
	2,800,000

Information on relevant exchange rates is given below:

Date	Spot rate	December 20x5

	($/FC)	Forward rate
1 January 20x5	$1.80	$1.78
31 March 20x5	1.785	1.77
30 June 20x5	1.765	1.755
30 September 20x5	1.75	1.742

Cambell designated the forward contract as a hedge of the net investment in OGRE and excluded the time value of the forward contract from the hedging relationship. Ignore discounting. Cambell Corporation's financial year ends on 30 September. Cambell's functional currency is the dollar.

Required:

1. Prepare journal entries to record all the transactions pertaining to the derivatives and the hedged items from 1 January 20x5 to 30 September 20x5.
2. Show the effects of the transactions in the financial statements of Cambell Corporation for the financial year ending 30 September 20x5.

P10.16 Hedging foreign exchange risk in purchase of equipment

The functional currency of K Co is the US dollar. On 1 January 2010, the management of K Co approved a decision to buy equipment for S$1,400,000. The equipment does not meet the conditions of a qualifying asset as defined by IAS 23 *Borrowing Costs*. After carrying an intensive search for suppliers, on 30 June 2010, K Co places a non-cancellable order to purchase the equipment. The equipment is delivered on 31 December 2010 and the payable is settled on 30 June 2011. The equipment is depreciated over a useful life of ten years with zero residual value.

K Co entered into a foreign exchange (FX) forward transaction on 1 January 2010 with an external broker B Co to buy S$1,400,000 and sell US dollar to hedge the foreign exchange risk in the purchase of equipment. The US$/S$ forward rate is 1.37 (that is, 1 US$ S$1.37) and maturity date is 30 June 2011.

Foreign exchange rates	USD/S$ spot	USD/S$ forward maturing 30 June 2011
1 January 2010	1.40	1.37
Average 1st half 2010	1.39	
30 June 2010	1.38	1.36
Average 2nd half 2010	1.34	
31 December 2010	1.32	1.29
Average year 2010	1.36	1.33
Average 1st half 2011	1.25	
30 June 2011	1.20	1.20
Average 2nd half 2011	1.24	
31 December 2011	1.30	
Average year 2011	1.24	
30 June 2012	1.28	
Average 1st half 2012	1.29	

Required:

Prepare the journal entries in K Co's book in 2010 and 2011 for the equipment and foreign exchange (FX) forward in accordance with IFRS 9 *Financial Instruments* and IAS 21 *The Effects of Changes in Foreign Exchange Rates*. Ignore taxes. (Convert the US$/S$ rates to S$/USD$ rates). State the effective FX rates at which the equipment cost and cash settlement are locked in.

P10.17 Hedging bond with interest rate swap

A Co has as its functional currency the Singapore dollar (S$) and enters into the following transaction. The business model of A Co is to hold investments to collect contractual cash flows and for sale.

Investment in quoted convertible bond of K Co	
Date of purchase	1 January 2010
Purchase price	US$3,000,000
Principal sum	US$2,600,000
Coupon rate	1.50% per half-year (settled every half-year)
Years to maturity from inception	3 years
Effective interest rate	1% per semi-annual.
Fair value as at 31 Dec 2010	US$2,500,000
Fair value as at 31 Dec 2011	US$2,050,000

Fair values of option in convertible bond remain unchanged on 31 December 2010 and 31 December 2011. A Co enters into an interest rate swap with an external party B Co in an attempt to hedge the fixed rate convertible bond purchased on 1 January 2010. In the interest rate swap contract, A Co receives floating interest rate LIBOR + 1%, reset and receivable every six months and pays fixed rate 1.50% semi-annually. Notional principal of the swap is US$3,000,000 and the swap maturity date is 31 December 2012. Swap settlements are made at the end of each half-year and the LIBOR rates are reset at the beginning of each half-year. The six-month LIBOR rates are as follows:

page 977

Date	Rate (%)
1 January 2010	0.50
30 June 2010	0.75
31 December 2010/1 January 2011	0.46
30 June 2011	0.40
31 December 2011	0.78

Required:

Prepare the journal entries in A Co's book in relation to the swap from 1 January 2010 to 31 December 2011.

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[1] Ramirez, J., (2007), *Accounting for Derivatives: Advanced Hedging under IFRS*, Chichester, UK: John Wiley & Sons Ltd, p. 210.

[2] The spot price is the underlying.

[3] This strategy is called a straddle.

[4] A written option does not qualify as a hedging instrument unless (a) it is designated as an offset to a purchased option; or (b) it is combined with a purchased option as one derivative instrument or jointly designated with other instruments and that derivative instrument or that combination is not, in effect, a net written option.

[5] In particular, derivatives embedded in financial assets would not qualify as hedging instruments as they are not permitted to be bifurcated under IFRS 9 (although they can be part of a hybrid financial asset that is measured at fair value through profit or loss and designated as the hedging instrument in its entirety).

[6] A firm commitment is defined in IFRS 9 as a binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date or dates.

[7] A forecast transaction is defined in IFRS 9 as an uncommitted but anticipated future transaction.

[8] IFRS 9 requires the entity to perform the ongoing assessment at a minimum at each reporting date or upon a significant change in the circumstances affecting the hedge effectiveness requirements.

[9] IFRS 9 distinguishes between an entity's risk management strategy from its risk management objectives. Paragraph B6.5.24 of IFRS 9 states that the risk management strategy is established at the highest level where an entity determines how it manages its risk. Typically risk management strategy identifies the risks to which the entity is exposed and set out how the entity responds to them. They are generally in place for a longer period and may include some flexibility to react to changes in circumstances that occur while that strategy is in place. On the other hand, risk management objective for a hedging relationship applies at the level of a particular hedging relationship. It sets out how a particular hedging instrument that has been designated is used to hedge a particular exposure that has been designated as the hedged item. Therefore, a risk management strategy can involve different hedging relationships whose risk management objectives relate to executing that overall risk management strategy.

[10] In practice, futures are marked-to-market on a daily basis with adjustments made to the margin account if necessary. However, for illustration purposes, changes in margin deposit are ignored unless losses on the futures contracts that result require topping up of the margin deposit.

[11] Please refer to the section entitled *Accounting for time value of options* for a discussion on the accounting treatment for the fluctuations in the fair value of the time value that is recognized in other comprehensive income.

[12] For transaction related hedged item, the time value that is accumulated in other comprehensive income is either (1) adjusted against the initial cost or other carrying amount of the asset or the liability if the hedged transaction results in the recognition of a non-financial asset or liability or (2) reclassified to profit or loss in the same period or periods during which the hedged cash flows affect the profit or loss. In other words, the treatment is similar to that of the effective portion of the hedging instrument that is accumulated in the cash flow hedge reserve. For time period related item, the amount accumulated in other comprehensive income is amortized to the profit or loss on a systematic and rational basis. (Paragraph 6.5.15 of IFRS 9)

[13] IFRS 9 allows the hedge of the foreign currency risk of a firm commitment to be designated either as a cash flow hedge or a fair value hedge.

[14] A floating interest rate is an interest rate that is tied to a specific interest rate index such as the prime rate, the London Interbank Offer Rate (LIBOR) or a treasury bill rate.

[15] For further reading, refer to Trombley, M.A., 2003, *Accounting for Derivatives and Hedging*, McGraw-Hill.

[16] If the fair value is not zero, a yield adjustment is required to the interest rate.

[17] Financial Accounting Standards Board, 2008. Statement of Financial Accounting Standard 133 *Accounting for Derivative Instruments and Hedging Activities* paragraph 114, Norwalk, CT.

[18] Please refer to Appendix 8D in Chapter 8 for a discussion on the differences between the direct and step-by-step method of consolidation and its impact on disposals of foreign operations.

[19] The IFRS states this is determined after taking into account any rebalancing of the hedging relationship, if applicable.

[20] However, the IFRS clarifies that the replacement or rollover of a hedging instrument into another hedging instrument is not an expiration or termination if the replacement or rollover is part of, and is consistent with, the entity's documented risk management objective (Paragraph B6.5.6 of IFRS 9).

[21] IFRS 9 clarifies that a hedged future cash flow that is no longer highly probable to occur may still be expected to occur.

[22] When an entity performs a basis adjustment, the entity removes the amount accumulated in the cash flow hedge reserve and include it directly in the initial cost or other carrying amount of the asset or the liability.

[23] IFRS 9 does not prohibit the application of hedge accounting to foreign currency monetary items.

[24] The problems of Freddie Mac and Fannie Mae with respect to the accounting for hedging derivatives have been well documented in the financial press in the US. Both companies had to restate their financial statements at huge expenses.

CHAPTER

11

Accounting for Taxes on Income

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand the concept of temporary differences, and tax base of an asset and tax base of a liability;
- **LO2** Understand the concept of deferred tax as a liability and an asset;
- **LO3** Apply the balance sheet approach in determining the balances of a deferred tax liability and a deferred tax asset;
- **LO4** Check the tax expense analytically;
- **LO5** Apply appropriate principles to situations of tax losses;
- **LO6** Present appropriately the tax effects of other comprehensive income or items taken directly to equity;
- **LO7** Present analysis of tax expense and reconciliation with accounting income in footnote disclosures; and
- **LO8** Analyze special issues in the accounting for tax consequences in certain complex transactions.

INTRODUCTION

Main Principle in IAS 12

Accounting for taxes on income is also known as interperiod tax allocation or deferred tax accounting. IAS 12 *Income Taxes* adopts *a balance sheet liability approach* toward determining the tax liabilities that a company should accrue for. *The main principle in IAS 12 is that reporting entities should recognize the future tax consequences of each asset or liability in the same period when the underlying asset or liability is recognized*. An entity recognizes an asset or a liability when it expects to recover the carrying amount of the asset or settle the carrying amount of the liability in a future period. If the recovery or settlement leads to probable higher or lower taxes in future periods, the entity should recognize these future tax consequences as a deferred tax liability or a deferred tax asset at the same time when the underlying asset or liability is recognized.

Accounting for taxes is motivated by the need to align the recognition of tax liabilities or assets with the recognition of the underlying asset or liability. Consider what an "asset" or a "liability" is. An asset is a bundle of future economic benefits, whereas a liability is an expectation of outflows of future economic benefits. When the economic benefits flow in from realization of an asset or flow out on the settlement of a liability, it is likely that the realization or settlement may result in an increase or a decrease in tax payable. Under IAS 12, a reporting entity should accrue for the expected increase or reduction in tax payable arising from the recovery of an existing asset or the settlement of a liability in the period when the existing asset or liability is recognized.

Accounting for taxes embodies the *principle of accrual accounting*. The Board's *Conceptual Framework for Financial Reporting* Chapter 1 OB17 requires a reporting entity to recognize the effects of transactions and events in the period in which the transactions and events occur and not the period when payments are made. Hence, the objective of IAS 12 is to ensure that tax liabilities on the balance sheet reflect both current tax liabilities and deferred tax liabilities arising from past transactions or events.

Consider an asset scenario. If an investment that is carried at fair value is subject to capital gains tax[1] when sold, a future tax will be imposed on the "realized" profit. Since the reporting entity recognizes an "unrealized profit" or a fair value adjustment (either as net income or other comprehensive income) in the current financial statements, the entity should also recognize the future tax on the unrealized profit in the form of a "deferred tax liability" on the current statement of financial position. The deferred tax liability arises either from an expense in current income or a decrease in other comprehensive income, in the opposite direction of the change in the fair value of the investment. For example, an investment that is carried at fair value through profit or loss generates a fair value increase of $1,000,000. If the profit is eventually taxable, the investor has to recognize tax expense at the same time when the increase in fair value is recognized.

In the context of IAS 12, the "unrealized profit" that is currently recognized in comprehensive income, but will be taxed in a future period, is called a "taxable temporary difference." *Taxable temporary differences* are future taxable income from currently recognized assets or liabilities that will arise when those assets or liabilities are recovered or settled. *Deferred tax liabilities are the taxes on taxable temporary differences*.

$$\text{Deferred tax liabilities} = \text{Tax rate} \times \text{Taxable temporary differences at reporting date.}$$

IAS 12 requires the reporting entity to recognize the deferred tax liability relating to the realization of the profit from an asset in the same period when the profit is recognized. However, if an entity carries an investment at an amortized cost, and the tax authorities also apply the amortized cost basis in determining income tax, the entity need not recognize any deferred tax liability as there are no taxable temporary differences that will lead to higher future tax payable when the asset's carrying amount is recovered.

Conversely, a liability that is recognized on the statement of financial position may give rise to future tax deductions, or future tax savings, when the liability is settled. *The future tax deductions should be recognized in the same period when the underlying liability is recognized*. For example, a provision for warranty may not be recognized for tax purposes until the actual claims are made. The provision for warranty on the statement of financial position, when settled in the form of claims (for example, refunds or rectification works), gives rise to future tax deductions. From an accounting standpoint, the future tax deductions should be recognized on the current statement of financial position at the same time as the provision for warranty. It is not timely to recognize the tax savings at the point of submission of the tax returns. The future tax savings arising from the settlement of the provision account is recognized as a "deferred tax asset" at the same time when the provision is recognized. IAS 12 refers to the future tax deductions as "deductible temporary differences". *Deferred tax assets are taxes on deductible temporary differences*.

$$\text{Deferred tax assets} = \text{Tax rate} \times \text{Deductible temporary differences at reporting date.}$$

In this section, we introduce the concept of taxable temporary differences and deductible temporary differences. Let us consider the formal definitions in IAS 12 paragraph 5:

> Temporary differences are differences between the carrying amount of an asset or a liability in the statement of financial position and its tax base. Temporary differences may be either:
>
> (a) taxable temporary differences, which are temporary differences that will result in taxable amounts in determining taxable profit (tax loss) of future periods when the carrying amount of the asset or liability is recovered or settled; or
>
> (b) deductible temporary differences, which are temporary differences that will result in amounts that are deductible in determining taxable profit (tax loss) of future periods when the carrying amount of the asset or liability is recovered or settled.

Under IAS 12:

$$\text{Temporary differences} = \begin{matrix}\text{Carrying amount} \\ \text{of an asset or a liability}\end{matrix} - \begin{matrix}\text{Tax base of that} \\ \text{asset or a liability}\end{matrix}$$

IAS 12 requires a reporting entity to determine the "tax base" of an asset or a liability. The concept of a tax base is explained later when we discuss the methodology of IAS 12. At this point, it suffices to understand the meaning of the terms used in IAS 12, as shown in Table 11.1.

TABLE 11.1 IAS 12 terminology

IAS 12 terminology	What it means
Taxable temporary differences	Future taxable income
Deductible temporary differences	Future deductions or reductions in future taxable income
Deferred tax liability	Future tax payable arising from taxable temporary differences
Deferred tax asset	Reductions in future tax payable arising from deductible temporary differences

DEFERRED TAX AS A LIABILITY AND AN ASSET

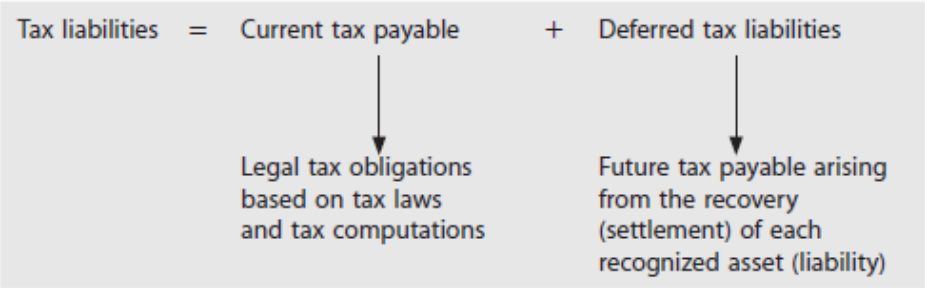
Consider the definition of a "liability" as given in the *Conceptual Framework for Financial Reporting* (referred to as the Framework in subsequent discussion). Paragraph 4.4(b) of Chapter 4 of the Framework states that:

> … a liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits.

From the above definition,

1. A liability must be a present obligation arising from past events. In the context of taxation, *the obligating past event is implicitly the recognition of an asset whose future recovery gives rise to a current or future taxable profit*. A liability for tax arises in the period when a company earns and recognizes a profit rather than in the period when that profit is subject to legal tax. The legal tax imposition is a consequence of the profit event, and is not itself the original cause of the liability. Hence, in the earlier example of an investment carried at fair value, the recognition of the fair value adjustment is the "past event" that necessitates the recognition of the deferred tax liability. The obligating event is not the imposition of legal tax obligation when the fair value adjustment is realized.
2. The obligation must give rise to an outflow of future economic benefits. Taxable temporary differences give rise to future cash outflows. The future tax payable, which is an outflow that can be predicted with certainty, should be recognized in the accounting period when the profit and asset are recognized.

Both current and future tax liabilities that arise from current profit must be recognized in the current period. IAS 12 applies the *accrual concept* in its purest form by requiring reporting entities to recognize tax consequences, in full, of recognized assets and liabilities. Legal tax payable is accrued for as "current tax liabilities" while future tax payable is accrued for as "deferred tax liabilities". Legal tax payable is the obligation to the tax authorities for the amount that is payable under tax regulation. Both current and deferred tax liabilities have to be recognized on the statement of financial position. However, deferred tax liabilities may be classified under "non-current liabilities" if they do not meet the criteria for "current liabilities" in paragraph 60 of IAS 1 *Presentation of Financial Statements*. Generally, if deferred tax liabilities do not lead to an outflow of resources within the next operating cycle, or 12 months after the reporting date, they fall under the "non-current liabilities" classification.



Deferred taxes can also take the form of an asset. Consider the definition of an asset in paragraph 4.4(a) of the Framework:

> … an asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity.

An asset embodies the following characteristics:

1. *It is a resource that is controlled by the enterprise as a result of past events*. In the example of the provision for warranties when tax deductions are granted only in the year of actual claims, an implicit tax asset arises from the recognized liability. There is schism between accounting and tax recognition in this scenario. Accounting recognition is on an accrual basis; but in this scenario, the tax deduction is on a cash basis. Although the provision for warranties will lead to an outflow of benefits, the outflow will be mitigated by a tax deduction that is claimable on the actual warranty expenditures in future periods. The future deductibility of the recognized provision gives rise to a deferred tax asset in the current period. The recognition of the provision for warranty and the related warranty expense is the past event that justifies the recognition of the related tax asset.
2. *Future economic benefits are expected to flow to the enterprise*. The future tax deductions result in an inflow of future economic benefits in the form of a lower tax payable; in most cases, these can be predicted with certainty. However, there are certain types of deferred tax assets whose realization may not be clearly predictable. For example, a company may incur losses that can be carried forward to offset future tax payable. The tax losses are a type of deferred tax asset, but their realization is contingent on the existence of future taxable income. IAS 12 has special considerations for the recognition of such deferred tax assets. Accounting for tax losses are dealt with in a later section of this chapter.

Generally, recognized assets give rise to deferred tax liabilities (although it is possible that they may give rise to deferred tax assets), and recognized liabilities (with exceptions) give rise to deferred tax assets. Deferred tax liabilities and deferred tax assets are not set off against the individual assets and liabilities that give rise to them. Instead, deferred tax liabilities and deferred tax assets are shown in aggregate on the statement of financial position. An entity should offset deferred tax assets and deferred tax liabilities if, and only if, the following conditions are met (IAS 12 paragraph 74):

(a) The entity has a legally enforceable right to set off current tax assets against current tax liabilities; and

(b) The deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authority on either:

  (i) the same taxable entity; or

  (ii) different taxable entities that intend to either settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

It is mandatory to offset deferred tax assets against deferred tax liabilities if the conditions are met. Thus, a company that is subject to tax in a single tax regime will have to offset deferred tax assets against deferred tax liabilities and report a net balance (either a liability or an asset) on the statement of financial position.

TAX AS AN EXPENSE

In the previous section, we note that IAS 12 requires reporting companies to recognize tax liabilities and tax assets on the statement of financial position at the time when the underlying assets and liabilities are recognized. In doing so, *the tax expense in the income statement bears a correlation with accounting (not taxable) income. The matching principle requires expenses to be recognized in the period when the underlying revenues or gains are recognized*. An underlying concept in IAS 12 is the notion that tax is an expense and, hence, should be matched with accounting income. The underlying assumptions to the concept are as follows:

page 984

1. *Tax is a necessary expenditure that has to be incurred to produce goods and services*. As a minimum, a company needs to pay taxes to be able to continue doing business. Further, tax revenues are used to develop national infrastructure and public goods that are necessary and conducive for profit-making activities. A cause-and-effect relationship exists between tax and corporate profitability.
2. Tax is thus a productive expenditure and not an involuntary distribution of income.

However, critics of this view argue that the consumption of public goods is not in direct proportion to the amount of taxes paid. The existence of "free-riding" by non-tax paying individuals or corporations, or those who pay less tax, supports the opposing view that tax is an involuntary distribution of income and not a payment for productive goods and services.

In reality, tax probably falls in between the two extremes of being an involuntary distribution of income and a payment for the consumption of productive goods and services. Tax dollars are probably both a payment for the private consumption of goods and services as well as a subsidization of other constituents' consumption of the same goods and services. The allocation between private and public consumption of the benefits of tax dollars is indeed a contentious issue.

Nonetheless, the underlying view in IAS 12 and other major accounting standards (for example, the United States' Statement of Financial Accounting Standard 109 *Accounting for Income Taxes*[2]) upholds the view that tax is an expense and not a distribution of income. As such, tax expense is subject to the matching principle in the same way as other expenses.

There are a number of differences between the requirements of legal taxation and accounting standards. Tax regulation is motivated by fiscal, political, economic, and social policies, whereas accounting standards are governed by the twin objectives of providing relevant and representationally faithful information. Tax regulation incorporates various incentives and disincentives to encourage or discourage certain corporate or individual actions to fulfill particular socioeconomic objectives. Legal tax requirements may shift tax obligations to or from a future period. For example, a government may want to encourage capital spending and grant full capital allowances or tax depreciation in the first year of acquiring plant and machinery. Accelerated capital allowances may result in a company not having to pay taxes in the first year, but higher taxes in subsequent years when the capital allowances are depleted. However, for accounting purposes, the acquiring company capitalizes and depreciates the asset over its useful life to show the unexpired economic benefits at the reporting date. IAS 12 requires tax expense to correlate with accounting profit rather than taxable income.

The difference between tax depreciation and accounting depreciation is known as a "timing difference". Essentially, both types of depreciation differ only with respect as to when the depreciation is recognized. Both methods are different ways of allocating the original cost of an asset. It is analogous to eating a cake. Whether one eats a cake at one go or in small slices, the absolute size of the cake remains the same. Similarly would be a better usage here; the sum of tax depreciation will be equal to the sum of accounting depreciation, and both will be equal to the original cost of the asset. IAS 12 paragraph 17 defines timing differences as follows:

> Some temporary differences arise when income or expense is included in accounting profit in one period but is included in taxable profit in a different period. Such temporary differences are often described as timing differences.

A "timing difference" is a sub-set of "temporary differences". There may be other sources of temporary differences that arise outside of the income statement, but timing differences are, in most cases, a major source of

temporary differences.

Temporary differences also arise from the use of different bases of revenue recognition in tax and accounting. Financial statements are prepared on the basis of accrual accounting, whereas tax regulation may apply the cash or completed contract methods in certain situations. When tax regulation applies the completed contract method and accounting applies the percentage of completion method, the reporting company will have zero current tax in the first year when revenue is accrued, and full taxes in the subsequent year when it is received. In such an instance, the payment for tax is "deferred" because of legal tax requirements. However, from an accounting standpoint, tax expense should be recognized in the first year when income is earned. Applying the matching principle, tax that arises from profit generation should be recognized in the year when the profit arises.

Table 11.2 provides examples of timing differences that may arise in a tax computation.

TABLE 11.2 Examples of timing differences

Type of temporary difference	Directions	Examples
Taxable temporary difference	• Taxable revenue < Accounting revenue	• Completed contracts < Percentage of completion
	• Tax deduction > Accounting expense	• Capital allowances > Depreciation
Deductible temporary difference	• Taxable revenue > Accounting revenue	• Unearned revenue, taxed at point of collection
	• Tax deduction < Accounting expense	• Accrued expenses, deductible only when paid

Arithmetically, we show how the recognition of temporary differences achieves the matching of tax expense with accounting income.

For simplicity, we assume:

1. That the only differences between accounting income and taxable income are timing differences;
2. No changes in tax rates;
3. Only taxable temporary differences exist (that is, Accounting income > Taxable income).

$$\begin{aligned}\text{Tax expense} &= \begin{pmatrix}\text{Current}\\ \text{tax rate}\end{pmatrix} \times \begin{pmatrix}\text{Taxable}\\ \text{income}\end{pmatrix} + \begin{pmatrix}\text{Current}\\ \text{tax rate}\end{pmatrix} \times \begin{pmatrix}\text{Change in}\\ \text{temporary differences}\end{pmatrix}\\ &= \text{Current tax rate} \times \begin{pmatrix}\text{Taxable}\\ \text{income}\end{pmatrix} + \begin{pmatrix}\text{Change in}\\ \text{temporary differences}\end{pmatrix}\\ &= \text{Current tax rate} \times \begin{pmatrix}\text{Taxable}\\ \text{income}\end{pmatrix} + \begin{pmatrix}\text{Accounting}\\ \text{income}\end{pmatrix} - \begin{pmatrix}\text{Taxable}\\ \text{income}\end{pmatrix}\\ &= \text{Current tax rate} \times \text{Accounting income}\end{aligned}$$

By accounting for the change in temporary differences, the effects of the temporary reduction in taxable income are cancelled out. This equation explains the logic behind the methodology. However, there are other items that may cause an imperfect match between tax expense and accounting income, which are discussed below.

Some differences between taxable and accounting income are not "timing" in nature. These differences arise because of the *differences in the definition* of what revenue or expense is in the realm of tax and accounting. For example, tax-exempt interest income is not an income item under tax regulation. In this instance, the receiving company of tax-exempt interest income should not recognize tax on the interest income. Conversely, an expense item may not be deductible. Examples include disallowed entertainment expenses, fines and penalties, and donations made to institutions that are not of public character, etc. These expenses are not recognized as deductions by tax authorities. The tax-exempt income and disallowed items are called *"permanent differences"*. It is artificial and wrong to match tax expense with these income items as they have no tax consequences in the current or future periods.

page 986

Although the current version of IAS 12 makes no reference to permanent differences, it is useful to note the identity of these differences as they assist in the reconciliation of the tax expense to accounting income, which is discussed in a later section. Conceptually, it is useful to understand the impact that permanent differences have on tax expense.

Permanent differences[3] are income items that are included in one domain (tax or accounting) but *never* in the other. They arise because of different definitions of revenue and expense in accounting and tax. Unlike temporary differences, these differences originate in one period but do not reverse in subsequent periods. Permanent differences have no effect on future taxes. Their effects on tax expense are shown in Table 11.3.

TABLE 11.3 Permanent differences

Item	Types of permanent differences	Examples	Effect on tax expense
1	Non-deductible accounting expense	Fines and penalties, disallowed donations and entertainment expenses	Increase
2	Non-taxable accounting revenue	Tax-exempt interest	Decrease
3	Tax-deductible item that has no accounting expense equivalent	Double- or further-deduction of expenses, investment tax credit	Decrease
4	Taxable revenue that has no accounting revenue equivalent	Imputed revenue on non-arm's-length transactions	Increase

Applying the matching principle and assuming no changes in the tax rate, tax expense should correlate with accounting income, except for permanently disallowed or permanently exempted income items that have no tax effects.

$$\text{Tax expense} = \text{Current tax rate} \times \left(\begin{matrix}\text{Accounting} \\ \text{income}\end{matrix} + \begin{matrix}\text{Permanently} \\ \text{disallowed items}\end{matrix} - \begin{matrix}\text{Permanently exempted} \\ \text{income items}\end{matrix} \right)$$

The sections above explain the motivations for accounting for taxes on income as required by IAS 12. In the subsequent sections, we explain and illustrate the methodology of deferred tax accounting. However, an understanding of the conceptual arguments for deferred tax accounting, as explained in the sections above, will facilitate an understanding of the steps involved in the methodology. Table 11.4 summarizes the conceptual arguments discussed in the earlier sections.

page 987

TABLE 11.4 Summary of conceptual arguments for deferred tax accounting

Conceptual review: What is the justification for deferred tax accounting?

Statement of financial position perspective

1. Deferred tax liabilities and deferred tax assets meet the definition of liabilities and assets in the Framework with the occurrence of past events that have an impact on future cash flows. Deferred tax liabilities and deferred tax assets should be recognized at the same time as the underlying assets and liabilities.
2. Accounting for deferred tax liabilities and deferred tax assets is consistent with the accrual principle. Deferred tax liability provides timely information by accruing for future cash outflows and inflows that will arise upon the recovery or settlement of recognized assets and liabilities. Recognizing taxes only when they are legally due leads to information.
3. Deferred tax liabilities arise from taxable temporary differences that lead to predictable and reliably measurable future cash outflows. By definition, temporary differences reverse and should be accrued for in the current period.

Income statement perspective

1. Tax is an "expense" and a necessary cost of doing business that has to be matched to income in the same way as other expenses. Expenses are recognized in the period in which they are incurred to generate income.
2. Tax expense should have a predictable correlation with accounting income.

THE ASSET AND LIABILITY APPROACH FOR DETERMINING DEFERRED TAX LIABILITIES

To achieve the main objective in IAS 12, it is necessary to use an *asset and liability approach* to determine the balances that have to be reported in the current statement of financial position. *The tax expense in the income statement is then determined as a residual*. The statement of financial position comprises two types of tax obligations: *current tax liabilities and deferred tax liabilities*.

$$\text{Tax obligations on the statement of financial position} = \text{Current tax liabilities (assets)} + \text{Deferred tax liabilities (assets)}$$

Current tax liabilities (assets) are the amounts of income taxes payable (recoverable) in respect of the taxable profit (tax loss) for the period. Current tax liabilities on the statement of financial position are reduced by subsequent payments. At the end of each financial year, a company should recognize unpaid balances of current tax for current and prior periods. If the amount paid exceeds the legal obligations under tax laws, the excess should be recognized as a tax refundable asset (IAS 12:12).

Normally, a tax computation is prepared, which begins with accounting profit and subsequently adjusted to arrive at taxable profit. The adjustments are of two types:

1. *Current temporary differences,* or more specifically, the timing differences, between accounting profit and taxable profit.
2. *Permanent differences* that arise from the different definitions of revenue and expenses between accounting and tax.

An example of a tax computation is shown in Illustrations 11.1 and 11.2. We can summarize the relationship between current tax liabilities and accounting profit as follows:

$$\text{Current tax liabilities} = \text{Current tax rate} \times \text{Taxable income}$$

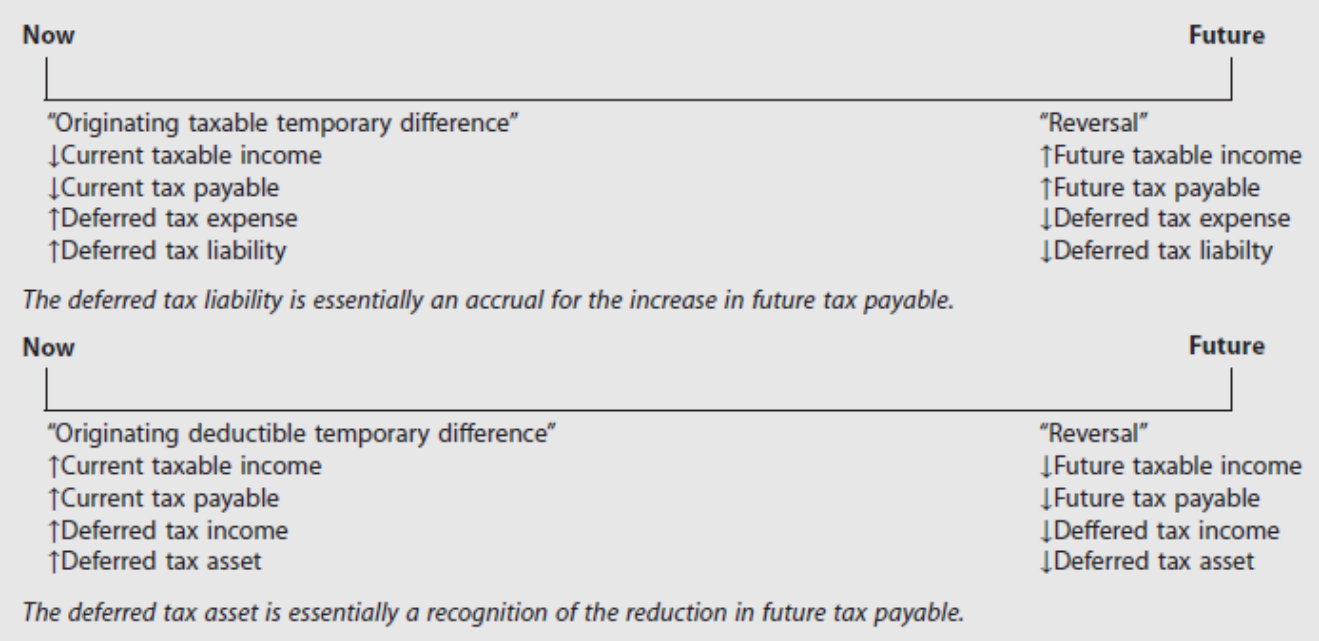
$$\text{Taxable income} = \left(\begin{array}{c}\text{Accounting profit}\\ \text{before tax}\end{array} \pm \begin{array}{c}\text{Current temporary}\\ \text{differences}\end{array} \pm \begin{array}{c}\text{Permanent}\\ \text{differences}\end{array}\right)$$

By definition, current temporary differences will *originate* in one period and *reverse* in another. For example, accelerated tax depreciation will result in lower tax payable currently and higher tax payable in future periods. In later periods, the asset generates revenues but no tax depreciation can be claimed. Over time, the "differences" will cancel out. Temporary differences may be one of the two:

1. *Taxable temporary differences*
   (a) These reduce current tax payable in the year of origination but will increase future tax payable on reversal.
   (b) The tax effects of taxable temporary differences should be recognized as deferred tax liabilities.
2. *Deductible temporary differences*
   (a) These increase current tax payable on origination but will reduce future tax payable on reversal.
   (b) The tax effects of deductible temporary differences should be recognized as reductions in deferred tax liabilities or an increase in deferred tax assets.

It is useful to present the interaction (the "toggle") between current tax payable and deferred tax liabilities as shown in Figure 11.1.

FIGURE 11.1 Interaction between current tax payable and deferred tax liabilities



DETERMINING THE CUMULATIVE TAXABLE TEMPORARY DIFFERENCES OF ASSETS

IAS 12 emphasizes the "balance sheet liability approach" in determining the year-end deferred tax liability balance. The balance sheet liability approach determines the extent of the deferred tax liability or deferred tax asset arising from each recognized asset or liability on the statement of financial position. *The balance sheet liability approach is a future-oriented approach, which requires an assessment of the future tax consequences of each asset or liability*.

Essentially, the balance sheet liability approach requires comparing the amount of an asset or liability recognized on the statement of financial position with its "tax base". IAS 12 defines the "tax base of an asset or liability as the amount attributed to that asset or liability for tax purposes" (IAS 12:5).

Tax Base of an Asset

Tax base of an asset and a liability are defined more specifically below. However, conceptually, we may think of the tax base as the amounts recognized on the hypothetical tax statement of financial position. Although the tax statement of financial position is not a formal statement, it is possible to draw up such a statement of financial position using tax rules as bases of measurement for assets and liabilities. The difference between the carrying amounts of assets and liabilities recognized on the accounting statement of financial position and the tax statement of financial position constitutes taxable or deductible temporary differences.

Table 11.5 shows examples of assets shown on the tax statement of financial position.

TABLE 11.5 Assets on tax statement of financial position

Tax rules (Examples)	Tax statement of financial position	Taxable temporary difference (TTD)
Cost of asset is deductible over tax useful lives or tax amortization periods	Balance is the unexpired cost or written down value, after applying tax depreciation	TTD = Net book value – Tax written down value
Asset is not deductible for tax purposes	Balance is zero (non-existent asset)	TTD = Carrying amount – Zero tax base However, this temporary difference arises from initial recognition and is ignored under IAS 12 paragraph 15, which is discussed later in the chapter.
Cost of asset is fully deductible when sold or consumed or received	Balance is the cost (entire amount is unexpired cost)	TTD = Carrying amount – Cost

A simple way of approaching the problem is to determine if the tax rules are synchronous and consistent with accounting rules. If tax measurement is synchronous and aligned with accounting measurement in the same period, there will be no temporary differences. However, IAS 12 provides more specific definitions of "tax base of an asset," which are shown in Figures 11.2 and 11.3.

FIGURE 11.2 Procedural diagram to determine deferred tax liabilities[5]

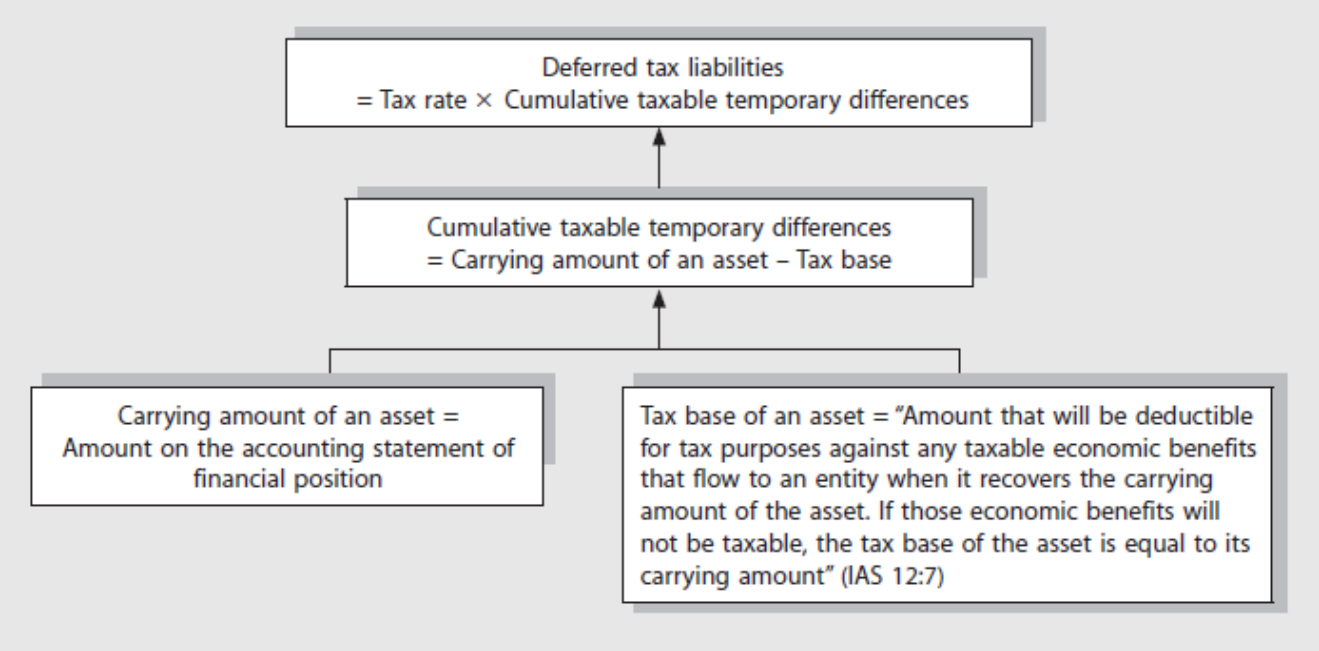
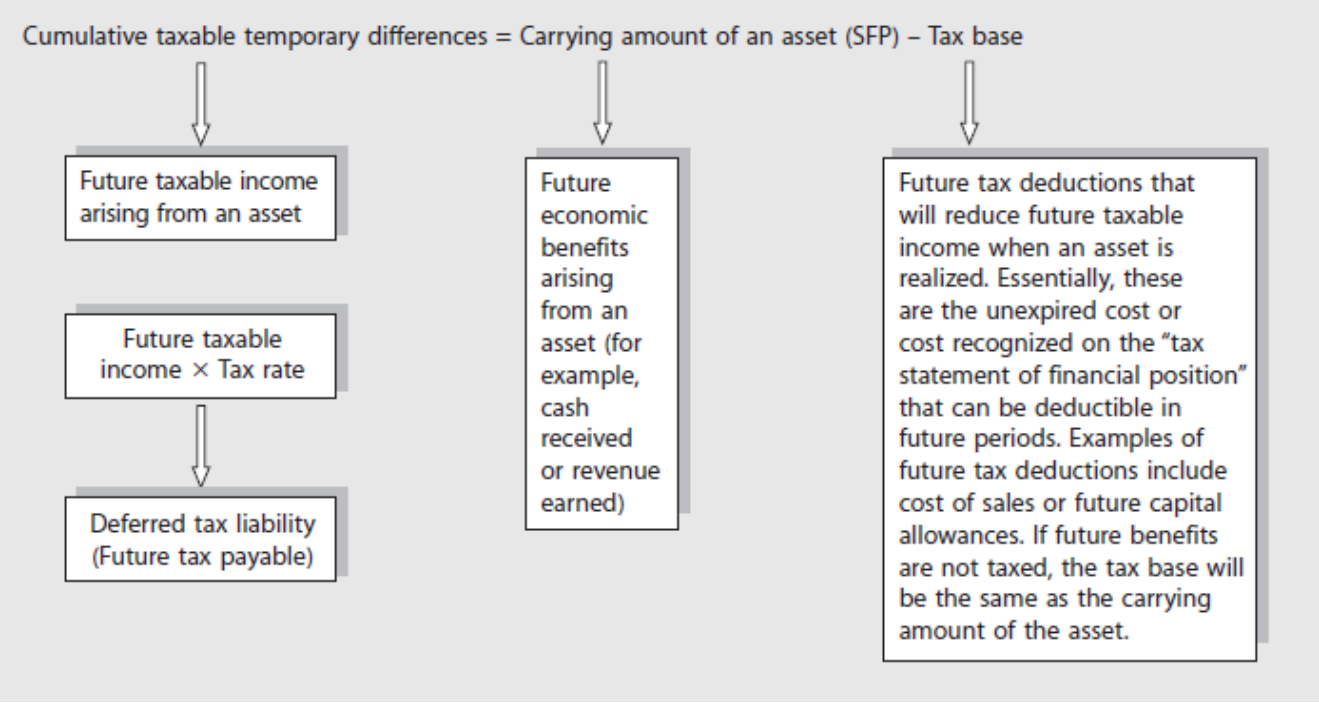


FIGURE 11.3 A conceptual interpretation of taxable temporary differences, carrying amount and tax base of an asset



The more specific definitions of tax base are used to analyze the examples and illustrations in this chapter. However, it is helpful to have a conceptual model of the "tax statement of financial position" to anchor the understanding of the procedures underlying IAS 12. To summarize, taxable or deductible temporary differences can be determined in any of the following ways:[4]

1. Comparing the carrying amounts of an asset or liability on the accounting statement of financial position and its tax equivalent. The difference between the amounts on the two statements of financial position gives rise to a taxable or deductible temporary difference.
2. Considering the application of the specific definitions of "tax base" as provided by IAS 12 paragraphs 7 and 8. The difference between the carrying amount on the accounting statement of financial position and the "tax base" is either a taxable or a deductible difference.
3. Considering if tax recognition of expense or revenue is synchronous with accounting recognition. There are no temporary differences if the tax and accounting recognition are aligned in the same period. However, this approach requires corroboration from the other two approaches when recognition is asynchronous. For example, if tax depreciation and accounting depreciation are asynchronous, the tax written down value on the tax statement of financial position or the tax base will need to be calculated.

A taxable temporary difference is simply the future taxable income arising from the recovery of an asset. We determine the amount of taxable temporary difference by comparing the carrying amount on the accounting statement of financial position and the "tax base". As explained earlier, the tax base is the carrying amount on the hypothetical "tax statement of financial position". However, another explanation of the tax base is that it is the future deductions that are deductible against the taxable benefits from the asset. The carrying amount of an asset represents the future benefits that arise from an asset. However, the future benefits may be reduced by future tax deductions allowable on the recovery of the asset. The future tax deductions that offset the future benefits from an asset is the tax base. Since the tax base is also the amount recognized on the "tax statement of financial position", it is the unexpired cost or the cost recognized for tax purposes that can be used to offset future taxable income arising from the asset. The relationship between carrying amount and tax base is shown in Figure 11.3.

page 991

The concept of a tax base is important in determining the deferred tax liabilities and deferred tax assets on the statement of financial position. The tax base of an asset can be one of two categories, as shown in Table 11.6.

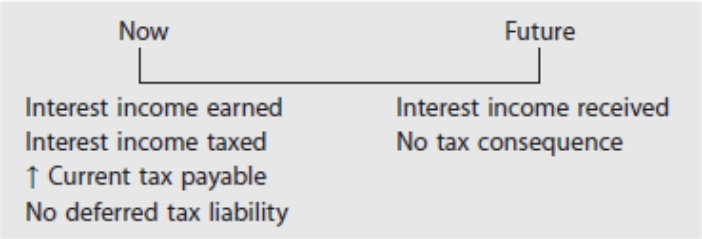
TABLE 11.6 Tax base of an asset

Future taxability	Tax base
Where the proceeds from the realization or recovery of the asset is taxable	Tax base is the amount that will be deductible against the taxable economic benefits from the recovery of the asset
Where the proceeds from the realization or recovery of the asset is tax-exempt	Tax base is equal to the carrying amount

Consider an example of interest receivable (an asset) that is carried on the statement of financial position at $100,000. There are three possible tax scenarios:

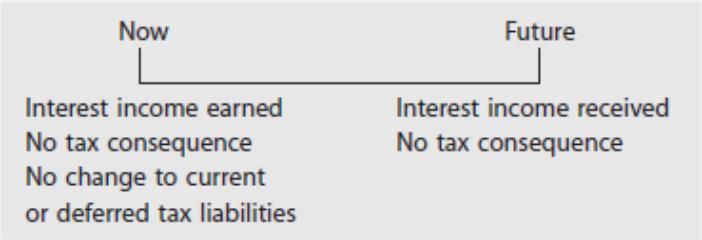
1. *Interest income is taxed during the period when it is earned*. In this situation, the entity does not have to pay taxes again when the interest income is received. The proceeds from the realization of interest receivable is effectively "tax-exempt" as the income is already taxed in the period when earned. The tax base is thus equal to the carrying amount of $100,000, which leads to a zero taxable temporary difference. Another simple way of looking at this situation is to note that the tax treatment and the accounting recognition are synchronous and there is no temporary difference between the two. We present the explanations in a diagram below.

page 992



2. *Interest income is taxed during the period when it is received*. Since the interest income is to be taxed in a future period, there will be no implicit tax deduction and the tax base or future tax deductions is equal to zero. The taxable temporary difference is $100,000. There is a misalignment between tax and accounting recognition, giving rise to a taxable temporary difference. The following diagram presents the analysis:

3. *Interest income is tax-exempt*. In this scenario, the tax base is equal to the carrying amount as the future receipt of interest income is "tax-exempt". Hence, the taxable temporary difference is zero as the recovery is offset by the tax exemption. Consider the following pictorial analysis:



More examples on tax base of an asset follow in Examples 11.1 to 11.4.

Example 11.1: Balance Sheet Liability Approach (Fixed Assets)

An equipment costing $30,000 was purchased on 1 January 20x0. Capital allowances (tax depreciation) were fully claimed in 20x0, but accounting depreciation was computed on a straight line basis over three years.

Balance sheet liability approach

	20x0	20x1	20x2
Cost	$30,000	$30,000	$30,000
Accumulated depreciation	(10,000)	(20,000)	(30,000)
Carrying amount = Net book value (1)	$20,000	$10,000	$ 0
Cost	$30,000	$30,000	$30,000
Capital allowances claimed to date	(30,000)	(30,000)	(30,000)

Tax base = Tax written down value (2)	$ 0	$ 0	$ 0
Cumulative taxable temporary differences = (1) – (2)	$20,000	$10,000	$ 0

Explanatory note:

In Example 11.1, the carrying amount of the equipment as at end of 20x0 indicates that the equipment is likely to produce future revenues (that is, goods and services) of at least $20,000. Hence, this amount is a measure of probable taxable revenues arising from the use of the asset. However, all capital allowances have been utilized; hence, the unexpired capital allowances available at the end of 20x0 to offset future taxable revenue is zero. Tax base is zero because there are no future capital allowances available to offset future taxable revenue arising from the asset. Thus, the equipment gives rise to cumulative taxable temporary differences, i.e., future taxable income of $20,000 at the end of 20x0 and $10,000 at the end of 20x1.

Example 11.2: Balance Sheet Liability Approach (Contract Assets)

For accounting purposes, revenue on a long-term project was recognized over a three-year period as the performance obligation was satisfied over time. Cost of construction was recognized in the profit or loss as incurred. The related contract asset account is shown below. Billings were raised at the end of the project in 20x2. Assume that for tax purposes, profit was taxed only at the completion date at the end of 20x2.

Balance sheet liability approach

	20x0	20x1	20x2*
Revenue from construction contracts	$1,250,000	$1,875,000	$2,500,000
Construction costs	1,000,000	1,500,000	2,000,000
Construction profits	$ 250,000	$ 375,000	$ 500,000
Contract asset (carrying value)	$1,250,000	$3,125,000	$5,625,000*
Tax base	1,000,000	2,500,000	4,500,000*
Cumulative temporary differences	$ 250,000	$ 625,000	$1,125,000

* The contract asset account should reflect a zero balance at the end of 20x2 as the long term project has been completed and fully billed. Similarly, the tax base balance should reflect a zero balance as the total deductions would have been claimed in connection with the full construction revenue being brought to tax in 20x2. However, for purposes of illustration, we show the full contract asset and tax base balance just prior to closure.

Explanatory note:

In Example 11.2, the contract asset account gives rise to future taxable income of $1,250,000 as at the end of 20x0. However, the tax authorities allow the entity to claim deductions in respect of the construction costs incurred for the project. Hence, the tax base of the contract asset (i.e. future deductions that will be allowed) amounts to $1,000,000. Accordingly, the net taxable income that arises from the project is $250,000. Although no legal tax is payable at the end of 20x0, the tax will be payable on completion in 20x2 and should be provided for as a deferred tax liability in 20x0. Hence, there is a taxable temporary difference or future taxable income of $250,000 at the end of 20x0. At the end of 20x2, the project is completed (the figures shown above are just prior to the closure of the contract asset account). At this point, the revenue arising from the entire contract ($5,625,000) are subject to legal tax as the project is completed. The total allowable deductions in the form of the total construction costs incurred (i.e. the tax base) is $4,500,000. At the end of 20x2, the contract asset balance and tax base will be zero as the entity would have fully billed the customer and the deductions would have been fully claimed.

Example 11.3A: Balance Sheet Liability Approach (Investments at Fair Value; Profit from Sale of Investments Is subject to Tax)

The reporting entity classifies bonds as fair value through other comprehensive income investments and measures them at fair value at the end of each year. Assume that the proceeds from the sale of bonds are subject to tax.

Balance sheet liability approach

	20x0	20x1	20x2
Investment at cost	$1,000,000	$1,000,000	$1,000,000
Fair value adjustment	200,000	(50,000)	300,000
Carrying amount: investment at fair value	$1,200,000	$ 950,000	$1,300,000
Tax base	(1,000,000)	(1,000,000)	(1,000,000)
Cumulative taxable (deductible) temporary differences	$ 200,000	$ (50,000)	$ 300,000

Explanatory note:

The original cost of the investment is $1,000,000, and the investment is carried at fair value at the end of each year. The carrying amount, which is measured at fair value, is a proxy for the future sales proceeds. The tax base is the cost of the asset, which will be deductible against the proceeds from sale. Hence, the difference between the carrying amount and the tax base is the estimated profit on sale, which is taxable at a future date. A taxable temporary difference arises at the end of 20x0 and 20x2. However, at the end of 20x1, a deductible temporary difference arises because the expected sales proceeds are lower than the cost of the asset.

Example 11.3B: Balance Sheet Liability Approach (Investments at Fair Value; Profit from Sale of Investments Is not Subject to Tax)

This scenario is the same as that in Example 11.3A except that profit from sale is not subject to tax.

Balance sheet liability approach

	20x0	20x1	20x2
Investment at cost	$1,000,000	$1,000,000	$1,000,000
Fair value adjustment	200,000	(50,000)	300,000
Carrying amount: investment at fair value	$1,200,000	$ 950,000	$1,300,000
Tax base	(1,200,000)	(950,000)	(1,300,000)
Cumulative taxable temporary differences	$ 0	$ 0	$ 0

Explanatory note:

If profit from the sale of the investment is tax-exempt, the tax base is the carrying amount of the investment. There is an implicit deduction in this scenario because the revenue from the recovery of the investment is not subject to tax. Cumulative taxable temporary difference is zero.

Example 11.4: Balance Sheet Liability Approach (Inventory Is Carried at the Lower of Cost and Net Realizable Value; Profit from the Sale of Inventory Is Taxable)

The profit from the sale of inventory is subject to tax. The inventory balances at the end of each year are as follows:

Balance sheet liability approach

	20x0	20x1	20x2
Inventory at lower of cost and net realizable value	$1,200,000	$2,000,000	$2,600,000
Tax base	(1,200,000)	(2,000,000)	(2,600,000)
Cumulative taxable temporary differences	$ 0	$ 0	$ 0

Explanatory note:

The profit on sale of inventory is subject to tax. However, inventory at the reporting date is carried at the lower of cost and net realizable value at the end of each year. There is no "profit" element included in the carrying amount of the inventory. The carrying amount represents the minimum expected benefits from future sales. Since only profit is taxable, tax authorities will allow the cost of the asset as a deduction against sales proceeds. Hence the future deduction is the cost of the inventory. Since the tax base is also equal to the carrying amount, the cumulative taxable temporary difference is zero.

In Example 11.4, the cumulative taxable temporary difference is zero in all the years. However, the reason for the zero balance is not the tax-exempt nature of the future income, but the fact that the carrying amount is at cost and is equal to the tax base.

DETERMINING THE CUMULATIVE DEDUCTIBLE TEMPORARY DIFFERENCES OF LIABILITIES

Deductible temporary differences arise from the difference between the carrying amount of a liability (or an asset) and its tax base. In this section, we focus on deductible temporary differences that arise from liabilities. Deductible temporary differences that arise from liabilities are the future tax deductions that will arise when the liability is settled or when unearned revenue is earned. In Figures 11.4 and 11.5, the deductible temporary difference is determined by comparing the recognized amount of a liability and its tax base.

FIGURE 11.4 Procedural diagram to determine deferred tax assets[6]

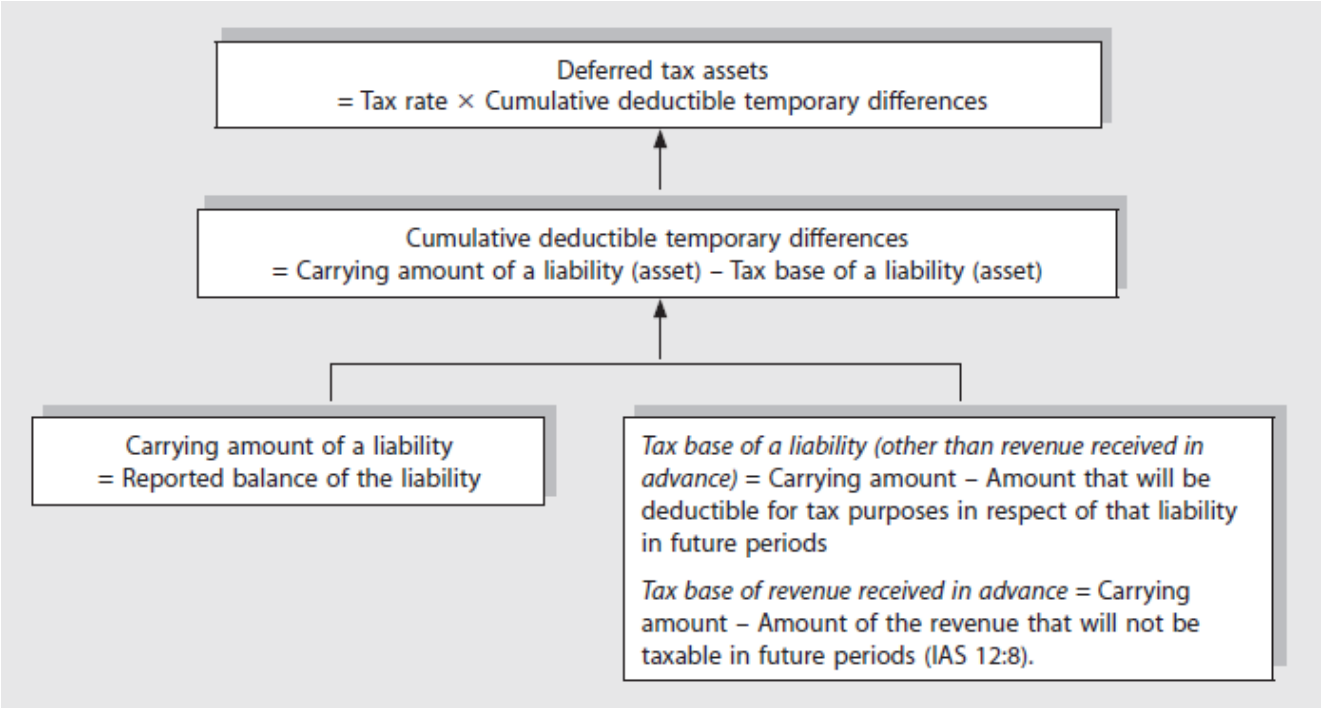
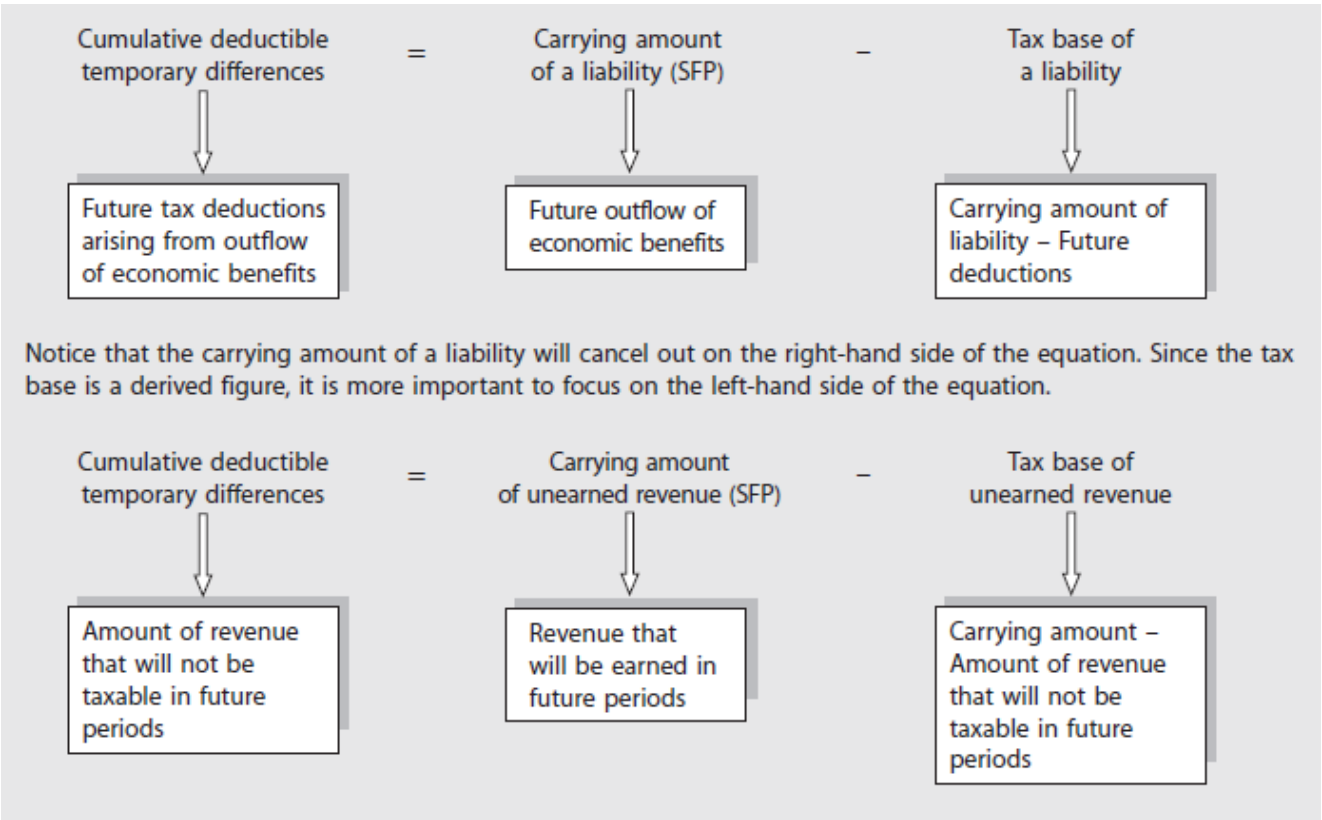


FIGURE 11.5 Significance of the tax base of a liability and unearned revenue



IAS 12 defines the tax base of a liability in residual terms. The tax base is the difference between the carrying amount of the liability and the amount that will be deductible for tax purposes or the amount of unearned revenue that will not be taxable in future periods. Practically, we can determine the cumulative deductible temporary differences without determining the tax base. Figure 11.5 shows that the tax base is a consequential figure and is not used to determine the cumulative deductible temporary differences.

Tax Base of a Liability

Generally, there are two types of liabilities. One is in the form of a future payable while the other is unearned revenue. Table 11.8 shows the tax base for each. Table 11.7 shows examples of balances on the hypothetical tax statement of financial position using tax rules to measure liabilities.

TABLE 11.7 Liabilities on tax statement of financial position

Tax rules	Tax statement of financial position	Deductible temporary difference (DTD)
Expenses are not recognized for tax purposes (that is, not deductible in any period)	Tax accruals or liabilities arising from expenses are not recognized: zero balance	A DTD arises because the carrying amount is greater than the tax base. However, the DTD is not recognized under IAS 12 paragraph 15 because it arises from the initial recognition of a liability. Paragraph 15 is discussed later in the chapter.
Expenses are recognized for tax purposes in the period when incurred (that is, synchronous with accounting recognition)	Tax accruals or liabilities are the same as the carrying amount of accounting accruals or liabilities	No DTD arises because the carrying amount is the same as the tax base.
Expenses are recognized for tax purposes in the period when paid in a future period (that is, not synchronous with accounting recognition)	Tax accruals or liabilities are a zero balance	A DTD arises because the accounting and tax recognition of expenses are asynchronous. The DTD will reverse when the expenses are paid off in a subsequent period.

TABLE 11.8 Tax base of a liability

Types of liabilities	Tax base
Future payable	Tax base = Carrying amount of the liability – Future deduction arising when the liability is settled
Unearned revenue	Tax base = Carrying amount of unearned revenue – Revenue that will not be taxable in future periods

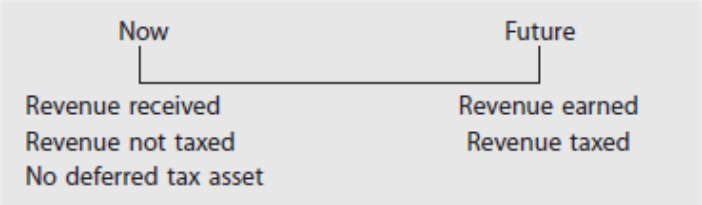
The analysis of a tax statement of financial position applies also to unearned revenue, a type of liability. Unearned revenue is discussed in a form of an example, as shown below. A more specific definition of tax base of a liability as provided in IAS 12 is shown in Figures 11.4 and 11.5.

Consider an example of unearned revenue that is received in advance of $100,000. Unearned revenue is a liability, since cash is received before services are rendered or goods delivered. There are three possible tax scenarios:

1. *Revenue is taxed during the period when it is earned*. In this situation, the entity will have to pay taxes in future when revenue is earned. There is no deductible temporary difference as the tax recognition is the same as the accounting recognition. Since revenue that will not be taxable in future periods is zero, applying the

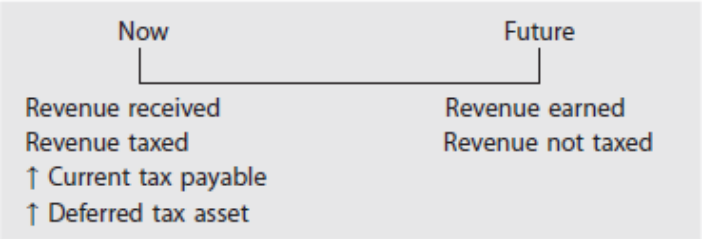
definition above leads to a tax base of $100,000, that is, $100,000 – $0. With a tax base of $100,000, the deductible temporary difference is zero. The tax treatment is aligned or synchronous with accounting recognition and no deductible temporary difference arises. On the tax statement of financial position, the revenue is deemed unearned from a tax purposes, and shows the same accrual as on the accounting statement of financial position.

page 998

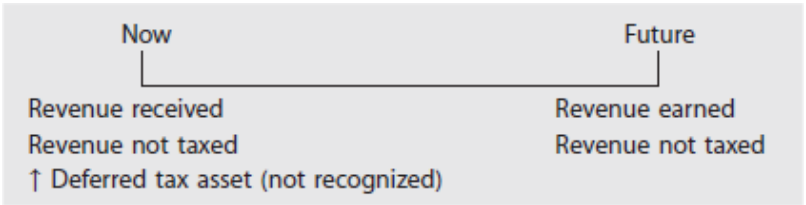


2. *Revenue is taxed during the period when it is received*. Since revenue has been taxed before it is earned, it will not be taxable in future periods. Effectively, the tax paid during the period of receipt is prepaid tax since revenue has not yet been earned. The tax base is zero, which is the carrying amount of $100,000 less revenue that will not be taxable in future periods of $100,000. On the tax statement of financial position, the unearned revenue is considered earned and, hence, there is no amount shown at the end of the period. As the tax and accounting treatment are asynchronous, a deductible temporary difference arises.

page 999



3. *Revenue is tax-exempt*. In this scenario, the revenue that will not be taxable in future periods is $100,000; hence, the tax base = $100,000 – $100,000 = $0. On the tax statement of financial position, no unearned revenue amount is shown as the amount is not recognized as revenue or tax purposes. Theoretically, a deductible temporary difference arises because the carrying amount of $100,000 exceeds the tax base balance of zero. However, IAS 12 paragraph 24 prohibits the recognition of this deductible temporary difference because it arises on initial recognition of the liability. Further discussion of this prohibition follows later in the chapter.



The above analysis shows that tax base of a liability or unearned revenue is a derived figure and is the difference between the carrying amount and the future deductions or future tax exemption. Effectively, the future deductions or future tax exemptions are the deductible temporary differences. Figure 11.5 shows the redundancy of the tax base of a liability or unearned revenue. Since the objective of deferred tax calculations is to determine the cumulative deductible temporary differences, it suffices to determine the future tax deductions in future periods when the carrying amount of the liability is settled.

Examples 11.5 to 11.7 illustrate the balance sheet liability approach with respect to liabilities.

Example 11.5: Balance Sheet Liability Approach (Provision for Warranties; Deductible on the Basis of Claims Made in the Year of Payment)

As at the end of 20x0, provision for warranties was $1,000. The amount represents future claims for rectification works.

Balance sheet liability approach

	20x0
Carrying amount	$1,000
Tax base	$1,000 – $1,000 = $0
Cumulative deductible temporary differences	$1,000

Explanatory note:

The provision for warranties was not recognized for tax purposes in 20x0. However, the actual claims made in 20x1, and subsequently, are tax-deductible. Since the provision is a measure of future claims, there is a cumulative deductible temporary difference of $1,000 as at the end of 20x0, leading to a deferred tax asset.

Example 11.6: Balance Sheet Liability Approach (Provision for Loss; Not Deductible in Any Period)

The provision for litigation loss is $200,000. The loss is not deductible for tax purposes in the current or future periods.

Balance sheet liability approach

	20x0	
Carrying amount		$200,000
Tax base	$200,000 – Nil	= $200,000
Cumulative deductible temporary differences		Nil

Explanatory note:

The settlement of the provision will not lead to a decrease in future taxable income. No tax benefits arise when the provision is settled. Hence, the cumulative deductible temporary difference or future deduction arising from the provision is zero.

Example 11.7: Balance Sheet Liability Approach (Accrued Expense; Deductible in the Year of Expensing)

A reporting entity accrues expenses of $100,000 in 20x0, which was paid off in 20x1. The expenses are deductible for tax when the expense is recognized.

Balance sheet liability approach

	20x0	
Carrying amount		$100,000
Tax base	$100,000 – Nil	= $100,000
Cumulative deductible temporary differences		Nil

Explanatory note:

Accounting and tax recognition of the expense are synchronous and there is no temporary difference arising from the accrued expense. The tax base, being a residual is $100,000, which offsets the carrying amount, giving rise to a zero deductible balance.

Special considerations for deductible temporary differences

Unlike deferred tax liabilities that are recognized in full for taxable temporary differences, the recognition of deferred tax assets is conditional on the existence of probable future profits. As deductible temporary differences represent future tax deductibility or future tax exemption, their benefit will arise only if there are profits against which the temporary differences can be utilized. Hence, a more conservative approach is adopted for the recognition of deferred tax assets. Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available to be set off against the deductible temporary differences (IAS 12:24).

If an entity has both reversing taxable temporary differences (future taxable income) and deductible temporary differences (future tax deductions), and these differences relate to the same taxation authority and same taxable entity, the reversing taxable temporary differences serve as taxable income against which the deductible temporary differences will be utilized. For example, if an entity has reversing taxable temporary differences of $5,000,000 and deductible temporary differences of $2,000,000, there is certainty that the deductible temporary differences can be used to offset the future taxable income when the taxable temporary differences "reverse", that is, becomes actual current taxable income. However, this setting off is possible only if the deductible and taxable temporary differences reverse (a) in the same future period, that is, they crystallize into actual tax deductions and actual taxable income in same future period or (b) in periods in which tax loss from the deferred tax asset can be carried forward or carried back (IAS 12:28). In our example, if one of the conditions is met, a deferred tax asset is recognized for $2,000,000 of deductible temporary differences, as there are sufficient taxable temporary differences to utilize the deductible temporary differences.

What if the amount of taxable temporary differences is lower than the amount of deductible temporary differences? The entity has to consider the sufficiency of probable taxable profit, which will arise in the same period in which the deductible temporary differences will reverse [IAS 12:29(a)]. The taxable profit must relate to the same taxation authority and same taxable entity, and should exclude new taxable profits that arise from the origination of new deductible temporary differences. New deductible temporary differences in future periods increase taxable income in those periods but are themselves in need of future profitability to be utilized. Alternatively, the entity has to consider the availability of future profits from tax planning opportunities [IAS 12:29(b) and 30].

Consider the following example, which shows deductible and taxable temporary differences at the current year-end of 31 December 20x1. The entity is able to estimate profit reliably only for the immediate next year.

Deductible temporary differences as at 31 December 20x1	$600,000
Taxable temporary differences as at 31 December 20x1	$400,000
Expected net income in 20x2	$100,000
Reversal of taxable temporary differences from 20x1	$200,000
Origination of new deductible temporary differences in 20x2	$700,000
Origination of new taxable temporary differences in 20x2	($100,000)
Expected taxable income in 20x2 before set off	$900,000

In this situation, deductible temporary differences of $600,000 from 20x1 is able to set off future taxable profit of $200,000 arising from expected net income of $100,000, reversal of taxable temporary differences from 20x1 of $200,000, and origination of new taxable temporary differences of $100,000. The origination of new deductible temporary differences of $700,000 increases taxable income but itself creates new deferred tax assets that needs to be assessed for their recoverability. Accordingly, this $700,000 is excluded in the assessment. Hence, a deferred tax asset is recognized by multiplying current tax rate to deductible temporary differences of $200,000 as at 31 December 20x1.

In our example, we assume that there is no restriction on the sources of taxable profits against which the deductions from the deferred tax assets can be used against. Hence, the deductible temporary differences can be combined in our analysis. However, if tax laws restrict the utilization of certain deductions to certain sources of income, it is necessary to segment the deductible temporary differences into appropriate groupings and consider their deductibility against the specific income category.[7] For example, in some jurisdictions, capital losses may be offset only against capital gains and ordinary losses against ordinary gains, with different taxation rates for capital gains and ordinary gains.

Estimation of future taxable profit is a highly subjective process. Hence, evidence to support the estimates are important. In considering probable future taxable profit, an entity may include estimates of recovery of assets at more than their carrying amount if there is sufficient evidence to support the estimates.[8]

Thus far, we considered deferred tax assets that arise from deductible temporary differences. Deferred tax assets may also arise from tax losses or unused tax credits. The recoverability of these deferred tax assets is in greater doubt because of likely history of losses that make the prediction of future profitability more difficult. Tax losses are discussed in a later section of this chapter.

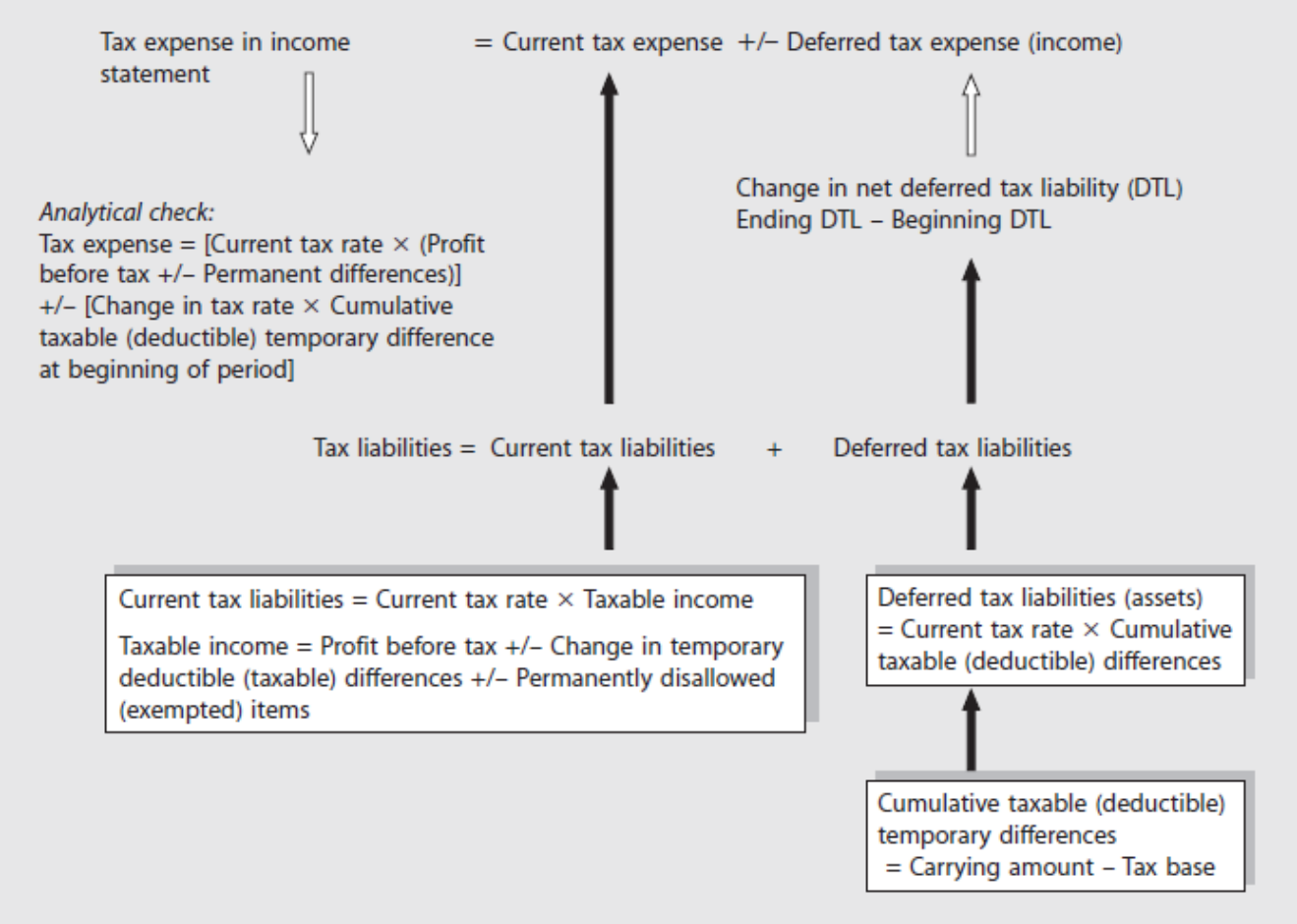
OVERVIEW OF THE APPLICATION OF IAS 12

With a conceptual understanding of the elements that determine tax expense, it is useful to summarize, at this time, the main procedures that are needed to determine the tax expense on the income statement and the tax liabilities on the statement of financial position.

1. Under the *balance sheet liability approach*, the first step is to determine the tax liabilities at the end of each reporting period. The two liabilities are the *current tax payable* and the *deferred tax liabilities*. A tax computation is required to determine the current tax payable that is due to the tax authorities. Deferred tax liabilities (or deferred tax assets) are determined using the balance sheet liability approach, which requires the deduction of the "tax base" from the carrying amount of an asset (or liability).
2. Having worked out the current and deferred tax liabilities on the statement of financial position, the next step is to determine the *income statement effects*. *Current tax expense* and *current tax payable* are determined from the tax computation. Further, any adjustment to prior years' tax computations must also be included in the current income tax expense. *Deferred tax expense*, on the other hand, is the change in the net deferred tax liability balances (that is net of deferred tax assets) at the end of two reporting periods. The change in the net deferred tax liability includes the tax effects of current temporary differences as well as the effect of any changes in tax rates on the beginning cumulative taxable (deductible) temporary differences.

Figure 11.6 summarizes the procedures.

FIGURE 11.6 Summary of procedures for accounting for income taxes (balance sheet liability approach with residual taken to the income statement)



Accounting for Taxes in a Nutshell

Tax expense is thus made up of current tax and future tax on current accounting income. Current tax is legal tax due to government based on "taxable" and not "accounting" income. Hence, some components of accounting income may not be currently taxable but will give rise to future tax (for example, unremitted profit). There is a temporary tax reduction, but this will be "reversed" when the profit becomes taxable at the occurrence of a future event (for example, when the profit is remitted). Future tax is a tax that will arise when the temporary differences "reverse". We have to accrue for the future tax payable at the point when the income is generated because it is a matter of time before the tax will be a reality. Thus, tax expense must correlate with accounting profit, regardless of whether it is legally due or not.

page 1003

RECONCILIATION AND ANALYTICAL CHECK ON TAX EXPENSE IN THE INCOME STATEMENT

As shown in Figure 11.6, tax expense in the income statement is determined as a result of the changes in the net deferred tax balances as at the beginning and the end of the reporting period and the current tax expense, corrected for adjustments to prior-year estimates of the current tax payable.

Since the tax expense is determined largely as a "residual", an analytical check is useful to ensure that the reported tax expense is reasonable. Further, IAS 12 paragraph 81c requires a reconciliation between tax expense (income) and accounting profit (loss) in one or both of the following forms:

1. *Tax expense reconciliation:* a numerical reconciliation between the reported tax expense (income) and the theoretical tax expense (that is, accounting profit multiplied by the current tax rate) with disclosure of the basis on which the tax rate(s) is (are) determined; or
2. *Tax rate reconciliation:* numerical reconciliation between the average effective tax rate (the implicit tax rate in the tax expense determined by dividing accounting profit by the tax expense) and the applicable (for example, current) tax rate, disclosing also the basis on which the applicable tax rate is determined.

page 1004

In an earlier section of the chapter, we explain that IAS 12 upholds the notion of tax as an expense that has a *predictable relationship* with accounting income.

$$\text{Tax expense} = \text{Current tax rate} \times \text{Profit before tax}$$

Alternatively, the average effective tax rate should be equal to the current tax rate:

$$\text{Effective tax rate} = \frac{\text{Tax expense}}{\text{Profit before tax}} = \text{Current tax rate}$$

However, these simple relationships do not often hold because there are a number of special items that cause the relationship between tax expense and accounting income to be less than perfectly correlated. These items are as follows:

1. *Permanently disallowed items or tax-exempt income* that have no tax consequences and that cause a higher or lower than expected tax expense respectively.
2. *Changes in tax rates* that affect tax expense as shown in Table 11.9. Given that deferred tax liabilities (assets) are future tax payable (recoverable), changes in tax rates will impact the future cash flows arising from the deferred tax liabilities (assets). Consider the requirement in IAS 12 paragraph 47:

   > Deferred tax assets and liabilities shall be measured at the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

   The changes in the liability (asset) balance caused by the change in tax rates are included in the "residual" that is charged to the income statement. In the analytical check, this change has to be specifically included as a reconciliation item.
3. The *utilization of previously unrecognized deferred tax assets* causes a mismatch in the relationship between tax expense and accounting income (loss). Deferred tax assets arise from deductible temporary differences, unutilized tax losses, or unutilized tax credits. Unutilized tax losses are not recognized in the year of the loss if subsequent profits are deemed less than probable. Many tax regimes allow a company to offset losses against subsequent profits. These "carry forward" losses are, effectively, deductible temporary differences, because they have the ability to reduce future taxable income. However, the problem lies in the probability of these future profits. If a company is already incurring losses in the current period, its future probability may be uncertain. Deferred tax assets from the loss carry forward are not recognized when subsequent profits are deemed less than probable. Instead, the tax benefit from the loss is recognized only when the loss is actually utilized. Tax expense in the year of the loss is not reduced because of the accounting loss. In a subsequent year when a profit is made, the previously unrecognized tax losses are utilized to reduce taxable income. Tax expense in the year of the recognition of the loss falls, in spite of an accounting profit. In such a scenario, there is a misalignment between the tax expense and accounting loss in the year of origination and in the year of recognition of the loss. This is discussed in greater depth later in the chapter.
4. The *use of different tax rates*, particularly in a group of companies with foreign subsidiaries operating in different tax regimes, may cause the average effective tax rate of the group to be different from the statutory tax rate of the parent company.

TABLE 11.9 Impact of tax rates on beginning deferred tax liability (asset)

Changes in tax rates	Impact on deferred tax liability at the beginning of the year	Impact on deferred tax asset at the beginning of the year
Increase	• Liability at the beginning of the year has to be adjusted upwards • Tax expense increases	• Asset at the beginning of the year has to be adjusted upwards • Tax expense decreases
Decrease	• Liability at the beginning of the year has to be adjusted downwards • Tax expense decreases	• Asset at the beginning of the year has to be adjusted downwards • Tax expense increases

For simplicity, we assume a single tax regime without any tax loss. We derive below an analytical check on tax expense that correlates tax expense with accounting income, after incorporating the effects of the above items that cause a mismatch between the two.

$$\begin{aligned}&\text{Tax expense in the income statement}\\&= \text{Tax rate} \times \left[\begin{matrix}\text{Profit}\\ \text{before tax}\end{matrix} +/- \begin{matrix}\text{Permanently disallowed items}\\ \text{(tax-exempt income)}\end{matrix}\right]\\&+/- \left[\begin{matrix}\text{Increase (decrease)}\\ \text{in tax rate}\end{matrix} \times \begin{matrix}\text{Cumulative taxable (deductible) temporary differences}\\ \text{at the beginning of the reporting period}\end{matrix}\right]\end{aligned}$$

Terms in brackets indicate a negative number. If we include tax loss that is recognized in a year subsequent to origination, the analytical check will be expanded as follows:

$$\begin{aligned}&\text{Tax expense in the income statement}\\&= \text{Tax rate} \times \left[\begin{matrix}\text{Profit (loss)}\\ \text{before tax}\end{matrix} +/- \begin{matrix}\text{Permanently disallowed items}\\ \text{(tax-exempt income)}\end{matrix}\right]\\&+/- \left[\begin{matrix}\text{Increase (decrease)}\\ \text{in tax rate}\end{matrix} \times \begin{matrix}\text{Cumulative taxable (deductible) temporary differences}\\ \text{at the beginning of the reporting period}\end{matrix}\right]\\&+/- \left[\text{Tax rate} \times \begin{matrix}\text{Unrecognized loss in the year}\\ \text{of origination/(recognized loss)}\end{matrix}\right]\end{aligned}$$

The analytical check is useful in other ways as it identifies certain components that are required for special disclosures. IAS 12 paragraph 80 requires disclosure of the components of tax expense (income).

To illustrate the footnote disclosure, let's assume that Parent Co has foreign subsidiaries, some of which are loss-making. The statutory tax rate of Parent Co is 20%. The consolidated pre-tax profit is $30,000,000. A reader would expect the tax expense to be close to $6,000,000. However, the reported tax expense is $5,086,000. IAS 12 requires Parent Co to explain the difference between the expected tax expense and the reported tax expense. Parent Co would provide the reconciliation in its footnote to the financial statements, an example of which is shown below.

Statutory tax rate as applied to pre-tax profit	$6,000,000
Add/(less) tax effects of:	
Expenses that are permanently disallowed	46,000

Tax-exempt income	(600,000)
Utilization of tax losses brought forward from prior periods	(800,000)
Unrecognized tax losses in the current period	340,000
Differences between foreign tax rates and the statutory tax rate	100,000
Reported tax expense	$5,086,000

IAS 12 permits the reconciliation of tax expense to be shown in one of two ways. It can either be shown as a numerical reconciliation of dollar values (as in the above example) or a reconciliation of the statutory and effective tax rates. If we were to re-cast the reconciliation in the form of tax rates, the reconciliation will be as follows:

Statutory tax rate	20%	
Add/(less) tax effects of:		
Expenses that are permanently disallowed	0.15%	$46,000/$30,000,000
Tax-exempt income	(2.00%)	$600,000/$30,000,000
Utilization of tax losses brought forward from prior periods	(2.67%)	$800,000/$30,000,000
Unrecognized tax losses in the current period	1.13%	$340,000/$30,000,000
Differences between foreign tax rates and the statutory tax rate	0.34%	$100,000/$30,000,000
Effective tax rate	16.95%	$5,086,000/$30,000,000

From the footnote disclosure, we can make a few observations:

1. Parent Co and its subsidiaries are tax efficient. The group's effective tax rate is approximately 17% ($5,086,000 as a percentage of $30,000,000) and this rate compares favorably to the statutory tax rate of 20%.
2. The group enjoys large tax exemptions on income.
3. The group has a conservative view towards tax losses and recognizes tax losses only when the losses are actually utilized.
4. The tax rates of the foreign subsidiaries are higher than Parent Co's statutory tax rate of 20%.

Appendix 11C include a real-life example of disclosures on tax expense reconciliation.

Illustrations 11.1 and 11.2 are comprehensive examples of the application of the procedures to determine tax expense and illustration of the analytical check on tax expense.

ILLUSTRATION 11.1 Multi-period deferred tax and analytical check on tax expense

The following information pertains to Company XYZ (Year 1–20x1):

(a) The following items were not deductible for tax purposes: expenses relating to deemed capital transactions of $15,000, and repairs and renovations of $20,000.

(b) Disallowed expenses relating to entertainment, motor vehicle expenses, and fines amounted to $14,000.

(c) Dividends of $10,000 were tax-exempt.

(d) Expenses of $180,000 in respect of general provisions were disallowed for tax purposes. However, actual claims and utilizations of $129,500 were deductible for tax purposes.

(e) Depreciation for the year was $80,000. Capital allowances claimed amounted to $708,355. Cost of fixed assets was $1,500,000.

(f) Net profit before tax was $4,000,000. Tax rate was 22%. 20x1 was the first year of operations.

Required:

1. Prepare a tax computation to determine the tax payable.
2. Determine the deferred tax liability using the balance sheet liability approach.
3. Perform an analytical check on tax expense.

Company XYZ Tax Computation For Year Ended 31 December 20x1		
Accounting income	$4,000,000	
Add/(less):		
Expenses relating to general provisions	180,000	
Utilization of general provisions	(129,500)	
	$ 50,500	
Depreciation	$ 80,000	
Capital allowances	(708,355)	
	$ (628,355)	
Expenses relating to deemed capital transactions	$ 15,000	$39,000 Permanently disallowed or exempted items
Repairs and renovations	20,000	
Disallowed expenses	14,000	
Tax-exempt dividends	(10,000)	
Taxable income	$3,461,145	
Tax payable at 22%	$ 761,452	

Balance sheet liability approach: Determining the difference between the carrying amount and the tax base

	Carrying amount	Tax base	Cumulative taxable (deductible) temporary difference
Property, plant and equipment ...	Balance = Cost – Accumulated depreciation = $1,500,000 – $80,000 = $1,420,000	Balance = Cost – Capital allowances to date = $1,500,000 – $708,355 = $791,645	$628,355
Provisions	Balance = Provision – Claims = $180,000 – $129,500 = $(50,500)	Nil	(50,500)
Net taxable temporary differences			$577,855

Movement in deferred tax liability

	Balance, 1 January	Increase/(Decrease)	Balance, 31 December
Deferred tax liability	Nil	$127,128	= 22% * $577,855 = $127,128

31 Dec 20x1	Dr Tax expense (I/S)	888,580	
	Cr Tax payable (SFP)		761,452
	Cr Deferred tax liability (SFP)		127,128
	To record current and deferred tax liabilities		

Analytical check:

$$\text{Tax expense} = 22\% \times (\$4{,}000{,}000 + \$39{,}000 \text{ Permanent differences}) = \$888{,}580$$

Consider Illustration 11.1, Year 2 tax computation.

Background information (Year 2–20x2):

(a) Disallowed items included entertainment expenses of $10,000, repairs and renovation of $12,500, and amortization expenses of $14,000.

(b) Interest income on government bonds of $80,000 was tax-exempt.

(c) Depreciation for the year was $80,000 and capital allowances were $15,455.

(d) Expenses relating general provisions were $120,000 while actual claims made against these provisions was $160,000.

(e) Profit for the year ended 31 December 20x2 was $2,500,000. Tax rate was 20% in 20x2 (decreased from 22%). The tax rate change was announced and enacted only during the year ended 31 December 20x2.

Company XYZ Tax Computation For Year Ended 31 December 20x2		
Accounting income	$2,500,000	
Add/(less):		
Expenses relating to general provisions	120,000	
Utilization of general provisions	(160,000)	
	$ (40,000)	
Depreciation	$ 80,000	
Capital allowances	(15,455)	
	$ 64,545	
Entertainment	$ 10,000	(43,500) Permanently disallowed or exempted items
Repairs and renovations	12,500	
Amortization	14,000	
Interest on government bonds	(80,000)	
Taxable income	$2,481,045	
Tax payable at 20%	$ 496,209	

Balance sheet liability approach: Determining the difference between the carrying amount and the tax base

	Carrying amount	Tax base	Cumulative taxable (deductible) temporary difference
Plant and equipment	Net book value, 31 Dec = Net book value, 1 Jan – Current depreciation = $1,420,000 – $80,000 = $1,340,000	Written down value = Balance, 1 Jan – Current capital allowances = $791,645 – $15,455 = $776,190	$563,810
Provisions	Balance, 31 Dec = Balance, 1 Jan + Expense – Claims = $(50,500) + $(120,000) + $160,000 = $(10,500)	Nil	(10,500)
Net taxable temporary differences			$553,310

Movements in deferred tax liability

	Balance, 1 Jan	Increase/(Decrease)	Balance, 31 Dec

Deferred tax liability		$127,128	($16,466)	20% * $553,310 = $110,662

31 Dec 20x2	Dr Tax expense (I/S)	479,743	
	Dr Deferred tax liability (SFP)	16,466	
	Cr Tax payable (SFP)		496,209
	To record the current tax payable and the change in deferred tax liability		

Analytical check:

$$\begin{aligned}\text{Tax expense} &= [20\% \times (\$2{,}500{,}000 - \$43{,}500^{*})] - (2\%^{**} \times \$577{,}855^{***}) \\ &= \$491{,}300 - \$11{,}557 \\ &= \$479{,}743\end{aligned}$$

* Permanently disallowed/tax-exempted items have a net effect of reducing tax expense

** Decrease in tax rate has a decreasing effect on tax expense

*** Cumulative net taxable temporary difference at start of the year

ILLUSTRATION 11.2 Balance sheet liability approach and analytical check on tax expense

Fair Trading commenced operations in 20x1. It recorded a net profit of $2,000,000 for the financial year ended 31 December 20x2 (20x1: $650,000). The following information applies to the tax computation.

(a) Included in the net profit of 20x2 was an amount of $25,000 (20x1: $16,000) of dividend income from an overseas subsidiary. For tax purposes, income earned from foreign sources is taxable only when remitted. The dividend income of $16,000 of 20x1 was received during 20x2. Of the dividend income of $25,000 recognized in 20x2, $7,000 remained as a receivable at year-end.

(b) Also included in the net profit was tax-exempt dividend income (that is recipient of dividends does not have to pay taxes on dividend income) of $50,000 for 20x2 and $25,000 for 20x1.

(c) During 20x1, Fair Trading incurred $30,000 in developing a patent whose useful life began only in 20x2. For accounting purposes, the development costs were capitalized as an intangible asset amortized over a three-year period commencing in 20x2 (assume a full year amortization). However, for tax purposes, the expenditures were deductible as and when incurred.

(d) Depreciation on a straight line basis for 20x2 was $70,000 (20x1: $54,000). However, for tax purposes, capital allowances amounted to $200,000 in 20x2 (20x1: $200,000). Original cost of the asset was $600,000.

(e) Trademarks of $25,000 were capitalized during 20x1 to be amortized over a five-year period. Assume a full year amortization for 20x1. The expenditure was disallowed for tax purposes.

(f) Unrealized exchange gains of $6,000 in 20x2 (20x1: $10,000) were included in net profit. However, they were taxed only on realization. Assume that the gains materialized within the next financial period.

(g) Net profit included fair value gains of securities measured at fair value through profit or loss of $80,000 for 20x2 and $60,000 for 20x1. For tax purposes, the gains are taxed only at the point of sale. Original cost of the investments was $1,000,000. Fair value of the investments as at 31 December 20x2 was $1,140,000 (31 December 20x1: $1,060,000).

(h) Tax rate was 20% in 20x2 (20x1: 23%).

Required:

1. (a) Prepare the tax computations for 20x1 and 20x2.
   (b) Prepare a schedule to show the movements in cumulative temporary differences for 20x1 and 20x2 using the balance sheet liability approach (that is, identify the tax base).
   (c) Prepare a schedule to show the movements in deferred tax liability for 20x1 and 20x2.
2. Prepare journal entries to record the tax expense for 20x1 and 20x2.
3. Perform analytical checks on tax expense for 20x1 and 20x2.

1(a) Tax computation for fair trading

	20x1	20x2
Net profit before tax	$650,000	$2,000,000
Adjustments		
Dividend income	(16,000)	(25,000)
Remitted	0	34,000
TD	$ (16,000)	$ 9,000
Exempt dividend income (PD)	$ (25,000)	$ (50,000)
Amortization of patent	0	10,000
Deduction	(30,000)	0
TD	$ (30,000)	$ 10,000
Depreciation	$ 54,000	$ 70,000
Capital allowances	(200,000)	(200,000)
TD	$(146,000)	$ (130,000)
Disallowed amortization (PD)	$ 5,000	$ 5,000
Exchange gains	(10,000)	(6,000)
Realized gains	0	10,000
TD	$ (10,000)	$ 4,000
Fair value gains (TD)	$ (60,000)	$ (80,000)
Taxable income	$ 368,000	$1,768,000

Tax rate	23%	20%
Tax payable	$ 84,640	$ 353,600

TD = Change in temporary difference; PD = Permanent difference

1(b) Balance sheet liability approach

	20x1	20x2
Dividends receivable		
Carrying amount	$ 16,000	$ 7,000
Tax base	0	0
Taxable temporary difference	$ 16,000	$ 7,000
Development expenditure		
Carrying amount	$ 30,000	$ 20,000
Tax base	0	0
Taxable temporary difference	$ 30,000	$ 20,000
Fixed asset		
Carrying amount	$ 546,000	$ 476,000
Tax base	400,000	200,000
Taxable temporary difference	$ 146,000	$ 276,000
Unrealized exchange gains		
Carrying amount	$ 10,000	$ 6,000
Tax base	0	0
Taxable temporary difference	$ 10,000	$ 6,000
Investments at fair value		
Carrying amount	$1,060,000	$1,140,000
Tax base	1,000,000	1,000,000
Taxable temporary difference	$ 60,000	$ 140,000
Cumulative taxable temporary differences	$ 262,000	$ 449,000

Taxable temporary difference of $15,000 (20x1: $20,000) arising from trademarks are not recognized under IAS 12 paragraph 15 (refer to subsequent section). The table below shows the movements in cumulative taxable temporary differences:

	20x1	20x2
Balance, 1 January	$ 0	$262,000
Change	262,000	187,000
Balance, 31 December	$262,000	$449,000

The change in temporary differences can be substantiated by the temporary differences on the tax computation (items marked "TD").

1(c) Movements in deferred tax liability

	20x1	20x2
Balance, 1 January	$ 0	$60,260
Change	60,260	29,540
Balance, 31 December	$60,260	$89,800

The determination of tax expense is shown below:

	20x1	20x2
Tax payable	$ 84,640	$353,600
Change in deferred tax liability	60,260	29,540
Tax expense	$144,900	$383,140

2 Journal entries

20x1	Dr Tax expense	144,900	
	Cr Deferred tax liability		60,260
	Cr Tax payable		84,640
20x2	Dr Tax expense	383,140	
	Cr Deferred tax liability		29,540
	Cr Tax payable		353,600
	Being tax expense recorded for the respective years		

3 Analytical check on tax expense

	20x1	20x2
Profit before tax (PBT)	$650,000	$2,000,000
Permanent differences (PD)	(20,000)	(45,000)

PBT+/–PD	$630,000	$1,955,000
Tax on PBT after PD	$144,900	$ 391,000
Effect of change in tax rates on beginning deferred tax (Note 1)		(7,860)
Tax expense	$144,900	$ 383,140

Note 1: A 3% reduction in tax rate leads to a reduction in tax expense. Beginning cumulative taxable temporary differences was $262,000. With the reduction in tax rate, future tax payable is reduced and a write-back can be made of the beginning deferred tax liability of $7,860 (that is, 3% × $262,000).

TEMPORARY DIFFERENCES ARISING FROM INITIAL RECOGNITION OF ASSETS AND LIABILITIES

It is theoretically possible for a temporary difference to arise on the first day that an asset or liability is recognized. This situation is possible when part or all of the cost of an asset is not deductible for tax purposes (IAS 12:22). The non-deductibility results in a "permanent difference" as discussed earlier. For example, a company may capitalize certain development expenditures as an intangible asset. If the tax authorities do not allow such expenditures to be deducted from taxable income, the tax base of the intangible asset is zero. The difference between the carrying amount of the intangible asset and the tax base is a temporary taxable difference. This difference exists from Day 1 of the asset's life. Hence, the intangible asset gives rise to a deferred tax asset at initial recognition. However, the initial recognition of a deferred tax liability or deferred tax asset in tandem with the initial recognition of an asset or liability is prohibited by IAS 12 paragraphs 15 and 24.

A deferred tax liability or asset is never recognized from:

1. The initial recognition of goodwill; or
2. The initial recognition of an asset or liability that is:
   (a) Not a business combination; and
   (b) At the time of the transaction, affects neither accounting profit nor taxable profit (or tax loss).

The recognition of goodwill theoretically gives rise to a taxable temporary difference if the goodwill amount is non-deductible for tax purposes (that is, tax base is equal to zero). However, if deferred tax liability is recognized on goodwill, the amount of goodwill has to be re-computed again as goodwill is a residual. This gives rise to a circularity problem in the computation of goodwill. Hence, IAS 12 prohibits the recognition of deferred tax liability from goodwill.

Another prohibition is the deferred tax liability or asset arising from Day 1 of the underlying asset or liability that does not arise from a business combination, and that does not affect either accounting profit or taxable profit at the time of initial recognition. The reason for the prohibition is given in IAS 12 paragraph 22c:

> If the transaction is not a business combination, and affects neither accounting profit nor taxable profit, an entity would, in the absence of the exemption provided by paragraphs 15 and 24, recognize the resulting deferred tax liability or asset and adjust the carrying amount of the asset or liability by the same amount. Such adjustments would make the financial statements less transparent. Therefore, this Standard does not permit an entity to recognize the resulting deferred tax liability or asset, either on initial recognition or subsequently … Furthermore, an entity does not recognize subsequent changes in the unrecognized deferred tax liability or asset as the asset is depreciated.

The reason in IAS 12 paragraph 22c can be better understood with Example 11.8.

Example 11.8: Non-deductible Expenditures on an Intangible Asset

Development expenditures of $300,000 were capitalized on 1 January 20x0 and amortized over a three-year period commencing 1 January 20x0. The expenditure was not deductible for tax purposes. Assume a tax rate of 20%.

Balance sheet liability approach

	1 January 20x0	31 December 20x0
Intangible asset	$300,000	$300,000
Accumulated amortization	0	(100,000)
Carrying amount	$300,000	$200,000
Tax base	0	0
Cumulative taxable temporary difference	$300,000	$200,000
Deferred tax liability	$ 60,000	$ 40,000

Without the prohibition in IAS 12, the deferred tax liability had to be recognized at 1 January 20x0 as follows:

Dr Intangible asset	60,000	
Cr Deferred tax liability		60,000

Initial recognition of deferred tax liability

The deferred tax liability account is "created" by a direct debit to the intangible asset. The deferred tax liability arises from the intangible asset, which at initial recognition, affects neither accounting profit nor taxable income. The debit entry to create the deferred tax liability account is not taken to the income statement but to the asset account. By adjusting the deferred tax expense to the carrying amount of the intangible asset, the deferred tax liability is deemed as part of the asset cost.

The adjustment of the deferred tax expense to the carrying amount of an asset or liability potentially makes the financial statements "less transparent" (IAS 12:22). The capitalization of the initial amount of deferred tax liability (as opposed to expensing) potentially increases the asset balance and is controversial. The capitalization of tax expense in asset cost on initial recognition implies that the limited outlay on the asset goes beyond actual expenditures. The tax burden arising from the non-deductibility of the actual expenditures is included in the cost of the asset. However, it is also wrong to expense off the initial amount to the income statement as the "creation" of the asset does not arise from the income statement. A misalignment will result. With the current prohibition, any amount arising from the initial recognition of an asset or liability is ignored. It is necessary to note that IAS 12 was reviewed in 2008, and the prohibition of the recognition of deferred tax liability and deferred tax asset was proposed to be removed in future versions. However, the short-term convergence project[9] was abandoned and no changes were made to IAS 12.

The prohibition does not apply to initial recognition of an asset or liability arising from a business combination. These are the fair value adjustments arising from an acquisition of a subsidiary, as discussed in Chapter 4 of this book. Fair value adjustments in a business combination give rise to deferred tax assets or liabilities.

ASSETS CARRIED AT FAIR VALUE

Assets carried at fair value may give rise to taxable or deductible temporary differences if the tax base of revalued assets remain at cost. IAS 12 paragraph 20 requires the deferred tax liability or asset to be recognized even if:

1. The entity does not intend to dispose of the asset. In such a scenario, the fair value adjustments will be realized through use rather than disposal; or
2. The entity does not have to pay capital gains tax on the proceeds on disposal but will have to do so in the future, if the proceeds are reinvested in similar assets, which will generate taxable profit from use or ultimate sale.

Hence, IAS 12 assumes a long-term perspective of the taxability of the future benefits of an asset. Even if the sale of an existing revalued asset does not give rise to immediate capital gains tax, an entity has to consider the taxability arising from the reinvestment of the proceeds in similar assets.

However, IAS 12 sets the basis of recovery for two types of assets:

1. A non-depreciable asset (that is, freehold land) measured using the revaluation model is deemed to be recovered through sale. The deferred tax liability or deferred tax asset on a non-depreciable asset will reflect the tax consequences of recovery through sale. IAS 12 notes that tax rates may differ depending on whether an asset is recovered through sale or use. The reporting entity should use the tax rate and the tax base that are consistent with the expected manner of recovery or settlement (IAS 12:51A). Hence, if the tax laws require capital gains to be taxed, the capital gains tax rate will apply to taxable (or deductible) temporary differences arising from the revaluation surplus (or deficit) of the non-depreciable asset (IAS 12:51B).
2. An investment property measured using the fair value model of IAS 40 *Investment Property* is deemed, under a rebuttable presumption, to be recovered through sale. Unless the presumption is rebutted, the capital gains tax rate (if this applies in the reporting entity's tax jurisdiction) will apply to the fair value gains or losses that are taken to the income statement. The presumption is rebutted if the business model for holding the investment property is to consume substantially all the benefits of the property through time rather than through sale (IAS 12:51C).

Illustration 11.3 demonstrates the deferred tax impact on assets carried at fair value.

ILLUSTRATION 11.3 Accounting for deferred tax on revalued property, plant and equipment which is expected to be recovered through use

On 1 April 20x18, Company Jadestone bought a piece of machinery amounting to $100,000. The expected useful life of the machinery is 10 years. Residual value is estimated to be zero. Under the company's accounting policy, the machinery is accounted for using the revaluation model under IAS 16 Property, *Plant and Equipment.* Accordingly, the machinery is carried at a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated depreciation and impairment losses. Depreciation is carried out on a straight line basis over its remaining useful life. On 1 April 20x20, a revaluation exercise was performed and the machinery was revalued to $150,000.

In the determination of income tax payable, Company Jadestone is eligible to claim capital allowances (i.e. tax depreciation) on the machinery. The tax useful life is 5 years and capital allowances are claimed on a straight line basis over 5 years. Upon the disposal of the machinery, the tax authorities will allow a deduction to the extent of the excess of cost over the capital allowances previously claimed. No tax is imposed on proceeds in excess of cost of the asset, i.e. no capital gains tax. The tax authorities do not allow any adjustment to be made to the tax base of the machinery on the revaluation of the asset.

Company Jadestone expects to recover the carrying value of the machinery through use both before and after the revaluation. The tax rate applicable for recovery through use basis is 20%. Assume in this illustration, Company Jadestone does not have the accounting policy of transferring the revaluation surplus amounting to the difference between depreciation based on the revalued carrying amount of the machinery and depreciation based on the original cost from the asset revaluation reserve to retained earnings in accordance with paragraph 41 of IAS 16.

Calculate the deferred tax impact at the date of revaluation as well as on 31 March 20x22 and prepare the accounting entries.

Analysis

Compute the accounting depreciation and the tax capital allowances

Accounting depreciation

Cost of machinery	$100,000
Expected useful life	10 years
Accounting depreciation per year	$10,000

Tax capital allowance

Cost of machinery	$100,000
Tax useful life	5 years
Capital allowance per year	$20,000

Calculate the deferred tax impact

	Carrying value of machinery	Tax base of machinery	Temporary differences	Deferred tax
	$ (1)	$ (2)	$ (3)=(1)-(2)	$ (4)=(3)*20%
Balance as at 1 April 20x18	100,000	100,000	–	–
Depreciation/capital allowances	(10,000)	(20,000)	10,000	2,000
Balance as at 31 March 20x18	90,000	80,000	10,000	2,000
Depreciation/capital allowances	(10,000)	(20,000)	10,000	2,000
Balance as at 31 March 20x19	80,000	60,000	20,000	4,000
Depreciation/capital allowances	(10,000)	(20,000)	10,000	2,000
Balance as at 31 March 20x20	70,000	40,000	30,000	6,000
Revaluation	80,000[1]	–	80,000	16,000
Balance as at 1 April 20x20	150,000	40,000	110,000	22,000
Depreciation/capital allowances	(21,429)[2]	(20,000)	(1,429)	(286)
Balance as at 31 March 20x21	128,571	20,000	107,142	21,714
Depreciation/capital allowances	(21,429)	(20,000)	(1,429)	(286)
Balance as at 31 March 20x22	107,142	–	85,713	21,428
Depreciation/capital allowances	(21,429)	–	(21,429)	(4,286)
Balance as at 31 March 20x23	85,713	–	64,284	17,143

Note 1: The revaluation uplift of $80,000 is recognized in other comprehensive income and accumulated in equity (i.e. the asset revaluation reserve) in accordance with paragraph 39 of IAS 16. No adjustment is made to the tax base of the machinery given that the tax authorities do not allow any adjustment to be made. Consequently, this gives rise to a taxable temporary of $80,000 and deferred tax of $16,000. The deferred tax is recognized in the asset revaluation reserve as well in accordance with paragraph 61A of IAS 12. The net impact of both entries is a gain net of tax amounting to $64,000.

Note 2: The revised depreciation is calculated as follows:

Revalued cost of machinery at 1 April 20x20	$150,000
Expected remaining useful life	7 years
Accounting depreciation per year	$21,429

Prepare the accounting entries

		$	$
31 Mar 20x18	Dr Deferred tax (P/L)	2,000	
	Cr Deferred tax liability		2,000
	Being recognition of deferred taxation		
31 Mar 20x19	Dr Deferred tax (P/L)	2,000	
	Cr Deferred tax liability		2,000
	Being recognition of deferred taxation		
31 Mar 20x20	Dr Deferred tax (P/L)	2,000	
	Cr Deferred tax liability		2,000
	Being recognition of deferred taxation		
1 Apr 20x20	Dr Machinery	80,000	
	Cr Asset revaluation reserve (OCI)		80,000
	Being revaluation of machinery recognized in OCI		
	Dr Asset revaluation reserve (OCI)	16,000	
	Cr Deferred tax liability		16,000
	Being recognition of deferred tax on the revaluation uplift in OCI		
31 Mar 20x21	Dr Deferred tax liability	286	
	Cr Deferred tax (P/L)		286
	Being recognition of deferred taxation		

31 Mar 20x22	Dr Deferred tax liability	286	
	Cr Deferred tax (P/L)		286
	Being recognition of deferred taxation		
31 Mar 20x23	Dr Deferred tax liability	4,286	
	Cr Deferred tax (P/L)		4,286
	Being recognition of deferred taxation		

Alternative scenario:

If Company Jadestone has the accounting policy of transferring the revaluation surplus from the asset revaluation reserve to retained earnings in accordance with paragraph 41 of IAS 16, the amount transferred will be the difference between depreciation based on the revalued carrying amount of the machinery and depreciation based on the original cost, net of tax.

Accordingly, the amount that will be transferred to retained earnings commencing from 31 March 20x21 is computed as follows:

Date	Original dep based on original cost	Revised dep based on revaluation	Difference	Tax impact	Amount transferred net of tax
	$	$	$	$	$
31 Mar 20x21	10,000	21,429	11,429	(2,286)	9,143
31 Mar 20x22	10,000	21,429	11,429	(2,286)	9,143

Hence, in addition to the accounting entries above, the following accounting entries will be passed commencing from 31 March 20x20.

		$	$
31 Mar 20x21	Dr Asset revaluation reserve (OCI)	9,143	
	Cr Retained earnings		9,143
	Being transfer of revaluation surplus to retained earnings net of tax		
31 Mar 20x21	Dr Asset revaluation reserve (OCI)	9,143	
	Cr Retained earnings		9,143
	Being transfer of revaluation surplus to retained earnings net of tax		

However, if we were to modify the facts of the illustration such that Company Jadestone expects to recover the carrying value of the machinery through use and sale (i.e. dual methods of recovery) instead of only through use, upon revaluation of the machinery, deferred tax liability will be recomputed as follows:

	Carrying value of machinery	Tax base of machinery	Temporary differences	Deferred tax
	$	$	$	$
Balance as at 31 March 20x20	70,000	40,000	30,000	6,000
Revaluation surplus up to cost	30,000[1]	–	30,000	6,000
	100,000	40,000	60,000	12,000
Revaluation surplus in excess of cost	50,000[1]	–	50,000	–
Balance as at 1 April 20x20	150,000	40,000	110,000	12,000

Note 1: In this case, given that there is no capital gains tax, proceeds in excess of the original cost will not be taxed upon sale. Hence, the revaluation gain of $80,000 is split into two portions i.e. revaluation surplus up to the original cost of $30,000 and revaluation surplus in excess of cost of $50,000. Deferred tax is calculated on the former but no deferred tax is provided for in respect of $50,000. As discussed above, no adjustment is made to the tax base of the machinery given that the tax authorities do not allow any adjustment to be made. Consequently, an additional deferred tax liability of $6,000 pertaining to the revaluation surplus of $30,000 is charged to the asset revaluation reserve on 1 April 20x0.

ACCOUNTING FOR UNUSED TAX LOSSES AND UNUSED TAX CREDITS

IAS 12 permits the recognition of a deferred tax asset (DTA) to the extent that it is probable that future taxable profit will be available to allow the utilization of the deferred tax asset (IAS 12:24 and IAS 12:34). A deferred tax asset should be recognized to the extent that unused tax losses and unused tax credits will be utilized to set off probable future taxable profit.

The deferred tax asset has to pass the test of "probable" likelihood of future profits. This contrasts with the treatment in the United States where a "valuation account" (that is, a contra account similar to an impairment loss provision account) brings down the deferred tax asset to a level that is "more likely than not" to be realized. Both negative and positive evidence is used to determine the amount in the valuation account. The test of "probable" future profits is more demanding than the "more likely than not" test.

IAS 12 permits the recognition of a deferred tax asset in full (current tax rate applied to tax loss) if it is probable that future taxable profit will arise, which will allow for the full utilization of the loss. In the diagram below, the reporting entity has a current accounting loss and expects future taxable profits against which the loss is offset. The lower expected tax payable in future is recognized presently as a deferred tax asset. When actual profits arise in future, current tax payable falls as a result of the offset and the recognized deferred tax asset is utilized. In this scenario, the future benefits from the loss carry-forward are recognized in full in accordance with the accrual principle. However, this situation requires the reporting entity to have evidence to support the expectation of future profit. IAS 12 paragraph 36 requires the reporting entity to consider the following criteria in assessing the probability of future profitability:

1. Existence of sufficient taxable temporary differences relating to the same taxation authority and the same taxable entity. By its nature, taxable temporary differences result in future taxable income.
2. Expiry period of unused tax losses or unused tax credits.

3. Whether losses result from identifiable, non-recurring causes. If a current accounting loss arises from non-recurring causes, the likelihood of achieving future profitability is higher.
4. Availability of tax planning opportunities to create taxable profit in a future period in which the tax losses can be utilized.

Now	Future expectations
Loss	Taxable profit, hence utilization of loss
↑ DTA (SFP) (if deemed probable)	↓ Current tax payable (SFP)
↓ Tax expense (I/S)	↓ DTA (SFP)

What if Taxable Future Profit Is Less than Probable?

If a company has a history of recent losses, the likelihood of future profits is low. IAS 12 allows a company to recognize deferred tax asset to the extent of its taxable temporary differences, unless convincing evidence exists to support that future profits exist (IAS 12:35). If a company has cumulative net taxable temporary differences on hand, it can be assumed that sufficient taxable profit will arise in future when the temporary differences reverse. In this instance, the existing tax losses can be utilized to offset the future taxable profit arising from the cumulative net taxable temporary differences. There is a neutralizing or offsetting effect between tax losses and cumulative net taxable temporary differences.

Thus, even if no other probable future profits are expected, a deferred tax asset can be recognized in full (if cumulative taxable temporary differences are greater than tax loss carry-forward) or partially to the extent of cumulative taxable temporary differences on hand (if cumulative taxable temporary differences are lesser than tax loss carry-forward).

For example, if a company has tax losses of $1,000,000 and cumulative net taxable temporary differences (CTD) of $600,000, and the tax rate is 20%, a deferred tax asset (DTA) of $120,000 can be recognized. Tax loss of up to $600,000 can be used to offset the future taxable income of $600,000 arising from the cumulative net taxable temporary differences.

Now	Future expectations
CTD $600,000	Reversal, taxable income ↑ $600,000
Tax losses $1,000,000	Utilization of loss, taxable income ↓ $600,000
In view of future effects, recognize DTA = DTL = $120,000	

However, if the loss-making company has "convincing other evidence" of sufficient taxable profit in future, it may recognize the deferred tax asset to the extent of losses that may be used to offset the probable future profits that are projected. For example, in the above scenario, if the losses arise from identifiable causes that are not likely to recur, and probable future profits of $1,200,000 are expected, the company can recognize deferred tax asset in full of $200,000. The losses of $1,000,000 are expected to be utilized to offset the future profits of $1,200,000. If future profits are probable, the company should recognize deferred tax asset to the extent of the loss or the future profit, whichever is lower. If the company has cumulative net taxable temporary differences on hand in addition to probable

future profits, the deferred tax asset is the lower of the tax effects of the loss, or the sum of cumulative taxable temporary differences and probable future profits.

Accounting for deferred tax assets involves a high level of subjective judgement. Hence, IAS 12 requires additional disclosure on deferred tax assets and unrecognized tax benefits. Disclosures are discussed in a later section of this chapter. Many companies include subjective evaluation of deferred tax benefits as an area of critical accounting estimates and judgements.

Illustration 11.4 shows how the deferred tax asset may be computed under each of the two scenarios of probable future profits and where future profits are less than probable.

ILLUSTRATION 11.4 Accounting for tax loss

The tax computation of XYZ is provided below. The tax rate is 25% and the amount of cumulative taxable temporary differences as at 1 January 20x1 is $100,000. Determine the deferred tax asset (DTA) and deferred tax liability (DTL) under two assumptions: (1) future profitability is probable to fully absorb the tax loss, and (2) future profitability is less than the probable.

Tax Computation

	20x1	20x2
Net profit/(loss) before tax	$(200,000)	$620,000
Add depreciation	120,000	120,000
Less capital allowances	(300,000)	(50,000)
Taxable income/(loss)	$(380,000)	$690,000
Loss and unused capital allowances, 1 January	0	(380,000)
Net taxable income/(Loss and unused capital allowances), 31 December	$(380,000)	$310,000
Tax payable at 25%	$ 0	$ 77,500

Movement in Net Taxable Temporary Differences

	20x1	20x2
Balance, 1 January (given)	$100,000	$280,000
Change	180,000	(70,000)
Balance, 31 December	$280,000	$210,000

Movement in Deferred Tax Liability

	20x1	20x2
Balance, 1 January (given)	$25,000	$70,000
Change	45,000	(17,500)
Balance, 31 December	$70,000	$52,500

Assumption 1: Probable future profits

Movement in Deferred Tax Asset

	20x1	20x2
Balance, 1 January	$ 0	$(95,000)
Change	(95,000)	95,000
Balance, 31 December	$(95,000)	$ 0

Assumption 2: Less than probable future profits

Movement in Deferred Tax Asset

	20x1	20x2
Balance, 1 January	$ 0	$(70,000)
Change	70,000	70,000
Balance, 31 December	$(70,000)	$ 0

page 1023

	Assumption of probable future profits			Assumption of less than probable future profits		
31 Dec 20x1	Dr Deferred tax asset (SFP)	95,000		Dr Deferred tax asset (SFP)	70,000	
	Cr Tax income[10] (I/S)		50,000	Cr Tax income (I/S)		25,000
	Cr Deferred tax liability (SFP)		45,000	Cr Deferred tax liability (SFP)		45,000
31 Dec 20x2	Dr Deferred tax liability (SFP)	17,500		Dr Deferred tax liability (SFP)	17,500	
	Dr Tax expense (I/S)	155,000		Dr Tax expense (I/S)	130,000	
	Cr Deferred tax asset (SFP)		95,000	Cr Deferred tax asset (SFP)		70,000
	Cr Tax payable (SFP)		77,500	Cr Tax payable (SFP)		77,500

Note that the difference in tax expense between the two treatments is merely a timing difference. In the final analysis, the summation of the income statement effects is the same under each scenario. The only difference is that the benefits of tax losses are recognized in the year of the loss under the optimistic scenario when future profitability is probable. In the optimistic scenario, tax income (expense) is perfectly correlated with accounting loss (profit) because of the recognition of deferred tax asset. However, this recognition is deferred to the year of utilization under the more pessimistic scenario when future profitability is less than probable. As with most things in accounting, time equalizes the differences.

	Assumption of probable future profits	Assumption of less than probable future profits
	Tax expense/(income)	Tax expense/(income)
20x1	$(50,000)	$(25,000)
20x2	155,000	130,000
Total	$105,000	$105,000

In our illustration above, we assume two static scenarios: assumption of probable future profitability and assumption of less than probable future profitability. The reality is that the assumptions may change from year to year. IAS 12 requires a reassessment and review to be carried out at each reporting date.

A reassessment has to be carried out at the end of each reporting period to compare previously unrecognized deferred tax assets with probable future taxable profits. For example, there may be improvements in the business environment that enables a loss-making company to be profitable.

Conversely, recognized deferred tax assets have to be reviewed at the end of each reporting period to determine if there is sufficient probable future taxable profit to utilize the benefits from the deferred tax assets. If there is insufficient probable future taxable profit, the carrying amount of the deferred tax asset will be reduced accordingly. In subsequent periods, if the review affirms that there is an increase in sufficient probable future taxable profit, the previous period's reduction will be reversed to the extent that sufficient probable future taxable profit is available.

For example, assume the following information relating to Co XYZ at the end of three consecutive reporting periods and tax rate of 20% throughout. Probable future taxable profit is expected to arise in year 4.

	End of Year 1	End of Year 2	End of Year 3
Tax losses	$1,000,000	$1,000,000	$1,000,000
Probable future taxable profit	$ 500,000	$ 200,000	$1,200,000
Deferred tax asset	$ 100,000	$ 40,000	$ 200,000

Year 1

Dr Deferred tax asset	$100,000	
Cr Tax income		$100,000

Recognition of deferred tax asset to the extent of availability of probable future taxable profit

Year 2

Dr Tax expense	$60,000	
Cr Deferred tax asset		$60,000

Reduction of deferred tax asset

Year 3

Dr Deferred tax asset	$160,000	
Cr Tax income		$160,000

Recognition of deferred tax asset to the extent of availability of probable future taxable profit

Special Issues Relating to the Impact of a Business Combination on Existing Deferred Tax Assets

Prior to a business combination, the acquirer and the acquiree may have deferred tax assets or unrecognized tax losses and tax credits on the statement of financial position. As a result of the business combination, the assumptions relating to recoverability of the deferred tax assets and unrecognized tax losses and tax credits may

change. For example, if group tax reliefs are permitted, the tax losses are available to be set off against the taxable profits of another group entity. Another scenario may be the change in assumptions concerning probability of future profitability. The new synergies generated from the business combination may change the outlook on profits for the acquiree or the acquirer.

IAS 12 requires the changes on recognized and unrecognized deferred tax benefits for the acquirer as a result of the business combination to be recognized in the post-acquisition period of the business combination.

Changes on the recoverability of deferred tax benefits, recognized and unrecognized, for the acquiree should be recognized at the time when the facts and circumstances arise with respect to the recoverability of the benefits. If the facts and circumstances attest to conditions that existed at acquisition date, the deferred tax assets should be recognized at acquisition date and reduce goodwill accordingly. Measurement period concession applies if the facts and circumstances were discovered subsequently. If the facts and circumstances attest to conditions that existed after acquisition date, or if the discovery of information on facts and circumstances existing at acquisition date occurred after the measurement period, the changes will impact profit or loss and not goodwill.

PRESENTATION AND DISCLOSURES

IAS 12 Requirements

IAS 12 prescribes several footnote disclosure requirements to enable users of financial information to better interpret the impact of taxes on the financial performance, financial position, and cash flows of the reporting entity. Among other benefits, the information enables users to analyze the components of tax expense, the relationship between tax expense and accounting income, the sources of temporary differences, and the recoverability of deferred tax assets and unrecognized tax losses. The detailed requirements on presentation and disclosures of information relating to income taxes are found in IAS 12 paragraphs 77 and 79 to 88 of IAS 12.

A summary is presented below:

1. Tax expense (income) relating to ordinary activities should be presented on the face of the income statement.
2. Major components of tax expense (income) should be disclosed separately. Examples of components are:
   a. Current tax expense (income);
   b. Adjustments for under- or over-provision of current tax payable of prior periods;
   c. Amount of deferred tax expense (income) relating to origination and reversal of temporary differences;
   d. Adjustment to deferred tax expense resulting from changes in tax rates or imposition of new tax rates;
   e. Reduction to current tax expense arising from the utilization of previously unrecognized tax losses, tax credits or deductible temporary differences;
   f. Reduction to deferred tax expense arising from the utilization of previously unrecognized tax losses, tax credits or deductible temporary differences;
   g. Write downs or reversal of write downs relating to deferred tax assets;
   h. Amount of tax expense (income) relating to prior-period adjustments that cannot be accounted for retrospectively.
3. Additional disclosures include:
   a. Aggregate current and deferred tax that are taken directly to equity;
   b. Income tax relating to items in other comprehensive income;

c. An explanation of the relationship between tax expense and accounting profit presented either numerically ($ amounts) or in tax rates;

d. An explanation of the changes in the applicable tax rate(s) in the current period as compared to the previous period;

e. Amount and expiry date (if any) of unrecognized deductible temporary differences, unused tax losses and unused tax credits;

f. Aggregate amount of unrecognized temporary differences relating to investments in subsidiaries, branches and associates, and interests in joint arrangements;

g. For each type of temporary difference, and each type of unused tax losses and unused tax credits, to show:

   i. Amount of deferred tax assets and liabilities recognized in the statement of financial position; and

   ii. Amount of deferred tax expense or income recognized in profit or loss (if this is not apparent from the changes in the amounts recognized on the statement of financial position);

h. For discontinued operations, to show the tax expense on the gain or loss on discontinuance and the separate tax expense on continuing operations, discontinued operations together with the comparative amounts;

page 1026

i. Income tax consequences of unrecognized dividends that were proposed or declared before the financial statements were authorized for issue;

j. Changes in deferred tax assets arising from a business combination for an acquirer;

k. If tax benefits are not recognized by an acquirer in a business combination at acquisition date, but are recognized subsequently, a description of the event or change in circumstances for the change in the recognition decision.

4. Special disclosures are required of deferred tax assets. The amount of deferred tax assets and the nature of the evidence supporting their recognition should be disclosed when:

   a. Probable future taxable profit exceeds the amount of reversal of taxable temporary differences (that is, new trading profit is expected); and

   b. The entity has suffered losses in either the current or preceding period in the tax jurisdiction in which the deferred tax assets originate.

Appendix 11C provides annual report extracts of disclosures of tax expense and supporting information of Singapore Telecommunications Limited.

TAX EFFECTS OF OTHER COMPREHENSIVE INCOME AND ITEMS TAKEN DIRECTLY TO EQUITY

The tax attributable to other comprehensive income and items credited or charged directly to equity is deducted from the related item concerned, and disclosed separately (IAS 12:61A). Thus, the tax expense line in the income statement relates purely to profit from ordinary activities. The process of attributing tax to different line items is called *intraperiod tax allocation*. Items shown as other comprehensive income include:

1. Revaluation gains or losses of property, plant and equipment, and intangible assets;
2. Foreign currency translation gains or losses of foreign operations;
3. Fair value changes of fair value through other comprehensive income (previously referred to as available-for-sale) financial assets;
4. Remeasurement gains or losses from defined benefit plans; and
5. Gains or losses from hedging instruments in cash flow hedging arrangements.

Examples of items taken directly to equity include:

1. Retrospective application of an accounting policy;
2. Retrospective restatement of financial statements to correct an error; and
3. Initial recognition of an equity component of a compound financial instrument.

Hence, other comprehensive income and the amounts directly taken to equity will be on a "net of tax" basis. For example, if the revaluation surplus of property, plant, and equipment is $10,000,000 and tax rate is 20%, and the revaluation surplus will lead to taxable future profit (that is, the conditions under IAS 12 paragraph 20 are met), the amount taken to revaluation reserve in equity is $8,000,000 as follows:

page 1027

Dr Property, plant and equipment	10,000,000	
Cr Revaluation surplus		8,000,000
Cr Deferred tax liability		2,000,000

Recognition of revaluation surplus on a net of tax basis

The tax relating to the revaluation surplus is not taken to the income statement but is deducted from the revaluation surplus in other comprehensive income. Hence, the tax charge follows the income item.

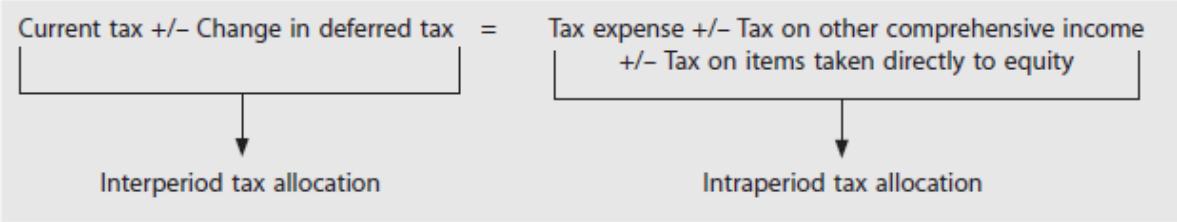


Illustration 11.5 is an example of how the tax effects of a prior-period adjustment is accounted for.

ILLUSTRATION 11.5 Intraperiod allocation

HYZ Ltd has the following sources of income/(losses) in 20x1:

Pre-tax profit from ordinary activities	$100,000
Prior-period loss	($20,000)

Tax rate was 30%. Prior-period loss was tax deductible in 20x1. There were no other temporary or permanent differences. There was no deferred tax liability balance at the beginning of 20x1.

Profit before tax	$100,000
Prior-period loss	(20,000)
Taxable income	$ 80,000
Tax payable at 30%	$ 24,000

The journal entry is:

Dr Tax expense (I/S)	30,000	
Cr Retained earnings (SFP)		6,000
Cr Tax payable (SFP)		24,000
Being interperiod and intraperiod tax allocation		

Explanatory note:

In this example, the tax expense on the prior-period item is deducted directly from the item. The tax expense as debited to the income statement relates purely to profit before tax. Since the prior-period loss reduces retained earnings, the tax expense on the item will increase retained earnings.

Illustration 11.6 presents the different situations of taxability for other comprehensive income.

ILLUSTRATION 11.6 Tax on other comprehensive income

Company X purchased equity investments on 1 Jan 20x0 for $3,000,000, which it classified as fair value through other comprehensive income (FVOCI) investment. The fair value of the investment as at 31 December 20x0 was $5,000,000. The tax rate is 20%. Assume three hypothetical tax scenarios:

(a) Neither the change in fair value nor the profit on sale is taxable.

(b) The change in fair value is taxable during the year of revaluation.

(c) The profit on sale of the investment is taxed during the year of the sale.

Prepare the journal entries to record the change in fair value and related tax effects (if any) for each scenario.

Basis for taxation	Scenario 1: Not taxable	Scenario 2: Taxed during the year of revaluation	Scenario 3: Taxed during the year of sale
Carrying amount of available-for-sale (AFS) investment	$5,000,000	$5,000,000	$5,000,000
Tax base	5,000,000	5,000,000	3,000,000
Taxable temporary difference	0	0	2,000,000
Deferred tax liability (at 20%)	0	0	400,000

Journal entries to record fair value adjustment:

Scenario 1: Not taxable		
Dr FVOCI investment	2,000,000	
Cr Fair Value Adjustment Reserve (OCI)		2,000,000
Scenario 2: Taxed during the year of revaluation		
Dr FVOCI investment	2,000,000	
Cr Current tax payable		400,000

Cr Fair Value Adjustment Reserve (OCI)		1,600,000

Scenario 3: Taxed during the year of sale

Dr FVOCI investment	2,000,000	
Cr Deferred tax liability		400,000
Cr Fair Value Adjustment Reserve (OCI)		1,600,000

SPECIAL ISSUES

Income Taxes on Intercompany Transactions

In Chapter 5, the effects of intragroup transfers of inventory and fixed assets were explored. We have also discussed the corresponding effect on taxes on the intergroup sales.

In a nutshell, IFRS 10 paragraph B86(c) requires profits or losses resulting from intragroup transactions that are recognized in assets such as inventory to be eliminated in full. Hence, when the inventory sold by an entity within the group remains unsold as at the end of the year, a consolidation entry must be passed to eliminate the profit recognized on the sale by the selling entity and the profit element included in the carrying value of inventory of the entity that bought the inventory.

At the same time, another consolidation entry has to be effected to align the consolidated tax expense with the consolidated profit or loss presented in the consolidated financial statements. The profit arising from the sale of the inventory would have been included in the selling entity's tax returns. From the perspective of the group, the tax expense on this profit (which is unrealized and eliminated on consolidation) recorded in the financial statements of the selling entity is not an expense for the group as yet. At the group level, the tax expense arising from the profit on the sale of the inventory should be recognized only when the inventory is subsequently sold to third parties outside the group (that is, by the buying entity). Hence, the tax expense recorded by the selling entity relates to a future period and is regarded as a deferred tax asset on the current period's consolidated financial statement. Essentially, the tax expense recognized on the seller's financial statements is in essence a prepaid tax from the perspective of the group. Accordingly, if the tax rates in the jurisdictions for the selling and buying entities are the same, a consolidation entry is required to reclassify the tax expense to deferred tax asset in the preparation of the consolidation financial statements. However, when the tax rates in the respective jurisdictions are different, a question arises as to how the group measures the deferred tax on the deductible temporary differences emerging from the intragroup transaction.

Whilst IAS 12 does not specifically address the measurement of such temporary differences, paragraph 51 of IAS 12 requires the measurement of deferred tax liabilities and deferred tax assets to reflect the tax consequences that would follow from the manner in which the entity expects to recover or settle the carrying amount of its assets and liabilities. Applying this principle, since the group expects the carrying value of the inventory to be recovered through the sale of the inventory by the buying entity, and eventually be taxed on the sale at the tax rate in the buying entity's jurisdiction, it follows that the deferred tax should accordingly be measured based on the tax rate applicable to the buying entity.

ILLUSTRATION 11.7 Tax rate on intercompany transactions

A parent entity with tax rate of 40% has a subsidiary with tax rate of 30%. On 1 December 20x5, the parent sold inventory with cost of $300,000 to the subsidiary for $500,000. The inventory is unsold as at 31 December 20x5. The sale resulted in a taxable profit of $200,000, of which tax is payable at 40% amounting to $80,000 in the parent's tax returns. As the inventory is unsold as at year end, the profit on the intragroup sale is eliminated in the consolidated financial statements of the parent.

On 20 February 20x6, the subsidiary sold the inventory to a third party for $600,000. This gives rise to a taxable profit of $100,000 with tax payable at $30,000 (that is, 30%) in the subsidiary's tax returns.

Analysis

In the parent's financial statements, a current tax expense and payable amounting to $80,000 is recognized.

From the group's perspective, apart from eliminating the intragroup sale, a deferred tax asset will have to be recognized as the current tax paid at the subsidiary level is, in substance, a prepaid tax from the perspective of the group. At the group level, the difference between the carrying value of the inventory of $300,000 and the tax base of $500,000 gives rise to a deductible temporary difference of $200,000. The tax base is $500,000 because this is the amount that is deductible in the subsidiary's tax returns when the inventory is sold to the third party. Given that the eventual sale will be taxed in the subsidiary's jurisdiction, the tax rate applicable to the subsidiary's jurisdiction of 30% is used to calculate the deferred tax asset. Hence, deferred tax asset of $60,000 will be recorded in the consolidated financial statements of parent.

In a nutshell, the net tax of $20,000 is payable by the parent in the consolidated financial statements for the year ended 31 December 20x5. This is because by transferring the inventory from a jurisdiction with a higher tax rate (40%) to one that has lower tax rate (30%), the group has exposed itself to higher tax exposure in the form of additional tax payable of $20,000 (that is, $200,000 at tax differential of 10%).

On 1 December 20x5, when parent sold inventory to subsidiary

Accounting entries in the separate financial statements of the parent

Dr Current tax expense	80,000	
Cr Current tax payable		80,000

Being current tax payable on sale of inventory to subsidiary

Elimination entries in the consolidated financial statements

Dr Revenue	500,000	
Cr Cost of sales		300,000
Cr Inventory		200,000

Being elimination of intragroup profit, intercompany sales and cost of sales

Dr Deferred tax asset	60,000	
Cr Deferred tax expense		60,000

Being deferred tax asset recognition on tax on intragroup profit at buying entity's tax rate

On 20 February 20x6, when subsidiary re-sold inventory to third party

Accounting entries in the separate financial statements of the subsidiary

Dr Current tax expense	30,000	
Cr Current tax payable		30,000

Being current tax payable on sale of inventory to subsidiary

Adjusting entries in the consolidated financial statements

Dr Deferred tax asset	60,000	
Cr Retained earnings		60,000

Being re-enactment of deferred tax asset on tax on intragroup profit recognized in prior year

Dr Deferred tax expense	60,000	
Cr Deferred tax asset		60,000

Being reversal of deferred tax on sale of inventory to third party.

Effective tax expense of the group is $90,000 or 30% of profit of $300,000 (revenue of $600,000 less original cost of $300,000)

Assets that Are Partially Deductible or Deductible in Excess of Its Original Carrying Amount

So far in the chapter, we have discussed scenarios where the tax authorities allow an amount equivalent to the original carrying values of assets at inception for purposes of tax deduction against the taxable profit that flows to the entity, when it recovers the carrying value of those assets.

However, it is not unusual for some jurisdictions to not allow the full extent of the original carrying value to be deductible for purposes of tax. In such cases, the tax base of the asset is less than its carrying value at initial inception. The reverse scenario can also happen where the tax authorities allow an amount greater than the original carrying value of the asset for tax deduction against the taxable profits. Here, the tax base of the asset is greater than its carrying value at initial inception. One of reasons for this could primarily be due to tax incentives in the form of enhanced deductions provided to encourage investments in certain assets to achieve certain desired fiscal or economic objectives. Conversely, the tax authorities may attempt to discourage certain investments through restricting the amount that can be claimed as tax deductions.

The general principle enshrined in paragraph 24 of IAS 12 requires a deferred tax asset to be recognized for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which the deductible temporary differences can be utilized, unless the deferred tax asset arises from the initial recognition of an asset or liability in a transaction that (a) is not a business combination and (b) at the time of the transaction, affects neither accounting profit nor taxable profit (tax loss).

Applying this principle, it follows that for such assets in which the tax deduction allowed is less than its original cost, the carrying value at initial inception can be apportioned into two components. The first component relates to the portion of the carrying value, which the tax authorities allows for tax deduction and the second component would cover the remaining portion of the carrying amount that is not deductible for tax. Deferred tax will be computed on the first component. Insofar as the second component is concerned, the initial recognition exception principle in IAS 12 paragraph 24 will apply, and deferred tax is not recognized for this portion.

Where the tax deduction allowed for by the tax authorities is more than the original cost, the tax base of the asset in this case is apportioned into two components, that is, the deductible portion based on the original cost of the equipment and the deductible amount in excess of the original cost. Deferred tax is only recognized on the temporary differences on the first component, that is, the difference between the carrying value and the deductible amount based

on original cost. The initial recognition exception will apply to the second component. Consequently, no deferred tax is recognized for the second component.

Illustrations 11.8 and 11.9 suggest a possible apportionment methodology.

ILLUSTRATION 11.8 Assets with tax base greater than its carrying value at initial inception

Company X purchases a piece of equipment with cost of $2 million on 1 January 20x0. The tax authorities allow tax allowances equivalent to four times the amount incurred (that is, $8 million) to be claimed with the intention of encouraging investments of this nature in Company X's industry. For purposes of financial reporting, Company X depreciates the equipment on a straight line basis over its useful life of ten years. For tax purposes, capital allowances in respect of the equipment are claimed over five years. The tax rate is 20%. Assume that there are no other items apart from capital allowances for calculating taxable profit. Calculate the tax expense and effective tax rate.

page 1032

Analysis

Calculate deferred tax credit/charge and its corresponding deferred tax asset/liability

Amounts are in $'000

Year	0	1	2	3	4	5	6	7	8	9	10
Carrying amount	2,000	1,800	1,600	1,400	1,200	1,000	800	600	400	200	–
Tax base of asset	8,000	6,400	4,800	3,200	1,600	–	–	–	–	–	–
Excess deduction (75%)[1]	6,000	4,800	3,600	2,400	1,200	–	–	–	–	–	–
Deduction based on cost (25%)[1]	2,000	1,600	1,200	800	400	–	–	–	–	–	–
Taxable/(Deductible) temporary differences	–	200	400	600	800	1,000	800	600	400	200	–
Deferred tax liability/(asset) at 20%	–	40	80	120	160	200	160	120	80	40	–
Deferred tax expense/(credit)	–	40	40	40	40	40	(40)	(40)	(40)	(40)	(40)

Explanatory note:

1. As discussed above, the tax base of the equipment is apportioned into the deductible portion that is based on the original cost of the equipment and the deductible amount in excess of the original cost. Deferred tax is only recognized on the temporary differences on the first component. The initial recognition exception will apply to the second component and no deferred tax is recognized.

Calculate current tax credit

Year	1	2	3	4	5	6	7	8	9	10
Capital allowances	1,600[2]	1,600	1,600	1,600	1,600	–	–	–	–	–
Current tax credit at 20%	320	320	320	320	320	–	–	–	–	–

Explanatory note:

2. This is derived as cost of equipment allowable for deductions under tax laws of $8 million divided by the tax useful life of five years.

Calculate total tax credit

Year	1	2	3	4	5	6	7	8	9	10
Current tax credit/(charge)	320	320	320	320	320	–	–	–	–	–
Deferred tax credit/(expense)	(40)	(40)	(40)	(40)	(40)	40	40	40	40	40
Total tax credit/(expense)	280	280	280	280	280	40	40	40	40	40

page 1033

Calculate effective tax rate

Year	1	2	3	4	5	6	7	8	9	10
Total tax credit/(expense)	280	280	280	280	280	40	40	40	40	40
Depreciation/ accounting loss	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
Effective tax rate[3]	140%	140%	140%	140%	140%	20%	20%	20%	20%	20%

Explanatory note:

3. Tax credit of $280 is 20% of $1,400 (accounting loss of $200 less additional tax deduction of $1,200) Company X has an effective tax rate (tax credit divided by accounting loss) of 140% from year 1 to year 5, and 20% from year 6 to year 10. This is as opposed to the overall effective tax rate (or tax deductibility rate) of 80%, which is derived by expressing the total tax deductions of $1.6 million (that is, $8 million × 20%) as a percentage of the original cost of $2 million. This is because in this case, the apportionment methodology does not spread the additional tax deduction of $1.2 million (i.e., $6 million × 20%) over a straight line basis.

ILLUSTRATION 11.9 Assets with tax base greater than its carrying value at initial inception

Assume the same facts as in Illustration 11.8. However, the tax authorities in this scenario allow only 60% of the original cost to be claimed as tax deductions to discourage investments of this nature. Calculate the tax expense and effective tax rate.

Analysis

Calculate deferred tax credit/charge and its corresponding deferred tax asset/liability

Amounts are in $'000

Year	0	1	2	3	4	5	6	7	8	9	10
Carrying amount	2,000	1,800	1,600	1,400	1,200	1,000	800	600	400	200	–
Non-deductible portion (40%)[1]	800	720	640	560	480	400	320	240	160	80	–
Deductible portion (60%)[1]	1,200	1,080	960	840	720	600	480	360	240	120	–
Tax base of asset	1,200	960	720	480	240	–	–	–	–	–	–
Taxable/(Deductible) Temporary differences		120	240	360	480	600	480	360	240	120	–
Deferred tax liability/(asset) at 20%		24	48	72	96	120	96	72	48	24	–
Deferred tax charge/ (credit)		24	24	24	24	24	(24)	(24)	(24)	(24)	(24)

Explanatory note:

1. In this scenario, the carrying value of the equipment is apportioned into two components, that is, the deductible portion that is based on the amount the tax authorities allows for tax deduction and the non-deductible portion that is disallowed by the tax authorities. Deferred tax is only recognized on the temporary differences on the deductible portion, that is, the difference between the deductible portion of the carrying value and the tax base of the equipment. The initial recognition exemption will apply to the non-deductible portion and no deferred tax is recognized.

Calculate current tax credit

Year	1	2	3	4	5	6	7	8	9	10
Capital allowances	240[2]	240	240	240	240	–	–	–	–	–
Current tax credit at 20%	48	48	48	48	48	–	–	–	–	–

Explanatory note:

2. This is derived as cost of equipment allowable for deductions under tax laws of $1.2 million divided by the tax useful life of five years.

Calculate total tax credit

Year	1	2	3	4	5	6	7	8	9	10
Current tax credit/(charge)	48	48	48	48	48	–	–	–	–	–
Deferred tax credit/(expense)	(24)	(24)	(24)	(24)	(24)	24	24	24	24	24
Total tax credit/(expense)	24	24	24	24	24	24	24	24	24	24

Calculate effective tax rate

Year	1	2	3	4	5	6	7	8	9	10
Total tax credit/(expense)	24	24	24	24	24	24	24	24	24	24
Depreciation/ accounting loss	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
Effective tax rate[3]	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%

Explanatory note:

3. Company X has an effective tax rate of 12% from year 1 to year 10, which is reflective of the overall effective tax rate of 12%, which is derived by expressing the total tax deductions of $240,000 (that is, $1.2 million × 20%) as a percentage of the original cost of $2 million. In this case, the apportionment methodology spread the original tax deduction of $240,000 over a straight line basis.

CONCLUSION

Accounting for taxes requires the recognition of the tax effects of taxable temporary and deductible temporary differences arising from recognized assets and liabilities. IAS 12 applies the principle of accrual accounting through the concurrent recognition of the deferred tax liabilities and assets in the same periods as the underlying assets and liabilities. Essentially, any future tax payable arising from the recovery of an asset must be accrued for in the current period. Similarly, any future tax deductions enjoyed on the settlement of a liability should be recognized in the current period. A balance sheet liability approach is used in IAS 12 to determine the taxable and deductible temporary differences arising from each asset and liability. The concept of tax base is integral in the balance sheet liability approach.

Implicitly, IAS 12 upholds the notion that tax is an expense and should bear a predictable relationship with accounting income. However, certain items may cause the relationship to be less than perfectly correlated. These include permanently disallowed expenses or permanently tax-exempt income, the effects of changes in tax rates, and the utilization of unrecognized losses. IAS 12 requires a reconciliation of tax expense with accounting income. The analytical check on tax expense as explained in this chapter reconciles tax expense with accounting income. This chapter illustrates the application of the balance sheet liability approach, the concepts of tax base of assets and liabilities, and analytical checks on tax expense.

APPENDIX 11A

Undistributed Profits of Subsidiaries, Branches, Associates, and Joint Arrangements

In earlier chapters, we explained the different measurement bases by which the investor accounts for investments in subsidiaries, associates, and interests in joint arrangements. These measurement bases may lead to carrying amounts that are different from their related tax base. For example, under equity accounting, the investment is carried at initial cost plus share of accumulated undistributed profits of the investee.

However, tax authorities may only recognize the initial cost as a tax deduction to offset profit on sale of the investment. The difference between the carrying amount of the investment in the investor's statement of financial position and the tax base gives rise to temporary differences.

In general, there are two types of temporary differences that could arise as a result of investments in subsidiaries, branches, associates, and joint arrangements. They are namely:

1. Differences between the carrying value of the investment and the tax base of the investment. This type of temporary differences is referred to in practice as "outside temporary differences," and it typically stems from the jurisdiction in which the parent or investor resides.

   Outside temporary differences can arise at the consolidated, separate, or standalone financial statements. The tax base of the investment generally relates to the original cost of investment for which tax deductions is allowed for by the tax authorities in the jurisdiction in which the parent, investor, or joint operator resides. Depending on the category of financial statements, the carrying value of the investments differ as set out in the following table:

	Carrying Value of Investment	Tax base of investment
Consolidated or standalone[11] financial statements	Carrying value of net assets (including goodwill and other fair value adjustments)	Generally, the cost of original investment
Separate financial statements	Carrying value of investment (can be at measured either at cost, fair value or in accordance with the equity method)	Generally, the cost of original investment

2. Differences between the carrying values of the assets and liabilities and the tax base of those assets and liabilities in the consolidated financial statements of the parent. This type of temporary differences is referred to in practice as "inside temporary differences," and it typically stems from the jurisdiction in which the subsidiary or investee resides. The discussion in the chapter was primarily centered on the discussion of inside temporary differences, which originate and reverse in the different periods as the assets are recovered and liabilities are settled at their carrying values.

page 1037

Let us focus on outside temporary differences. Paragraph 38 of IAS 12 provides some examples of such outside temporary differences. We elaborate on the examples for why these temporary differences arise:

1. *Existence of undistributed profits of the investee*. In some jurisdictions, these profits may be taxable only when they are distributed as dividends. Hence, there is a timing difference between when the profits are earned and when they become taxable income for the investor. In the spirit of IAS 12, these profits are "taxable temporary differences" and should be accounted for at the point when they are earned. However, IAS 12 provides an exception if certain conditions are met. These will be discussed in greater detail below.
2. *Changes in foreign exchange rates*. These arise from the use of different functional currencies by the investor (e.g., the parent) and the investee (e.g., the subsidiary). Translation gains or losses will arise from translating the carrying amounts and the tax base from the investee's functional currency to the investor's presentation currency.

3. *Impairment losses suffered by the investor on the investment.* The losses may not be recognized by tax authorities during the holding period.
4. At the consolidated level, other differences may arise, which do not arise in the separate financial statements of the investor. For example, the amortization of an intangible asset that is recognized in a business combination would not qualify for tax deductibility in the separate financial statements. If a jurisdiction recognizes the legal entity as the taxable unit, expenses that arise only at the group or economic entity level would not be recognized as a deductible expense.

Generally, in the case of outside temporary differences, a parent, investor or joint operator may be capable of postponing the reversal of some or all or its taxable temporary differences to avoid additional tax payable. Hence, IAS 12 provides an exception to the general principle for the recognition of deferred taxes on outside temporary differences. In particular, paragraph 12 of IAS 12 requires the parent, investor, or joint operator to recognize deferred tax liability for all taxable temporary differences that arise from the investments in subsidiaries, branches and associates, and interests in joint arrangements with the following exclusion (IAS 12:39). Deferred tax liability will not be recognized to the extent that both of the following conditions are met:

1. The parent of the subsidiary or the investor in the associate or joint arrangement or a branch is able to control the timing of the reversal of the temporary difference. In this situation, the investor must be able to control the dividend policy of the investee. This is presumed in a parent-subsidiary relationship but it is not implied in the other relationships (for example, where only significant influence exists). In relationships other than the parent-subsidiary relationship, an agreement must be present to support the investor's ability to control the dividend policy of the investee; and
2. It is probable that the temporary difference will not reverse in the foreseeable future. In this scenario, dividends are unlikely to be declared out of undistributed profits of the subsidiary and will not constitute as taxable income for the parent as a legal entity.

Hence, if the parent is able to control the dividend policy of the subsidiary and it is probable that dividends will not be declared out of the distributable profits, the parent need not recognize the deferred tax liability on the undistributed profits. In some situations, a deductible temporary difference may arise from investments in subsidiaries, branches and associates, and interests in joint arrangements. These should be recognized in full by the investor, except to the extent that it is probable that both of the following conditions are met:

1. The temporary difference will reverse in the foreseeable future; investor is not able to control the timing of the reversal of the temporary difference and
2. Taxable profit will be available against which the temporary difference can be utilized.

ILLUSTRATION 11A.1 Investment in an associate

Investor X has significant influence over a Hong Kong-based entity, Company A. The initial cost of the investment is S$3,000,000. Applying the equity method, Investor A recognizes share of post-acquisition profits of S$1,500,000. Investor X recognizes a balance of S$4,500,000 in the investment in its consolidated financial statements. The following table shows the extent of the temporary differences that results under each separate scenario.

Tax-exempt dividends on distribution	Taxable when received	Distribution not probable and investor able to control the timing of the distribution
= S$4,500,000 (carrying amount) – $S4,500,000 (tax base is the	S$4,500,000 (carrying amount) – S$3,000,000 (tax base is the cost)	= S$4,500,000 (carrying amount) – S$0

carrying amount as the dividends received are tax exempt) = S$0	= S$1,500,000	= S$4,500,000. Whilst there is a taxable temporary difference, the exception in IAS 12 paragraph 39 applies. Hence, no deferred tax liability will be recognized.

APPENDIX 11B

Special Considerations for Compound Financial Instruments

In this chapter, we explained that tax has to follow the accounting item. Intraperiod allocation requires the related tax to be presented with the item that causes the tax to arise. Some items are taken directly to equity and the related tax expense should be deducted from the equity items. In the main body of the chapter, we have illustrated the requirement with respect to prior-period adjustments such as retrospective restatement of financial statements for the correction of errors.

Another event that gives rise to taxable temporary differences is the allocation of a compound financial instrument. In Chapter 9 of this book, we have shown how the issuer of a compound financial instrument (for example, a convertible bond) has to be separated into its debt and equity components under IAS 32 *Financial Instruments: Presentation*. Using the incremental method approach, the equity component is the residual. We saw in that chapter that fair value of debt is the present value of cash payments discounted at the effective (market) rate of interest.

In some tax jurisdictions, the fair value of debt as determined by IAS 32 is not recognized as the tax base. Instead, the tax base could be the sum of the initial carrying amount of the debt and the equity component (that is, the proceeds from the issue of the convertible bond). A taxable temporary difference arises on initial recognition (IAS 12:23).

Taxable temporary difference at initial recognition

= Initial carrying amount of the liability – Tax base

= Initial carrying amount of the liability – (Initial carrying amount of the liability + initial carrying amount of equity)

IAS 12 requires the resulting taxable temporary difference to be recognized and charged directly to equity. The exemption under IAS 12 paragraph 15(b) does not apply here as the temporary difference arises from the recognition of equity and not an asset or liability. The deferred tax is charged directly to the carrying amount of the equity component (IAS 12:61A). Subsequent changes in the deferred tax liability are recognized in profit or loss as deferred tax expense or income (IAS 12:58). Illustration 11B.1 shows the accounting treatment.

ILLUSTRATION 11B.1 Taxable temporary differences on convertible bonds

Company Z issued convertible bonds on 15 July 20x1. Tax authorities do not recognize the separate equity options and consider the entire instrument as a debt issue. Hence, the tax base of the amount on the tax balance sheet is the carrying amount of the entire instrument. For accounting purposes (this was discussed in Chapter 9), the carrying amount of the debt instrument is separated from that of the equity instrument. Because the two "balance sheets" report different amounts for the debt instrument, a temporary difference arises on Day 1. This arises from the initial recognition of the equity instrument in the accounting balance sheet. Since IAS 12 paragraph 15(b) deals with deferred tax liabilities arising from initial recognition of assets and liabilities (but not equity), the prohibition in paragraph 15(b) does not apply to this scenario. For accounting purposes, the interest expense is based on the effective interest rate but for tax purposes, the tax deductibility is based on the cash interest. The difference between the two is a permanently disallowed item.

Consider the details of the issue on 15 July 20x1.

At this date, the tax base of the liability component is the initial carrying amount of the sum of the liability and the equity components. The following information applies:

Proceeds from issue of bonds	$11,000,000
Fair value of the bond without the equity option	$ 9,800,000
Principal amount	$10,000,000
Unamortized discount on bonds	$ 200,000
Fair value of equity options	$ 1,200,000
Tax base	$11,000,000
Taxable difference	$ 9,800,000 – $11,000,000 = $1,200,000
Tax rate	20%
Deferred tax liability	20% × $1,200,000 = $240,000

The deferred tax liability arises because of the initial separation of the equity options from the debt component and should be recognized. This is an equity transaction and does not relate to the exemption of IAS 12 paragraph 15(b), which deals with the initial recognition of an asset or a liability. The deferred tax liability that arises from the initial recognition of equity is recognized with a direct charge to the carrying amount of the equity component recognized in equity. The journal entries on 15 July 20x1 are as follows:

Dr Cash	11,000,000	
Dr Unamortized discount	200,000	
Cr Bonds payable		10,000,000
Cr Equity options		1,200,000

Separation of equity options from bonds

Dr Equity options	240,000	
Cr Deferred tax liability		240,000

Recognition of deferred tax liability with direct charge taken to equity (IAS 12 paragraphs 23 and 61A)

APPENDIX 11C

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2.27 Income Tax

Income tax expense comprises current and deferred tax.

The current tax is based on taxable profit for the year. Taxable profit differs from profit as reported in the income statement as it excludes items of income or expense that are taxable or deductible in other years and it further excludes items that are not taxable or tax deductible. The Group's liability for current tax is calculated using tax rates (and tax laws) that have been enacted or substantively enacted in countries where the Company and its subsidiaries operate by, at the end of the reporting period.

Deferred taxation is provided in full, using the liability method, on all temporary differences at the end of the reporting period between the tax bases of assets and liabilities and their carrying amounts in the financial statements. However, if the deferred income tax arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss, it is not accounted for. Deferred income tax is also not recognised for goodwill which is not deductible for tax purposes. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates (and laws) enacted or substantively enacted in countries where the Company and its subsidiaries operate by, at the end of the reporting period.

Deferred tax liabilities are provided on all taxable temporary differences arising on investments in subsidiaries, associates and joint ventures, except where the timing of the reversal of the temporary difference can be controlled and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred tax assets are recognised for all deductible temporary differences and carry forward of unutilised tax losses, to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences and carry forward of unused losses can be utilised.

At the end of each reporting period, the Group re-assesses unrecognised deferred tax assets and the carrying amount of deferred tax assets. The Group recognises a previously unrecognised deferred tax asset to the extent that it is probable that future taxable profit will allow the deferred tax asset to be recovered. The Group conversely reduces the carrying amount of a deferred tax asset to the extent that it is no longer probable that sufficient future taxable profit will be available to allow the benefit of all or part of the deferred tax asset to be utilised.

Current and deferred tax are charged or credited directly to equity if the tax relates to items that are credited or charged, in the same or different period, directly to equity.

Notes to the Financial Statements
For the financial year ended 31 March 2015

11. FINANCE COSTS

	Group	
	2015 S$ Mil	2014 S$ Mil
Interest expense on		

– bonds	**255.1**	245.4
– bank loans	**28.8**	29.9
– others	**27.3**	30.3
	311.2	305.6
Less: Amounts capitalised	**(6.7)**	(18.1)
	304.5	287.5
Effects of hedging using interest rate swaps	**0.5**	13.8
Unwinding of discounts (including adjustments)	**4.2**	4.6
	309.2	305.9

The interest rate applicable to the capitalised borrowings was 6.1 per cent as at 31 March 2015 (March 2014: 7.6 per cent).

12. TAXATION

12.1 Tax Expense

	Group	
	2015 S$ Mil	**2014 S$ Mil**
Current income tax		
– Singapore	**237.7**	153.6
– Overseas	**354.1**	328.6
	591.8	482.2
Deferred tax expense	**3.4**	120.0
Tax expense attributable to current year's profit	**595.2**	602.2
Recognition of deferred tax credit [1]	**(47.6)**	–
Adjustments in respect of prior year [2] –		
Current income tax		
– over provision	**(13.6)**	(41.3)
Deferred income tax		
– under provision	**11.3**	18.0
Withholding and dividend distribution taxes on dividend income from joint ventures	**133.2**	112.1
	678.5	691.0

Notes:

[1] This relates to deferred tax credit recognised on certain property, plant and equipment transferred to an associate.

[2] This included certain tax credits upon finalisation of earlier years' tax assessments.

12.1 Tax Expense *(Cont'd)*

The tax expense on profits was different from the amount that would arise using the Singapore standard rate of income tax due to the following –

	Group	
	2015 S$ Mil	**2014 S$ Mil**
Profit before tax	**4,463.0**	4,347.9
Less: Share of results of associates and joint ventures	**(1,735.3)**	(1,392.6)
	2,727.7	2,955.3
Tax calculated at tax rate of 17 per cent (2014: 17 per cent)	**463.7**	502.4
Effects of –		
Different tax rates of other countries	**90.9**	109.1
Income not subject to tax	**(21.3)**	(59.4)
Expenses not deductible for tax purposes	**40.9**	51.1
Deferred tax asset not recognised	**24.7**	5.3
Deferred tax asset previously not recognised now recognised	**(0.2)**	(2.2)
Others	**(3.5)**	(4.1)
Tax expense attributable to current year's profit	**595.2**	602.2

12.2 Deferred Taxes

The movements of the deferred tax assets and liabilities (prior to offsetting of balances within the same tax jurisdiction) during the financial year were as follows –

Group – 2015 Deferred tax assets	Provisions S$ Mil	TWDV [1] in excess of NBV [2] of depreciable assets S$ Mil	Tax losses and unutilised capital allowances S$ Mil	Others S$ Mil	Total S$ Mil
Balance as at 1 April 2014	**61.6**	**280.6**	**20.2**	**470.6**	**833.0**
(Charged)/ Credited to income statement	**(7.5)**	**(22.6)**	**–**	**65.9**	**35.8**
Charged to other comprehensive income	**–**	**–**	**–**	**(1.1)**	**(1.1)**
Transfer from/ (to) current tax	**3.4**	**–**	**–**	**(0.5)**	**2.9**
Translation differences	**(9.2)**	**(26.7)**	**1.8**	**(21.4)**	**(55.5)**
Balance as at 31 March 2015	**48.3**	**231.3**	**22.0**	**513.5**	**815.1**

Group – 2015 Deferred tax liabilities	Accelerated tax depreciation S$ Mil	Offshore interest and dividend not remitted S$ Mil	Others S$ Mil	Total S$ Mil
Balance as at 1 April 2014	**(401.3)**	**(5.3)**	**(42.8)**	**(449.4)**
Acquisition of subsidiaries	**–**	**–**	**(62.3)**	**(62.3)**
(Charged)/ Credited to income statement	**(15.3)**	**–**	**1.5**	**(13.8)**
Transfer from current tax	**(0.1)**	**–**	**–**	**(0.1)**
Translation differences	**(0.1)**	**–**	**(7.3)**	**(7.4)**
Balance as at 31 March 2015	**(416.8)**	**(5.3)**	**(110.9)**	**(533.0)**

12.2 Deferred Taxes *(Cont'd)*

The amounts, determined after appropriate offsetting, are shown in the statements of financial position as follows –

	Group		Company	
	2015 S$ Mil	2014 S$ Mil	2015 S$ Mil	2014 S$ Mil
Deferred tax assets	**803.8**	828.5	**–**	–
Deferred tax liabilities	**(521.7)**	(444.9)	**(248.9)**	(242.5)
	282.1	383.6	**(248.9)**	(242.5)

Deferred tax assets are recognised to the extent that realisation of the related tax benefits through future taxable profits is probable.

As at 31 March 2015, the subsidiaries of the Group had estimated unutilised income tax losses of approximately S$221 million (2014: S$112 million), unutilised investment allowances of S$53 million (2014: S$56 million), unutilised capital tax losses of S$92 million (2014: S$103 million) and unabsorbed capital allowances of approximately S$5.4 million (2014: S$16 million).

These unutilised income tax losses and investment allowances, and unabsorbed capital allowances are available for set-off against future taxable profits, subject to the agreement of the relevant tax authorities and compliance with certain provisions of the income tax regulations of the respective countries in which the subsidiaries operate. The unutilised capital tax losses are available for set-off against future capital gains of a similar nature subject to compliance with certain statutory tests in Australia.

As at the end of the reporting period, the potential tax benefits arising from the following items were not recognised in the financial statements due to uncertainty on their recoverability –

	Group	
	2015 S$ Mil	2014 S$ Mil
Unutilised income tax losses and investment allowances, and unabsorbed capital allowances	**279.1**	183.9
Unutilised capital tax losses	**92.2**	102.7

CONCEPT QUESTIONS

CQ11.1 Explain how a deferred tax liability and a deferred tax asset conform to the definitions of a liability and an asset in the IFRS Framework.

CQ11.2 Explain the concept of a taxable temporary difference.

CQ11.3 Explain the concept of a deductible temporary difference.

CQ11.4 In your view, is tax expense an "expense" or a "distribution of income"? Explain.

CQ11.5 Describe, in your own words, the methodology of deferred tax accounting.

CQ11.6 What may cause the "effective tax rate" of an entity to be different from the entity's statutory tax rate?

CQ11.7 Provide examples of situations where the taxable or deductible temporary difference should not be recognized.

CQ11.8 Explain the rationale for the treatment of tax losses under IAS 12.

CQ11.9 How may an investor use the information on deferred taxes in financial analysis of an entity?

CQ11.10 In your opinion, is the information reported on deferred taxes relevant for decision-making? Explain.

PROBLEMS

P11.1 Balance sheet liability approach and analytical check

Details of assets and liabilities of Company XYZ are as follows:

(a) Fixed assets

Date purchased	1 January 20x1
Cost	$1,000,000
Useful life	10 years
Residual value	$100,000

Depreciation is on a straight line basis. Capital allowances of $1,000,000 are recognized in full in 20x1. Recovery of residual value will be taxed when the fixed assets are disposed of.

(b) Development expenditures

Completion of development	1 January 20x1
Cost of development	$600,000
Useful life	3 years from 1 January 20x3

Development expenditures qualify as an asset under IAS 38 *Intangible Assets* and are not tax deductible. Amortization is on a straight line basis.

(c) Provision for warranties

	31 December 20x2	31 December 20x3
Balance at 1 January	$60,000	$75,000
Expense	50,000	60,000
Utilization	(35,000)	(45,000)
Balance at 31 December . . .	$75,000	$90,000

Warranties are deductible for tax purposes when claims are made.

(d) Interest receivable

	31 December 20x2	31 December 20x3
Balance at 1 January	$60,000	$75,000
Expense	50,000	60,000
Utilization	(35,000)	(45,000)
Balance at 31 December . . .	$75,000	$90,000

Interest income is taxed when earned.

(e) Rental revenue received in advance

	31 December 20x2	31 December 20x3
Balance at 1 January	$60,000	$20,000
Cash received	480,000	600,000
Revenue earned	(520,000)	(580,000)
Balance at 31 December . . .	$20,000	$40,000

Revenue is taxed at the point of receipt.

(f) Investment property

page 1048

	31 December 20x2	31 December 20x3
Balance at 1 January	$ 0	$5,500,000
Acquired at cost	5,000,000	0
Fair value adjustment	500,000	(700,000)
Balance at 31 December . . .	$5,500,000	$4,800,000

Investment property is carried at fair value. Changes in fair value are taken to Income Statement. Unrealized change in fair value is not taxed. Profit on sale is tax-exempt. Assume that the business model is to primarily hold the property to collect rents.

(g) Disallowed items included in net income

	31 December 20x2	31 December 20x3
Capital expenses	$60,000	$72,000

(h) Tax exemptions and reliefs granted

	31 December 20x2	31 December 20x3
Tax-exempt interest	$25,000	$30,000

(i) Profit before tax

	31 December 20x2	31 December 20x3
Profit before tax	$1,000,000	$1,200,000

(j) Current tax payable and tax rates

	31 December 20x2	31 December 20x3
Current tax payable	$132,000	$453,400
Tax rates	22%	20%

Tax rates for 20x1 was also 22%.

Required:

1. Using the balance sheet liability approach, and showing the carrying amount and the tax base for each asset and liability, determine the deferred tax liability (asset) balance as at 31 December 20x1, 31 December 20x2, and 31 December 20x3 for Company XYZ. Explain the tax base in each instance.
2. Determine the tax expense for 20x2 and 20x3.
3. Perform the analytical check on tax expense for 20x2 and 20x3.

P11.2 Comprehensive problem

Company A recorded a profit before tax of $2,500,000 for the year ended 31 December 20x3. The tax rate for 20x3 was 24% while that of 20x2 was 22%. Deferred tax liability as at 31 December 20x2 was $26,400.

(a) On 1 January 20x1, Company A purchased plant and machinery costing $120,000. The useful life of the plant and machinery was five years, but the capital allowances were to be claimed over a three-year period.

(b) On 1 July 20x2, Company A purchased specialized equipment costing $150,000. The useful life of the equipment was five years from the date of acquisition. However, for tax purposes, capital allowances were claimed in full during 20x2.

(c) Company A completed the development phase of a new drug on 1 January 20x2, which amounted to $50,000. The expenditures were not deductible for tax purposes but were deemed to have an economic useful life of five years for accounting purposes.

(d) The movement in the provision for impairment losses is as follows:

	31 December 20x3
Balance at 1 January	$55,000
Expense	30,000
Utilization	(50,000)
Balance at 31 December	$35,000

Impairment losses were allowable for tax purposes in the period of utilization.

(e) Dividends received during 20x3 amounted to $50,000 while dividend income for 20x3 was $60,000. Dividends receivable as at 1 January 20x3 were $20,000. Dividend income was taxed when received.

(f) Unearned revenue balance arising from service fees collected in advance as at 31 December 20x3 was $14,000. Cash received during the year in respect of unearned revenue was $32,000. Earned revenue from service fees for 20x3 was $30,000. Service fees were taxable during the year when the proceeds were received.

(g) Disallowed items are as follows:

Entertainment expenses	$ 9,600
Donations to non-qualifying charities	9,500
Disallowed transport expenses	13,000

(h) Tax-exempt income and reliefs granted are as follows:

Tax-exempt income	$14,000
Double-deductions	65,000

Required:

1. Prepare the tax computation for the year ended 31 December 20x3 based on the above information.
2. Using the balance sheet liability approach, show the cumulative taxable (deductible) temporary differences arising from each asset or liability as at 31 December 20x3.
3. Determine the deferred tax liability as at 31 December 20x3.
4. Perform the analytical check on tax expense for 20x3.

P11.3 Accounting for tax losses

Refer to Problem 11.2. If instead of a profit, Company A recorded a loss of $1,000,000 for 20x3, what would be the tax expense or credit for 20x3 assuming that future profitability is not assured? In your own words, explain how the accounting of deferred tax assets differ from that of deferred tax liabilities.

P11.4 Comprehensive problem

You have been assigned to prepare the deferred tax computations for Co A for the years ended 31 December 20x2 and 20x3. The following details relate to Co A's assets and liabilities.

(a) Fixed assets

Date purchased	1 January 20x1
Cost	$100,000
Useful life	5 years
Residual value	$10,000

Depreciation is on a straight line basis. Capital allowances of $100,000 are claimed in full in 20x1. Since full capital allowances are given on the cost of the asset, any residual value recovered on disposal is taxable.

(b) Development expenditures

Cost of development	$200,000
Useful life	4 years from 1 January 20x3

Development expenditures are capitalized as intangible assets. Amortization is on a straight line basis. The following tax deductions are allowed:

(i) $100,000 on 1 January 20x3
(ii) $100,000 on 1 January 20x4

(c) Provision for warranties

page 1051

	31 December 20x2	31 December 20x3
Balance at 1 January	$30,000	$25,000
Expense	45,000	50,000
Utilization	(50,000)	(60,000)
Balance at 31 December . . .	$25,000	$15,000

Warranties are deductible for tax purposes when claims are made.

(d) Interest receivable

	31 December 20x2	31 December 20x3
Balance at 1 January	$200,000	$ 70,000
Interest income	100,000	120,000
Interest received	(230,000)	(180,000)
Balance at 31 December . . .	$ 70,000	$ 10,000

Interest income is taxed when received.

(e) Unearned revenue

	31 December 20x2	31 December 20x3
Balance at 1 January	$100,000	$40,000
Cash received	60,000	60,000
Revenue earned	(120,000)	(70,000)
Balance at 31 December . . .	$ 40,000	$30,000

Revenue is taxed at the point of receipt.

(f) Financial assets

	31 December 20x2	31 December 20x3
Balance, at cost	$ 80,000	$ 80,000
Fair value adjustment	20,000	40,000
Balance, at fair value	$100,000	$120,000

page 1052

The asset was acquired during 20x2. Fair value adjustment of $20,000 was taken to income statement in each of the two years. Income from the sale of financial assets is taxable. As of 31 December 20x3, no sale has been made of the financial assets.

(g) Disallowed items included in net income

	31 December 20x2	31 December 20x3
Penalties and fines	$ 5,000	$ 1,400
Entertainment expenses	1,200	10,000
Motor vehicles expenses . . .	14,000	12,000

(h) Tax exemptions and reliefs granted

	31 December 20x2	31 December 20x3
Double deduction on trade fair expenses	$16,200	$30,000
Tax-exempt interest	5,700	12,000

(i) Profit before tax

	31 December 20x2	31 December 20x3
Reported profit	$850,000	$900,000

(j) Tax rates

	31 December 20x2	31 December 20x3
Current tax rates	25%	20%

Deferred tax liability balance as at 31 December 20x1 was $38,000. The tax rate was 25% as at 31 December 20x1.

Required:

1. Prepare the tax computation for the years ended 31 December 20x2 and 20x3.
2. Using the balance sheet liability approach, and showing the carrying amount and the tax base for each asset and liability, determine the deferred tax liability balance as at:
   (a) 31 December 20x2; and
   (b) 31 December 20x3.
3. Prepare the journal entries to record the tax expense for 20x2 and 20x3.
4. Perform the analytical check on tax expense for 20x2 and 20x3.

P11.5 Comprehensive problem

Co X was incorporated on 1 January 20x0. Details of assets and liabilities of Co X as at 31 December 20x1 were as follows:

(a) Fixed assets

Date purchased	1 January 20x1
Cost	$240,000
Useful life	10 years
Residual value (taxable when sold)	$20,000

Depreciation is on a straight line basis. The capital allowances are as follows:

(i) $80,000 in 20x1
(ii) $80,000 in 20x2
(iii) $80,000 in 20x3

(b) Intangible asset

Date of purchase	1 January 20x1
Cost of development	$400,000
Useful life	5 years

Amortization is on a straight line basis. No tax deductions are allowed on the asset.

(c) Accounts receivable

	31 December 20x1	31 December 20x2
Balance at year-end	$100,000	$200,000

Revenue is taxed in the year when sales are made.

(d) Provision for impairment losses

	31 December 20x1	31 December 20x2
Balance at 1 January	$ 20,000	$ 25,000
Impairment expense	30,000	60,000
Utilization of provision	(25,000)	(70,000)
Balance at 31 December	$ 25,000	$ 15,000

Tax deduction is allowed on actual utilization of the provision.

(e) Loan payable

	31 December 20x1	31 December 20x2
Balance at year-end	$1,000,000	$650,000

Repayment of loans is a capital transaction and is not tax deductible.

(f) Interest payable

	31 December 20x1	31 December 20x2
Balance at 1 January	$240,000	$130,000

Interest expense	190,000	60,000
Interest paid	(300,000)	(150,000)
Balance at 31 December . . .	$130,000	$ 40,000

Interest expense is deductible when paid.

(g) Unrealized exchange gain

	31 December 20x1	31 December 20x2
Unrealized exchange gain included in year-end debtors	$20,000	$18,000

Exchange gain is realized in the following year and is taxed in the period of realization.

(h) Profit before tax

Profit before tax for 20x1	$1,000,000
Profit before tax for 20x2	750,000

(i) Tax rates

As at 31 December 20x0	18%
As at 31 December 20x1	20%
As at 31 December 20x2	22%

Required:

1. Prepare the tax computation for the years ended 31 December 20x1 and 20x2.
2. Using the balance sheet liability approach, and showing the carrying amount and the tax base for each asset and liability above, determine the deferred tax liability balance as at:
   (a) 31 December 20x0;
   (b) 31 December 20x1; and
   (c) 31 December 20x2.
3. Show the journal entries to record tax expense.
4. Show the analytical check on tax expense for 20x1 and 20x2.

page 1055

P11.6 Accounting for tax losses

Refer to P11.5. If the financial statements for 20x2 showed a pre-tax loss of $600,000 instead of a profit of $750,000, what would be the journal entry for tax expense for 20x2? Assume that there is no reasonable assurance of future profitability and that the company will continue to be loss-making in the foreseeable future.

P11.7 Comprehensive problem

Co Q requires your assistance to complete its deferred tax and tax expense calculation for the year ended 31 December 20x2. The following schedules are provided to you below:

(a) Tax computation for the year ended 31 December 20x2.

(b) Schedule of taxable (deductible) temporary differences for 20x2.

Required:

1. Complete the schedule of taxable (deductible) temporary differences by indicating on the blanks whether the item is a taxable temporary difference (TTD) or a deductible temporary difference (DTD) *and* the amount for that item. If the temporary difference is not to be recognized under IAS 12 *Income Taxes*, state clearly.
2. If the statutory tax rate for 20x1 is 20%, and if there are no additions or disposals of fixed assets, show the journal entries for Co Q for 20x2.
3. If the profit before tax of $750,000 was a loss of $1,000,000, show the journal entries for Co Q for 20x2.

Tax computation for the year ended 31 December 20x2

Profit before tax		$750,000
Add back depreciation on plant and equipment	$100,000	
Less: Capital allowances	0	100,000
Add back depreciation on motor vehicles	$ 12,000	
Less: Capital allowances	0	12,000
Add back warranty expense	$ 80,000	
Less: Actual claims	(100,000)	(20,000)
Earned income	$(95,000)	
Add: Unearned income received	45,000	(50,000)
Taxable income		$792,000
Tax rate		22%
Current tax payable		$174,240

Schedule of taxable (deductible) temporary differences

1. Plant and equipment

	31 Dec 20x2
Carrying amount	$300,000
Tax base	

Capital allowances were fully claimed in the year of purchase.

2. Motor vehicles

	31 Dec 20x2
Carrying amount	$96,000
Tax base	

Capital allowances are not granted on these vehicles.

3. Loan payable

	31 Dec 20x2
Carrying amount	$200,000
Tax base	

Loan payable is the principal amount repayable at the end of 20x6.

4. Provision for warranties

	31 Dec 20x2
Carrying amount	$20,000
Tax base	

Tax deduction is allowed on actual utilization of the provision.

5. Prepaid expense

	31 Dec 20x2
Carrying amount	$5,000
Tax base	

The expense is deductible in the year when expensed.

6. Unearned revenue

	31 Dec 20x2
Carrying amount	$20,000
Tax base	

Revenue is taxed when received.

P11.8 Comprehensive problem

Company X seeks your assistance to determine its tax expense under IAS 12 *Income Taxes*. The accountant has provided you with a schedule below of carrying amounts of assets and liabilities and information relating to the tax treatments of the items. The accountant also provided the tax computation for the financial year ended 31 December 20x3.

Complete the schedule. Indicate clearly whether a taxable or deductible temporary difference exists for each item. If the temporary difference is not to be recognized under IAS 12, state clearly.

Schedule of balances as at 31 December 20x3

Item	Amount	Tax treatment
1. Construction Work-in-progress		
Construction costs to date	$12,000,000	Construction profit is taxed at the
Construction profit to date	700,000	point of completion of project
Construction work-in-progress	$12,700,000	
Carrying amount	$12,700,000	
Tax base		
2. Provision for restructuring costs		
Carrying amount	$150,000	Restructuring costs are not
Tax base		deductible for tax purposes
3. Fixed assets		
Net book value	$300,000	Capital allowances were fully
Tax base		claimed in the first year of purchase.
		Original cost was $500,000.
4. Interest receivable		
Carrying amount	$70,000	Interest is tax-exempt
Tax base		
5. Rent receivable		
Carrying amount	$80,000	Rental income is taxed in the
Tax base		period when earned
6. Unearned income		
Carrying amount	$90,000	Unearned income is taxed at the
Tax base		point of receipt

7. Financial assets at fair value through profit or loss		
Carrying amount at fair value	$150,000	Gains are taxed at the point of sale.
Tax base		The original purchase price of the asset is $120,000.
8. Deferred development costs (FRS 38)		
Carrying amount	$40,000	Non-deductible expense
Tax base		

The tax computation for Company X for the year ended 31 Dec 20x3 is shown below:

Tax computation for the year ended 31 December 20x3

Profit before tax	$1,000,000
Less: Construction profit	(500,000)
Add back depreciation on fixed assets	100,000
Less: Capital allowances	0
Tax-exempt interest	(70,000)
Earned income	(70,000)
Add: Unearned income received during the year	90,000
Less: Gain in fair value of financial assets	(30,000)
Add: Loss in fair value of financial assets	10,000
Taxable gain on sale of financial assets	10,000
Disallowed amortization on deferred training costs	20,000
Disallowed charge for restructuring costs	30,000
Taxable income	$590,000
Tax rate	20%
Tax payable	118,000

Required:

1. Determine the tax expense of Company X for the year ended 31 December 20x3. Tax rate for 20x2 is 22%. Prepare the journal entry.
2. Perform an analytical check of the tax expense.

P11.9 Comprehensive problem and disclosures

Prism Co, a magazine publisher, reported net profit before tax of $1,300,000 for the year ended 31 December 20x1. The only disallowed expenses were the depreciation on private motor vehicles of $7,000 and disallowed upkeep and maintenance expenses on the motor vehicle of $3,000. Tax rate as at 31 December 20x1 was 17% while the tax rate as at 31 December 20x0 was 18%.

Additional information:

(1) Prism bought printing equipment on 1 January 20x0. The original cost was $480,000 and the economic useful life was five years. Capital allowances were claimed over three years from 1 January 20x0.

(2) A motor vehicle owned by Prism with original cost of $120,000 did not qualify for capital allowance claims. The economic useful life was ten years and the residual value was $50,000. As at 31 December 20x0, two years had expired from its initial purchase date.

(3) Prism Co received magazine subscriptions from customers in advance and recognized the receipts as unearned revenue. Subscription revenues are taxable in the period when magazines are delivered. Prism recorded the following in 20x0 and 20x1.

	20x0	20x1
Carrying amount of unearned revenue at 31 December	$130,000	$140,000
Revenue earned during the year	$140,000	$ 80,000
Revenue received during the year	$120,000	$ 90,000

Required:

1. Determine the taxable temporary differences and deductible temporary differences as at 31 December 20x0 and 31 December 20x1.
2. Determine the tax expense for the year ended 31 December 20x1.
3. Prepare the journal entry to record the tax expense for the year ended 31 December 20x1.
4. Prepare the disclosure requirements to show the following:
   (a) An explanation of the relationship between tax expense and accounting income by way of a numerical reconciliation between tax expense and the product of accounting profit multiplied by the applicable tax rate; and
   (b) The amount of the deferred tax assets and liabilities recognized in the statement of financial position for each type of temporary differences.

P11.10 Special situations

Co XYZ recognized issued compound financial instruments in accordance with IAS 32 *Financial Instruments: Presentation,* and purchased investment property in accordance with IAS 40 *Investment Property* using the fair value model and elected to carry equity instruments at Fair Value through Other Comprehensive Income (FVOCI) in accordance with IFRS 9 *Financial Instruments*.

Compound financial instruments:

Issue date	1 January 20x1
Proceeds from issue of bonds	$12,000,000
Fair value of the bonds without the equity option	$10,200,000
Principal amount	$11,000,000

Effective interest rate	6.76%
Coupon interest rate	5%
Income tax rate	20%

Tax authorities do not recognize the separate equity options

Investment property:

Purchase date	15 July 20x0
Purchase price of investment property	$10,000,000
Fair value as at 31 December 20x0	$12,000,000
Fair value as at 31 December 20x1	$14,000,000
Basis of measurement	Fair value model
Income tax rate	20%
Capital gains tax rate	10%

Holding assumptions:

(1) Maintains rebuttable presumption that fair value is recovered through sale.

(2) Does not maintain rebuttable presumption. Fair value is recovered through rental income.

FVOCI investment:

Purchase date	23 July 20x0
Purchase price of FVOCI equity investments	$12,000,000
Fair value as at 31 December 20x0	$16,000,000
Fair value as at 31 December 20x1	$14,000,000
Income tax rate	20%

Tax scenarios:

(1) Not taxable

(2) Taxed during year of fair value gain or loss

(3) Taxed during year of sale

Required:

Prepare journal entries to record the deferred tax liability and/or current tax liability during 20x0 and 20x1 for each of the above three instruments under each holding assumption or tax scenario, where applicable.

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[1] All tax rules used in the examples in this chapter are for the purposes of illustration only and do not reflect the tax laws of any particular tax regime.

[2] Financial Accounting Standards Board, 1992. Statement of Financial Accounting Standard 109, *Accounting for Income Taxes*, Norwalk, CT.

[3] IAS 12 (1979) made reference to permanent differences. The concept of permanent differences indirectly applies in the current version of IAS 12 because of IAS 12 paragraph 15. However, with the possible future revision to IAS 12 paragraph 15, the concept of permanent differences will no longer apply. Appendix 11A explains the implications.

[4] The difference is not recognized if it arises from the initial recognition of an asset or liability, as prohibited by IAS 12 paragraph 15.

[5] We assume the more common scenario that deferred tax liabilities arise from recognized assets rather than liabilities.

[6] Deferred tax asset may also arise from a recognized asset if the future deductions on an asset is greater than its carrying amount. However, the diagram and explanations focus on deferred tax assets arising from recognized liabilities.

[7] Recognition of Deferred Tax Assets for Unrealized Losses (Amendments to IAS 12), applicable for periods beginning on or after 1 January 2017. Earlier application is permitted.

[8] Ibid.

[9] The Board, April 2008, *Short-Term Convergence: Income Taxes*, IASC Foundation, London, United Kingdom.

[10] Opposite of a tax expense.

[11] An instance in which standalone financial statements is prepared is when an investor has interests in an associate but does not have any subsidiaries.

CHAPTER

12

Earnings per Share

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand the significance of earnings per share;
- **LO2** Understand the difference between basic and diluted earnings per share;
- **LO3** Understand how new issues affect earnings per share through the weighted average number of shares;
- **LO4** Understand the concept of dilution;
- **LO5** Understand the concept of control number in diluted earnings per share; and
- **LO6** Use the methods for calculating diluted earnings per share: the if-converted method and the treasury method.

INTRODUCTION

One of the primary concerns of investors is the profitability of entities in which they have a vested interest. There are a number of ways to measure an entity's profitability. For example, it can be measured in absolute terms or as a return (in percentage terms). In practice, investors often use more than one approach to assess an entity's profitability. For example, investors usually compare the year-on-year change in absolute net earnings. This provides them with an indication of the growth in absolute earnings. They also compute financial ratios that measure profitability, and compare the ratios over time. Profitability ratios include net profit margin, return on asset, return on shareholders' equity, and earnings per share. As each of these measures captures a different dimension of profitability, they are useful to investors. The focus of this chapter is on earnings per share as a measure of performance.

Earnings per share (EPS) is one of the most well-known financial ratios among the investment community. Earnings per share data serve two main functions. As a measure of profitability, it indicates the net earnings attributable to each unit of ordinary share capital. Viewed simplistically, the higher the earnings per share, the better the performance and profitability of the entity is deemed to be. The second, and perhaps more important, function is that it is the denominator in the price-earnings ratio,[1] a ratio that is widely used by the investment community as a basis for valuation. When used for valuation purposes, the price-earnings ratio of a particular entity is often compared with the average price-earnings ratios of its peers or that of the industry to provide an indication of whether the share price of the entity is undervalued or overvalued. Some analysts combine the price-earnings ratio with the growth in earnings per share to assess the undervaluation or overvaluation in an entity's share price. For example, if the earnings growth rate is 15% and the price-earnings ratio is seven times, it is a positive indication that the share price has further upside potential as the rate of increase in future earnings per share will mean a higher share price if the price-earnings ratio is maintained at the same level.

In practice, analysts often distinguish between the historic price-earnings ratio and the prospective price-earnings ratio. The historic price-earnings ratio is simply the current market price divided by the most recent earnings per share (usually the earnings per share for the financial year that has just ended). The prospective price-earnings ratio is the current market price divided by the projected earnings per share for the current financial year that has not ended or the next financial year. It can also be used in the context of an initial public offer (IPO). For example, the prospectus of

ABC Company indicates a prospective earnings per share of 20 cents. The prospective earnings per share in this case is the forecasted earnings divided by the number of shares following the IPO.

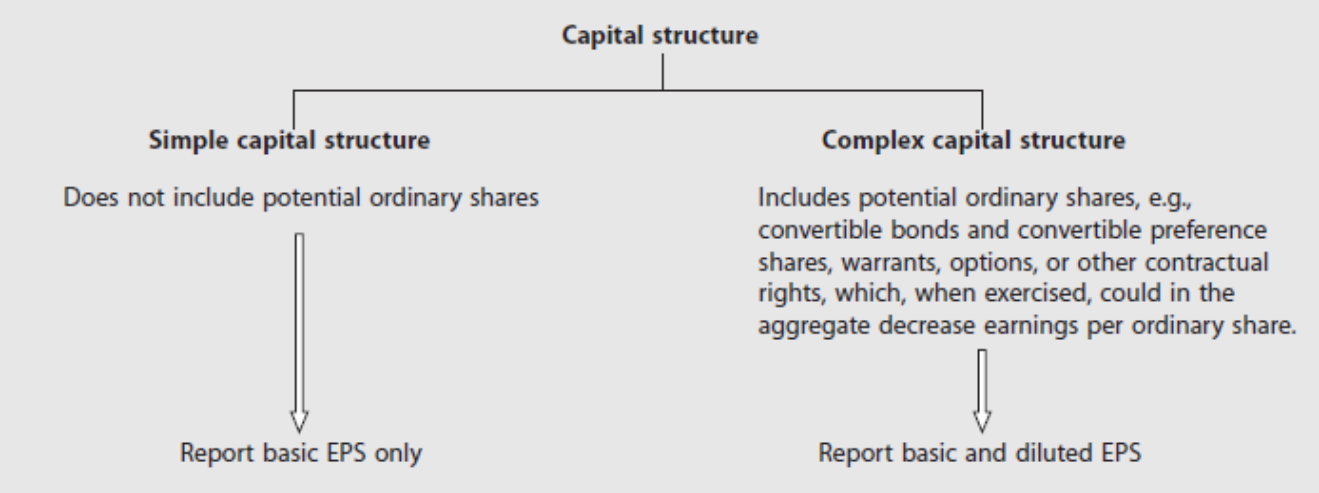
Basic and Diluted Earnings per Share

IAS 33 *Earnings per Share* applies to financial statements of an entity whose ordinary shares or potential ordinary shares are traded in a public market, or that is in the process of issuing these shares in a public market. page 1063 When an entity presents both consolidated and separate financial statements, EPS disclosures need be made only in the consolidated financial statements.

In accounting terms, there are two versions of earnings per share, namely *basic earnings per share* and *diluted earnings per share*. Entities that fall within the scope of IAS 33, which have what is termed as "a complex capital structure," are required to disclose diluted earnings per share in addition to the basic earnings per share. A complex capital structure is one that includes securities qualifying as potential ordinary shares such as convertible securities and share options (see Figure 12.1). Basic earnings per share is computed as follows:

$$\text{Basic EPS} = \frac{\text{Net profit attributable to ordinary shareholders of parent entity}}{\text{Weighted average number of ordinary shares during a reporting period}}$$

FIGURE 12.1 Simple and complex capital structures and earnings per share



Numerator in Basic Earnings per Share

The numerator in the basic EPS ratio is the net profit attributable to ordinary shareholders of the entity or the entity's parent[2] after deducting the amounts due to preference shareholders in respect of:

1. Preference dividends; and
2. Gains or losses arising on the repurchase or early conversion of preference shares and amortization of discount or premium on increasing rate preference shares.

In the case of a group entity, the numerator is the earnings attributable to the shareholders of the parent company, that is, after the deduction of non-controlling interests' share of net profit or loss.

When an entity has exited from an industry or business, it is required to report the results attributable to the discontinued operation separately from the continuing operations. Two basic earnings per share should be reported:[3] basic earnings per share attributable to the profit or loss from the continuing operations, and the overall basic earnings per share for the entity.[4] The profit or loss from the continuing operations serves as the control page 1064 number in the calculation of diluted earnings per share. This will be discussed later in this chapter.

Adjusting for Preference Dividends

When adjusting for preference dividends, the following points should be noted:

1. Dividends on non-cumulative preference shares are deducted only when they are declared.
2. Dividends on cumulative preference shares are deducted regardless of whether a preference dividend has been declared or paid.
3. In the case of an increasing rate preference shares,[5] the amortization of the discount or premium on the preference shares is treated as part of the preference dividend.
4. If preference shares have been repurchased in a tender offer at a fair value, which is greater than their carrying value, the excess is deducted when calculating the profit or loss attributable to ordinary equity holders of the parent entity.
5. Preference shares may be converted early due to favorable changes in the original conversion terms or the payment of additional consideration to the holder. The excess of the fair value of the ordinary shares issued, or any other consideration paid over the fair value of the ordinary shares that are issuable under the original conversion terms, is a return to the preference shareholders and a loss to the issuer. The loss is deducted when calculating the profit or loss attributable to ordinary equity holders of the parent entity.

Illustration 12.1 shows the impact of preference shares on basic earnings per share.

ILLUSTRATION 12.1 Preference shares and basic earnings per share

GTO's capital structure comprises the following:

1. 5,000,000 ordinary shares
2. 2,000,000 non-cumulative 6% preference shares
3. 1,000,000 cumulative 4.5% preference shares

Net profit for 20x3 and 20x4 were $300,000 and $5,000,000, respectively. No dividend was declared or paid in 20x3. In 20x4, dividends were declared and paid on the non-cumulative preference shares and cumulative preference shares (for both 20x3 and 20x4). During 20x4, 500,000 cumulative preference shares were repurchased in a tender offer at a premium of 50 cents over their carrying value. Assume that preference dividends and gains or losses on repurchase of preference shares have no tax effects. The calculation of basic earnings per share for 20x3 and 20x4 is shown below.

page 1065

	20x4	20x3
Net profit attributable to ordinary shareholders	$5,000,000	$ 300,000
Less preference dividends:		
Non-cumulative	(120,000)[a]	
Cumulative	(45,000)[b]	(45,000)[b]
Repurchase of preference shares . .	(250,000)[c]	
Net profit attributable to ordinary shareholders	$4,585,000	$ 255,000
Number of ordinary shares	5,000,000	5,000,000

Basic earnings per share	$4,585,000/5,000,000 = 91.7 cents	$255,000/5,000,000 = 5.1 cents

[a] $2,000,000 × 0.06

[b] $1,000,000 × 0.045

[c] 500,000 × $0.50

The actual amount of preference dividends paid in 20x4 is $210,000 ($120,000 being the non-cumulative preference dividend and $90,000 being the cumulative preference dividend).

COMPUTATION OF A WEIGHTED AVERAGE NUMBER OF SHARES

The computation of basic earnings per share is simple if there are no changes in the share capital during the year (as implied in Illustration 12.1). However, when there are changes in the share capital during the year, adjustments have to be made to the denominator (the number of shares) as the weighted number of shares outstanding during the period has to be calculated. This is defined as "the number of ordinary shares outstanding at the beginning of the period, adjusted by the number of ordinary shares bought back or issued during the period, multiplied by a time-weighting factor" (IAS 33:20). For the purpose of determining the time-weightage, consideration is made of the terms and conditions on which the shares were issued. Generally, shares are time-weighted from the date consideration is receivable, which normally coincides with the date of the share issue. Some examples provided in IAS 33[6] are:

1. Shares issued to acquire net assets or an entity in a business combination are included in the weighted average number of shares from the date of acquisition.
2. Shares that will be issued upon the conversion of a mandatorily convertible instrument, such as mandatorily convertible preference shares, are included in the calculation of basic earnings per share from the date the contract is entered into (and not when the actual conversion takes place).
3. Contingently issuable shares are included in the calculation of basic earnings per share only from the date when all necessary conditions are satisfied (i.e., the contingent events have occurred).

Generally, changes in the shares issued during the year are due to one or more of the following:

1. Issue of new shares during the year for cash or other assets.
2. Issue of new shares in the form of a bonus issue or share split.
3. Issue of new shares at a discounted price as a result of the exercise of a rights issue.
4. Consolidation of existing shares through a reverse split.
5. Issue of new shares from the conversion of potential ordinary shares such as convertible bonds or convertible preference shares.
6. Issue of new shares from the exercise of potential ordinary shares such as stock options issued to employees or creditors.
7. Contingently issuable shares become actual issues when conditions have been met.
8. Purchase of treasury shares and issue of previously purchased treasury shares.

page 1066

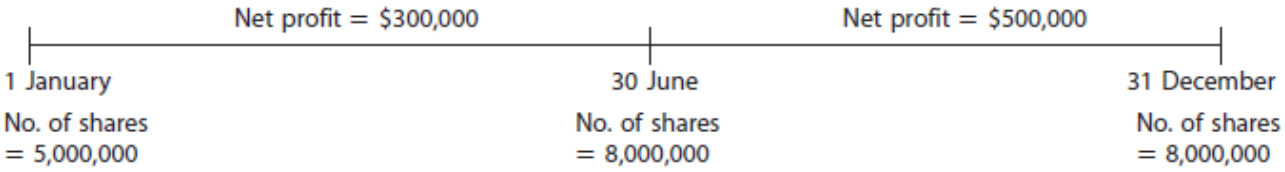
Issue of New Shares for Cash or Other Assets

The issue of new shares for cash or other assets increases the resources available to the entity. The additional resources have a positive impact on net earnings from the date they flow into the entity. Managers are expected to generate returns from the additional resources from the date the resources become available from the share issue.

Therefore, the number of shares has to be time-weighted. Illustration 12.2 shows how shares issued at fair value for cash are time-weighted.

ILLUSTRATION 12.2 Issue of new shares at fair value

Company A had issued share capital of 5,000,000 ordinary shares at the beginning of the year. On 30 June, it issued 3,000,000 shares at fair market value for cash. Net profit attributable to ordinary shares was $300,000 for the first six months and $800,000 for the full year.



$$\text{Basic EPS} = \frac{\$800{,}000}{(5{,}000{,}000 \times ½) + (8{,}000{,}000 \times ½)}$$

$$= \frac{\$800{,}000}{6{,}500{,}000}$$

$$= 12.3 \text{ cents}$$

Because the issue of new shares for cash increased the resources available to the entity, it had a positive effect on net profit from the date the cash was received (30 June). Therefore, the number of shares is the weighted average of outstanding balances during the year: 5,000,000 shares outstanding during the first six months and 8,000,000 shares outstanding during the next six months.

Issue of New Shares with No Inflow of Resources

One common way for an entity to reward its shareholders is to issue bonus shares or stock dividends, sometimes in addition to cash dividends. There are a number of possible reasons for the issue of bonus shares. Bonus shares may be issued to celebrate a special occasion such as the 50th anniversary of the founding of an entity. Some entities issue bonus shares instead of paying cash dividends in order to conserve cash for their growing businesses. Yet another reason for making a bonus issue is to improve the "liquidity" of the shares by increasing the number of shares available in the market.

Bonus shares are issued out of reserves such as capital reserves or retained earnings. Total shareholders' equity remains unchanged; what has changed is the composition of the shareholders' equity. There is an increase in share capital while reserves show a corresponding decrease. There is no inflow of resources to the entity and therefore, earnings are not affected by the issue of new shares.

Share splits are similar to bonus issues, as they also do not result in an inflow of resources. In a share split, the existing share is split into two or more shares. For example, a two-for-one split is the splitting of one existing ordinary share into two new ordinary shares. The fair value is halved in this case. Thus, a share split will result in an increase in the number of shares with the total paid-up capital and other reserves remaining unchanged. In contrast, a bonus issue results in an increase in the total paid-up capital and a reduction in other reserves. The difference is mainly of form and not of substance.

Bonus issues and share splits are not time-weighted as there is no change in the resources of the issuing entity. In calculating basic earnings per share, the new shares from bonus issues or share splits are deemed to be issued at the beginning of the current period and at the beginning of the earliest comparative period reported in the current financial statements. Thus, earnings per share calculations include the impact of bonus issues and share splits retrospectively. For example, in a calendar reporting year, if an entity makes a one-for-two bonus issue (issuing one new share for every two existing shares) on 1 November, the additional new shares are assumed to be in issue at 1 January. The rationale is that since the new shares are not accompanied by an inflow of resources and are issued from reserves, which are already in existence at the beginning of the year, there is no need to time-weight the new shares. Illustration 12.3 explains the impact of bonus issue on basic earnings per share for current and comparative periods.

ILLUSTRATION 12.3 Issue of bonus shares (or stock dividends)

Eastman Company had a paid-up share capital of $10,000,000 comprising 10,000,000 ordinary shares at the beginning of 20x3. Net profit attributable to ordinary shareholders for the year ended 31 December 20x3 and 20x4 were $2,000,000 and $2,600,000, respectively. On 30 June 20x4, the company declared a one-for-two bonus issue, the bonus shares being issued from capital reserves. For every one ordinary share owned, a shareholder subsequently had 1.5 ordinary shares. The total number of shares increased from 10,000,000 to 15,000,000.

	20x4	20x3
Basic EPS (cents)	17.33[a]	20[b]

[a] $2,600,000/15,000,000

[b] $2,000,000/10,000,000

It would appear that when compared with 20x3, the earnings per share in 20x4 had declined. However, this is not a true reflection of the performance of the company over the two years. Net profit increased in 20x4 without any corresponding inflow of new resources. The decline in EPS in 20x4 was due to the diluting effect of the issue of bonus shares. To facilitate a proper comparison, the 20x4 income statement should show a comparative figure for 20x3, adjusted for the bonus issue. That is, the bonus issue should be applied retroactively to the 20x3 comparative figure as follows:

	20x4	20x3 (restated)
Basic EPS	17.33 cents	13.33[c] cents

[c] $2,000,000/15,000,000

Consolidation of Existing Shares through a Reverse Split

A consolidation of ordinary shares is the opposite of a stock split. Hence, it is also sometimes called a reverse split as it reduces the number of ordinary shares outstanding without a corresponding outflow of resources. Since there are no resources flowing from a share consolidation (unlike a share buy-back where cash is paid to the holder of shares), time-weighting of the change in balance in shares is inappropriate. Instead, the share consolidation should be applied retrospectively, and comparative EPS information should be restated to allow comparability. The share consolidation is deemed to have occurred at the beginning of the earliest comparative period presented in the current financial

statements. For example, if two existing shares are consolidated into one new ordinary share (a one-for-two reverse split), the number of ordinary shares outstanding before the consolidation is divided by two to obtain the reduced number of ordinary shares. Comparative earnings per share is restated (multiplied by two to reflect the lower denominator in the earnings per share calculation) to facilitate comparison with current earnings per share.

Rights Issue at a Discount to Market Price

A rights issue is an issue of new shares to existing shareholders that is often at a discount to the prevailing market price. The entitlement of existing shareholders to a rights issue is such that after subscribing to the new shares, their proportionate interest in the entity after the rights issue remains the same as before the rights issue.

The total number of shares issued in a rights issue at a discount to market price can be viewed as comprising the following two components:

1. One component comprises the number of shares that would have been issued at the full market price to achieve the same total proceeds.
2. The other component comprises the number of shares that is deemed to be issued for no consideration or the "bonus element" as described in IAS 33 paragraph 27b.

The first component is equivalent to the number of shares that would have been issued if the issue had been made at the full market price. Since the market price is higher than the issue price, the number of shares to be issued is less than the entire rights issue. The residue (the second component) is deemed to be the shares issued for nil value, or bonus shares. Thus, a rights issue has a bonus element in it. Illustration 12.4 explains the determination of the two components in a rights issue.

page 1069

ILLUSTRATION 12.4 Rights Issue

On 30 September 20x4, Atlantis Corporation made a one-for-two rights issue at a subscription price of $1.50 per share to existing shareholders. The market price immediately before the exercise of the rights issue was $3.00. Atlantis Corporation's paid-up capital consisted of 10,000,000 shares as at 1 January 20x3. The company reported net profit attributable to ordinary shareholders of $2,500,000 for the year ended 31 December 20x4 and $2,400,000 for the year ended 31 December 20x3.

The following points should be noted:

1. The total proceeds from the rights issue was $7,500,000 (5,000,000 new shares at $1.50 per share).
2. If the issue was made at the full market price, only 2,500,000 new shares needed to be issued ($7,500,000 ÷ $3).
3. The rights issue therefore was made up of the following:

Total new shares issued	5,000,000
Comprising:	
Shares deemed issued at full market price	2,500,000
Shares deemed issued as bonus shares	2,500,000
	5,000,000

Alternatively, using reasoning underlying the treasury method, the company needed to buy back 2,500,000 shares from the open market to issue to shareholders, with the proceeds it collected from the rights issue of $7,500,000. An additional 2,500,000 shares are issued as bonus shares. The bonus issue factor is 1.2 (15,000,000/12,500,000) shares for every 1 existing share held. The bonus issue factor should be applied retrospectively to outstanding shares before the rights issue.

4. A rights issue also includes a full issue of shares for consideration. There is an inflow of new resources as cash is raised, which is used to acquire additional productive assets or to reduce debt, or both. Hence, the entity's earnings from 30 September onward are positively affected by the rights issue. This means that the rights issue should be time-weighted by $^{3}/_{12}$ for the full issue.

Thus, we can calculate the weighted average number of shares by applying the bonus issue element retroactively and time-weighting the full issue of shares.

From 1 January 20x4 to 30 September 20x4	10,000,000 × 1.2 × $^{9}/_{12}$ =	9,000,000
From 1 October 20x4 to 31 December 20x4	15,000,000[a] × $^{3}/_{12}$ =	3,750,000
Weighted average number of shares		12,750,000

[a] The 15,000,000 shares include the bonus issue element.

$$\text{Basic EPS (20x4)} = \frac{\$2{,}500{,}000}{12{,}750{,}000}$$
$$= 19.6 \text{ cents}$$

The bonus shares should also be adjusted to prior year EPS calculation.

From 1 January 20x3 to 31 December 20x3 . . . . . 10,000,000 × 1.2 = 12,000,000

$$\text{Basic EPS (20x3)} = \frac{\$2{,}400{,}000}{12{,}000{,}000}$$
$$= 20\%$$

IAS 33 provides another method of determining the bonus issue factor. The calculation of the basic earnings per share requires the determination of the bonus issue element in the rights issue. This is derived by dividing the full market price by the theoretical ex-rights price as follows:[7]

$$\text{Bonus issue factor in rights issue} = \frac{\text{Full market price}}{\text{Theoretical ex-rights price}}$$

The theoretical ex-rights price is the market's adjustment to the full market price for the dilution arising from the issue of the rights at a discounted price. The rights issue does not preserve the full market price and the theoretical ex-rights price is lower than the full market price before the rights are exercised. In this example, the theoretical ex-rights price is equal to $2.50 per share.

$$\text{Theoretical ex-rights price} = \frac{\text{Fair value of shares after the rights}}{\text{Total number of shares after the rights issue}}$$

$$= \frac{\text{Value of existing shares} + \text{Proceeds from the rights issue}}{\text{Total number of shares after the rights issue}}$$

$$\text{Theoretical ex-rights price} = \frac{(\$3 \times 10{,}000{,}000) + (\$1.5 \times 5{,}000{,}000)}{10{,}000{,}000 + 5{,}000{,}000}$$

$$= \frac{\$37{,}500{,}000}{15{,}000{,}000}$$

$$= \$2.50 \text{ per share}$$

The bonus issue factor in the rights issue is \$3/\$2.50, which is equal to 1.2. Thus, one share issued before the rights issue is equal to 1.2 shares after the rights. The bonus issue factor may be determined through the treasury method that is suggested in this text, or the ratio of the full market price to the theoretical ex-rights price.

New Issue of Shares from the Conversion of Debt

The capital structure of the issuer changes when the holders of convertible debt exercise their conversion rights. On conversion, equity increases while debt decreases. Although there is no inflow of cash, there is a reduction of debt, which increases net assets of the issuer. Earnings increase as interest expense on the converted debt is saved. Therefore, the new issue of ordinary shares from the conversion of debt has to be time-weighted. Illustration 12.5 is an example of the impact of conversion of debt on basic earnings per share.

page 1071

ILLUSTRATION 12.5 Additional shares issued on the conversion of debt

Capital Ltd had the following capital structure at 1 January 20x5:

1. 10,000,000 ordinary shares
2. \$10,000,000 8% convertible bond

Additional information:

(a) Conversion ratio of bond: every \$1,000 nominal value of bond was convertible into 500 ordinary shares.

(b) On 1 July 20x5, 40% of the bond holders exercised their conversion rights. Thus, 2,000,000 new shares were issued (40% × \$10,000,000/\$1,000 × 500).

(c) Net profit for the year ended 31 December 20x5 was \$3,300,000 (which included interest expense saved because of the partial conversion of the bonds).

$$\text{Weighted average number of shares} = (10{,}000{,}000 \times {}^{6}/_{12}) + (12{,}000{,}000 \times {}^{6}/_{12})$$

$$= 11{,}000{,}000$$

$$\text{Basic EPS} = \frac{\$3{,}300{,}000}{11{,}000{,}000}$$

$$= 30 \text{ cents}$$

Contingently Issuable Shares

Contingently issuable shares are "ordinary shares issuable for little or no cash or other consideration upon the satisfaction of specified conditions in a contingent share agreement" (IAS 33:5). Contingently issuable shares arise from contingent share agreements usually associated with business combinations and buyouts. The conditions can be quite varied, but the more common ones pertain to the attainment of a certain level of earnings or sales or market price of the entity's shares, or the number of sales outlets opened. Such shares are treated as outstanding (although they are yet to be issued), and are time-weighted from the date when all necessary conditions are satisfied, that is, the contingency events have occurred.[8] Illustration 12.6 is an example of how contingently issuable shares are incorporated in basic earnings per share.

ILLUSTRATION 12.6 Contingently issuable shares

On 1 January 20x5, Alpha Company acquired Beta Corporation, a franchisor for a reputable brand of footwear. The consideration was payable entirely in cash. The terms of the acquisition included a contingent share agreement that required Alpha Company to issue 10,000 additional new shares to the shareholders (the vendors) of Beta Corporation for each franchise contract secured in 20x5. One contract was secured on 1 June 20x5 and another on 1 December 20x5. Alpha's share capital comprised solely of 100,000 ordinary shares. There had been no issue of new ordinary shares during the year. Alpha Company's interim financial statements were prepared half-yearly.

page 1072

	First half-year	Second half-year	Full year
Net profit attributable to ordinary shareholders	$138,000	$250,000	$388,000
Ordinary share outstanding	100,000	100,000	100,000
Contingently issuable shares	1,667[a]	11,667[b]	6,667[c]
Total shares	101,667	111,667	106,667
Basic earnings per share	$1.36	$2.24	$3.64

[a] 10,000 shares × $^1/_6$ (one month for the first half-year)

[b] 10,000 shares (issuable as at 1 July 20x5) + (10,000 shares × $^1/_6$) (one month for the second half-year)

[c] (10,000 × $^7/_{12}$) + (10,000 × $^1/_{12}$)

Even though the contingent shares were not issued as of 31 December 20x5, they are included in the calculation of basic EPS when the necessary conditions (opening of stores) are satisfied.

The satisfaction of the necessary conditions are assessed at the end of each reporting period — interim periods ended 30 June 20x5 and 31 December 20x5 and full year ended 31 December 20x5. The summation of the EPS of the two half-periods is not equal to the EPS of the cumulative full-year period as the time-weighting differs for the half-year and the full year.

Share repurchase and treasury shares

It is not uncommon for an entity to embark on a share repurchase exercise to buy back its own shares from the market. Paragraph 33 of IAS 32 requires the entity that reacquires its own equity instruments to deduct those instruments (‘‘treasury shares") from equity. No gain or loss should be recognized in the profit or loss on the purchase, sale, issue, or cancellation of its own equity instruments and the consideration paid or received for the shares bought back is

recognized directly in equity.[9] Subsequent to the shares repurchase, these shares are no longer outstanding, that is, they are no longer available in the market. Accordingly, they should not be included in the calculation of the weighted average number of ordinary shares. If these shares were bought back during the year, they should be time-weighted as these shares were outstanding for part of the year. Insofar as the prior year is concerned, no adjustment should be made for the shares bought back during the current year as they were outstanding for the entire previous year. Conversely, for shares that were repurchased and held in treasury since the beginning of the previous financial year, should not be included in the calculation of the weighted average number of ordinary shares for both prior and current period as they were no longer outstanding since the previous period. The following illustrative example demonstrates the above principle.

ILLUSTRATION 12.7 Impact of treasury shares on calculation of weighted average number of ordinary shares

Company X has issued share capital of 4,000,000 ordinary shares as at 31 December 20x5. Profit for the year attributable to ordinary shareholders amounted to $1.2 million. In 20x3, a total of 500,000 were repurchased from the market under the company's share repurchase mandate and held in treasury. On 31 August 20x5, the company bought back another 800,000 shares from the market. Similarly, these shares are not cancelled and are held in treasury. The following table shows the movement in the share capital account.

		Number of shares
1 January 20x5	Balance as at beginning	4,000,000
	Less: Treasury shares (bought in 20x3) .	(500,000)
		3,500,000
31 August 20x5	Shares repurchased during the year . . .	(800,000)
31 December 20x5	Balance as at end	2,700,000

Calculate weighted average number of ordinary shares

	Time-weighting	Number of shares
Shares in issue		4,000,000
Less: Treasury shares	(500,000) x 12/12	(500,000)
		3,500,000
Shares repurchased during the year	(800,000) x 4/12	(266,667)
Weighted average number of shares		3,233,333

Calculate basic earnings per share

$$\text{Basic EPS} = \frac{\text{Profit attributable to ordinary shareholders}}{\text{Weighted average number of ordinary shares}}$$
$$= \frac{1{,}200{,}000}{3{,}233{,}333}$$
$$= 0.37 \text{ or } 37 \text{ cents}$$

Explanatory note:

In respect of the 800,000 shares repurchased on 31 August 20x5, the factor of $^{3}/_{12}$ is applied to the 800,000 shares as these shares were no longer outstanding for 4 out of the 12 months for 20x5 (i.e., from September to December 20x5). If the EPS for 20x4 is calculated, these shares will not be time-weighted in the calculation of the weighted average number of ordinary shares as they were outstanding for the entire year in 20x4. Conversely, the shares held in treasury of 500,000 will be time-weighted and adjusted for the purpose of calculating the weighted average number of shares in 20x4 as they were no longer outstanding for the full year in 20x4.

DILUTED EARNINGS PER SHARE

In a complex capital structure, an entity issues both ordinary shares and potential ordinary shares. Potential ordinary shares are financial instruments or contracts that give rise to ordinary shares at the exercise or conversion by the holder or on satisfaction of specified conditions. The following situations give rise to potential ordinary shares, requiring the computation of diluted earnings per share if the potential ordinary shares are dilutive:

1. The entity has outstanding potential ordinary shares in the form of options and warrants or convertible instruments.
2. The entity has contingently issuable shares, and the conditions have not been met.
3. The entity has entered into contracts that may be settled in ordinary shares or cash, either at the entity's discretion or the holder's discretion.

The existence of potential ordinary shares leads to possible dilution in earnings per share at some future date. Dilution is "a reduction in earnings per share or an increase in loss per share resulting from the assumption that convertible instruments are converted, options or warrants are exercised, or that ordinary shares are issued upon the satisfaction of specified conditions" (IAS 33:5). Diluted earnings per share is the performance metric that shows earnings per share under the assumption of full conversion or exercise of options of potential ordinary shares or satisfaction of specified conditions. In this sense, diluted earnings per share is a hypothetical figure that is based on the "worst case scenario" of issuance from potential ordinary shares. Why is there a need to report diluted earnings per share that is based on assumptions?

Consider the following situation. On 1 January 20x0, an entity with 10,000,000 units of ordinary shares outstanding issued a $10,000,000 bond that gave the holder the right to convert every $1,000 bond into 500 ordinary shares. The entity used the proceeds of the bond issue to invest in a project that increased the net profit of the entity. On 1 January 20x3, all the holders of the bond exercised their conversion rights. The following table shows the net earnings of the entity and the earnings per share for the period 20x0 to 20x3.

Year	Net profit	Number of ordinary shares	Basic EPS
20x0	$5,000,000	10,000,000	50 cents
20x1	$6,000,000	10,000,000	60 cents
20x2	$7,000,000	10,000,000	70 cents
20x3	$7,500,000	15,000,000[a]	50 cents

[a] Full conversion on 1 January 20x3.

For the financial years 20x0 to 20x2, earnings per share increased until 20x3 when it dropped to the level in 20x0, even though net profit continued to increase. If basic earnings per share is the only metric disclosed, some, if not all, of the shareholders of the entity would probably find this unexpected decrease in basic earnings per share to be a disappointment. This surprise could be avoided if the entity had reported the dilutive effect of the convertible bond on earnings per share from 20x0 onward. As the convertible bond had been in existence from 20x0, the diluted earnings per share would have shown an increasing trend of profitability. While basic earnings per share shows the effects of actual conversions, diluted earnings per share shows the assumed effects of actual conversions. In this respect, diluted earnings per share is a more timely measure of performance as it incorporates future dilution from existing potential ordinary shares in the earnings per share calculation.

Thus, the purpose of requiring the disclosure of diluted earnings per share is to "provide a measure of the interest of each ordinary share in the performance of an entity – while giving effect to all dilutive potential ordinary shares outstanding during the period" (IAS 33:32). The disclosure of diluted earnings per share serves to provide shareholders with a predictor of what the earnings per share would be if all potential ordinary shares give rise to ordinary shares. It is thus considered useful and relevant information for two reasons. First, it enhances comparability over time of earnings per share information of entities with complex capital structures. By incorporating maximum dilution from potential ordinary shares, diluted earnings per share focuses on profitability rather than the timing of actual conversions. Second, it provides an indication of the possible dilutive impact on share price resulting from the future increase in the number of ordinary shares.

page 1075

Diluted earnings per share includes only the dilutive effects of potential ordinary shares. If the assumed conversion or exercise of potential ordinary shares increases rather than decreases earnings per share (or reduces loss per share), the potential ordinary shares are said to be "anti-dilutive." Potential ordinary shares that are anti-dilutive are excluded from the calculation of diluted earnings per share (IAS 33:41). Diluted earnings (loss) per share should never be higher (lower) than basic earnings per share. When anti-dilution occurs, the diluted earnings per share is reported to be the same as the basic earnings per share.

IAS 33 requires the use of profit or loss from continuing operations attributable to the parent entity as the "control number" to determine whether potential ordinary shares are dilutive or anti-dilutive (IAS 33:42). The number of potential ordinary shares used to calculate diluted earnings per share from continuing operations is used to calculate other diluted earnings per share, namely diluted earnings per share from discontinued operations and diluted earnings per share attributable to ordinary shareholders. The significance of the control number comes into play when an entity reports a loss from discontinued operations while reporting a profit on continuing operations. The diluted earnings per share will be dilutive for the continuing operations but anti-dilutive for the discontinued operations. Using the profit or loss from continuing operations as the control number means that the same number of potential ordinary shares used in calculating the diluted earnings per share from profitable operations is also used to calculate the other reported diluted earnings per share, notwithstanding that the latter is anti-dilutive. Illustration 12.8 shows how potential ordinary shares can cause loss per share to be anti-dilutive.

ILLUSTRATION 12.8 Profit from continuing operations and overall loss

For the year ended 31 December 20x4, Regis Corporation reported the following:

Profit from continuing operations	$3,800,000
Loss from discontinued operations	(4,200,000)
Loss attributable to ordinary shareholders	$ (400,000)

Regis Corporation had 10,000,000 ordinary shares and stock options outstanding throughout the year that potentially give rise to 1,000,000 ordinary shares to be issued without any consideration. Under the treasury method, the stock options have no impact on earnings when exercised. Regis Corporation had no other potential shares such as convertible preference shares or convertible debt.

Basic earnings per share

Earnings (loss) per share from continuing operations [$3,800,000 ÷ 10,000,000]	$ 0.38
Earnings (loss) per share attributable to ordinary shareholders [($400,000) ÷ 10,000,000]	$(0.04)

Diluted earnings per share

Diluted earnings (loss) per share from continuing operations [$3,800,000 ÷ 11,000,000]	$ 0.345
Diluted earnings (loss) per share attributable to ordinary shareholders [($400,000) ÷ 11,000,000]	$(0.036)

From the above calculations, the stock options are not anti-dilutive with reference to profit from ordinary operations although they are anti-dilutive with reference to overall loss of the entity. As profit from continuing operations is the control number, stock options is not deemed anti-dilutive. Hence, the diluted earnings per share for continuing operations and for the entity as a whole incorporate the additional shares arising from the stock options. Diluted loss per share is lower than basic loss per share. This anomaly arises because of the overall loss position of the entity. Increase in the number of shares issued reduces the loss per share. However, in most other cases where the entity is profitable, the general principle holds that diluted earnings per share should never be greater than the basic earnings per share.

Adjustments to the Computation of Diluted Earnings per Share

The computation of diluted earnings per share requires adjustments to be made to both the numerator and denominator; assumptions must also be made with regard to the timing of the conversion of the potential ordinary shares.

Adjustments to the Numerator of Diluted Earnings per Share

The assumed conversion or exercise of potential ordinary shares results in avoidance or savings of expenses that affect the earnings numerator:

1. Dividends on convertible preference shares are not deducted from net profit;
2. After-tax interest and amortization expenses on convertible bond are added back to net profit after tax; and
3. Any other expense (income) relating to potential ordinary shares are added back to (deducted from) net profit after tax.

For example, if the potential ordinary shares are in the form of convertible preference shares, the dividends on the convertible preference shares are added to the profit attributable to the ordinary shareholders of the parent entity. If the potential ordinary shares are in the form of convertible bonds, the interest on the bonds (net of tax) is similarly added to the profit attributable to the ordinary shareholders of the parent entity. The rationale is that if all convertible preference shares or convertible bonds are converted into ordinary shares, there will be no preference dividends or interest to be paid. The expenses associated with potential ordinary shares that are added back to net profit after tax include transaction costs and the amortization of premiums or discounts accounted for in accordance with the effective interest method.

Adjustments to the Denominator of Diluted Earnings per Share

The denominator for the computation of diluted earnings per share is the sum of the weighted average number of shares of basic earnings per share and the weighted average number of ordinary shares that is issued upon the assumed conversion or exercise of all the dilutive potential ordinary shares at the beginning of the reporting period or the date of issue of the potential ordinary shares, whichever is later (IAS 33:36).

Assumptions

Dilutive potential ordinary shares are assumed to have been converted into ordinary shares at the beginning of the reporting period (if the potential ordinary shares have been issued at the beginning of the period or in a prior period), or at the date of the issue of the potential ordinary shares (if the potential ordinary shares are issued during the current period). If the potential ordinary shares are issued during the year, the number of ordinary shares arising from the assumed conversion or exercise must be time-weighted from the date of issue to the end of the reporting period. For example, Company A has 10,000 convertible preference shares issued some years ago; on 1 July 20x5, it issued a $10,000 convertible debt. The financial year end is 31 December. To determine the weighted average number of shares for diluted earnings per share, the convertible preference shares are assumed to be converted on 1 January 20x5, and the convertible bonds are assumed to be converted ordinary shares on 1 July 20x5. Thus, for the convertible debt, the number of ordinary shares assumed to be issued on conversion has to be time-weighted by half for the period from 1 July 20x5 to 31 December 20x5. However, a full year's weighting applies to convertible preference shares as they were in existence as at 1 January 20x5. Similarly, cancelled or lapsed potential ordinary shares are time-weighted only for the portion of the period during which they are outstanding (IAS 33:38).

Listed entities usually report their earnings every quarter or half-yearly, in addition to the annual reporting. As a consequence, dilutive potential ordinary shares have to be determined independently for each period presented. The number of dilutive potential ordinary shares included in the year-to-date earnings per share calculation should not be a summation of the weighted average dilutive potential ordinary shares included in each interim computation (IAS 33:37).

Calculation of Diluted EPS When Potential Ordinary Shares Are Options and Warrants

Options[10] and warrants are instruments that give their holder the right but not the obligation to subscribe for shares in the issuing entity at a specified price for a specified period. For the purpose of calculating diluted earnings per share, the assumption is made that all options and warrants are exercised either at the beginning of the period or, if the instruments are issued during the period, at the date of issue. Call options and warrants are dilutive only if they are "in-the-money," that is, the average market price of ordinary shares during the period exceeds the exercise price. When the option or warrant is in-the-money, the holder gains by exercising his right to subscribe for ordinary shares at a price that is lower than the market price.

Treasury Method

The amount of the dilution to the net assets of the issuer is the excess of the average market price of ordinary shares during the period over the exercise (or issue) price. The method of calculating the number of dilutive shares for options and warrants is also known as the treasury method. Under this method, the total number of new shares that will be issued upon the exercise of the options or warrants is deemed to be made up of two components, which is analogous to the components in a rights issue:

1. *Shares issued for full consideration*. This component comprises the number of shares that would have been issued at the average market price of ordinary shares during the period to realize the total proceeds from the

issue. This component is assumed to be fairly priced and is considered to be neither dilutive nor anti-dilutive. The shares in this portion are ignored in the calculation of diluted earnings per share.

2. *Shares issued for no consideration*. This component is made up of the difference between the total number of shares issued at the exercise price and the number of shares that would have been issued at the average market price from total proceeds received (determined in part (1) above). As with bonus issues, shares issued for no consideration do not result in an inflow of resources and have no effect on the earnings of the entity. Therefore, these shares are considered to be dilutive and added to the denominator in the calculation of diluted earnings per share, without any adjustment to the numerator.

The treasury method assumes that the issuing entity would buy back shares from the open market with the proceeds it collects from the option holders. If the option is "in-the-money," the number of repurchased shares would be insufficient to issue to the option holders. Additional shares would be issued to option holders for free. The treasury method applies to warrants as well. Arithmetically,

$$\text{Total number of shares issuable to option holders} = N$$

$$\text{Number of shares repurchased in the open market at market price (MP) from proceeds received from the issue of options at exercise price (EXP)} = \frac{N \times EXP}{MP}$$

$$\text{Bonus issue element in a stock option that is "in-the-money"} = N - \frac{(N \times EXP)}{MP}$$

Note that the market price is the average for the period in which the stock options are outstanding and not the market price at the end of the period. The assumption is that the stock options are exercisable into ordinary shares at any time throughout the period.

Employee share options with fixed or determinable terms are deemed as potential ordinary shares, even though they may be contingent on vesting[11] (IAS 33:48). These potential ordinary shares are treated as outstanding on the grant date.[12]

The number of ordinary shares to be issued on the assumed conversion of dilutive potential ordinary shares depends on the terms on which these potential ordinary shares are issued. There may be more than one basis of conversion, in which case the calculation applies the most advantageous conversion rate or exercise price from the perspective of the holder of the potential ordinary shares (IAS 33:39). Illustration 12.9 shows the application of the treasury method to a complex capital structure with warrants.

ILLUSTRATION 12.9 Complex capital structure with options

The following information pertains to Supreme Corporation for the year ended 31 December 20x6.

Net profit for the year	$2,000,000
Preference shares	None
Ordinary shares outstanding	2,000,000
Shares to be issued under options	400,000
Date options issued	1 January 20x6
Exercise price of options during 20x6	$6

Average market price of one ordinary share during 20x6	$8
Proceeds from the assumed exercise of 400,000 options	$2,400,000

There are no other potential ordinary shares.

Calculation of diluted earnings per share

Shares to be issued on exercise of options	400,000
Shares that would have been issued at fair market value ($2,400,000 ÷ $8).	(300,000)
Shares deemed to be issued for no consideration	100,000

$$\text{Diluted EPS} = \frac{\$2{,}000{,}000}{2{,}000{,}000 + 100{,}000} = \$0.95$$

Calculation of Diluted EPS When Potential Ordinary Shares Are Convertible Instruments

Convertible instruments that are potential ordinary shares include convertible preference shares and convertible debt. The method of computing diluted earnings per share for convertible instruments is known as the *if-converted method*. The following points should be noted:

- All convertible instruments are assumed to be converted at the beginning of the year, or if the convertible instruments are issued during the period, at the date of issue. This applies even if there has been partial conversion during the period.
- Preference dividends or interest (net of tax) relating to the convertible instruments are added back to the net profit attributable to ordinary shareholders.
- If the ratio of preference dividends declared (or accumulated) or interest (net of tax) divided by incremental ordinary shares obtainable on conversion is more than the basic earnings per share, the convertible preference shares or convertible debt is anti-dilutive.

Illustration 12.10 shows the application of the if-converted method to convertible preference shares.

ILLUSTRATION 12.10 Potential ordinary shares that are convertible securities

Company A recorded a net profit of $2,320,000 for the year ended 30 June 20x5. The company had 50,000,000 ordinary shares outstanding at the beginning of the year. No new shares were issued during the year. Company A had an outstanding of 5,000,000 6.4%[13] cumulative preference shares that are convertible into ordinary shares at the ratio of one preference share for one ordinary share.

Net profit for the year ended 30 June 20x5	$2,320,000
Less preference dividends (5,000,000 × 0.064)	(320,000)
Net profit attributable to ordinary shareholders	$2,000,000

Basic earnings per share ($2,000,000/50,000,000)	4 cents
Diluted earnings per share ($2,320,000/55,000,000)	4.22 cents

Since the diluted earnings per share is greater than the basic earnings per share, the convertible preference shares are anti-dilutive and excluded from the calculation of diluted earnings per share.

Another approach to test whether or not the convertible preference shares are anti-dilutive is to compare the earnings per preference share with and without conversion. Without conversion, the preference shareholders earn 6.4 cents ($320,000/5,000,000 shares) in the form of preference dividends. With conversion, the preference shareholders earn 4.22 cents per share (assuming a 100% dividend payout). It is very unlikely, therefore, that the preference shareholders would wish to convert their preference shares into ordinary shares.

Therefore, the cumulative preference shares are anti-dilutive.

Contingently Issuable Shares

The general guidelines for the inclusion of contingently issuable shares in the calculation of diluted earnings per share are as follows:

1. If the conditions are met during the period (that is, the contingent events have occurred), the contingent shares are included in the calculation of diluted earnings per share from the beginning of the period (or from the date of the contingent share agreement, if later).[14]
2. If the conditions are not met during the period, the number of contingently issuable shares assumed to be issued is the number of shares that will be issuable if the end of the period is the end of the contingency period (IAS 33:52). IAS 33 paragraph 52 requires an assessment of the number of ordinary shares issuable under contingent arrangements, assuming that current conditions as at the end of the reporting period are the conditions as at the end of the contingency period.

Consider the cases of contingently issuable shares in Illustrations 12.11 and 12.12.

ILLUSTRATION 12.11 Contingently issuable shares when conditions have been met

Refer to Illustration 12.6. Assume that there are no other potential ordinary shares other than the contingently issuable shares.

	First half	Second half	Full year
Net profit	$138,000	$250,000	$388,000
Outstanding ordinary shares	100,000	100,000	100,000
Contingently issuable shares	10,000[a]	20,000[b]	20,000[c]
Total shares	110,000	120,000	120,000
Diluted earnings per share	$ 1.25	$ 2.08	$ 3.23

[a] 10,000 × $^{5}/_{6}$ (contingent share issue agreement starts on 1 January 20x5)

[b] 10,000 + 10,000

[c] 10,000 + 10,000 (contingent share issue agreement starts on 1 January 20x5)

For the computation of diluted earnings per share, the condition is met and the contingently issuable shares are included in the denominator from the beginning of the period (since the contingent share issue agreement commences 1 January 20x5).

ILLUSTRATION 12.12 Contingently issuable shares when conditions have not been met

Delta Corporation entered into a contingent share issue agreement on 1 January 20x5 as part of the compensation plan for its chief executive officer. The terms of the agreement, which ended on 31 December 20x6, required Delta Corporation to issue a bonus of one ordinary share for every $2 of year-to-date consolidated, after-tax net profit in excess of $1,000,000 during the agreement period. Delta Corporation had 5,000,000 ordinary shares outstanding for the entire year ended 31 December 20x5, and had no outstanding options, warrants or convertible securities. Delta Corporation prepares financial statements on a quarterly basis. The consolidated year-to-date after-tax net profit of Delta Corporation and its subsidiaries for the four quarters of 20x5 is as follows:

Quarter ended	Year-to-date consolidated after-tax net profit
31 March 20x5	$ 800,000
30 June 20x5	$1,200,000
30 September 20x5	$1,000,000
31 December 20x5	$1,500,000

In this scenario, the condition is the attainment of a specified amount of profit. The amount has been attained for the year ended 31 December 20x5, but there is no assurance that it will be maintained beyond the end of the reporting period for an additional period. In this case, the calculation of diluted earnings per share is based on the number of ordinary shares that will be issued if the profit for the current reporting period is the profit for the contingency period. The calculation is based on the assumption that the profit attained will remain unchanged until the end of the contingency period, that is, the expiration of the agreement. However, the computation of basic earnings per share will not include the contingently issuable shares because all necessary conditions have not been satisfied and the profit may change in the year ending 31 December 20x6. The number of shares to be included in diluted earnings per share for each quarter and for the full year is as follows:

	First quarter 20x5	Second quarter 20x5	Third quarter 20x5	Fourth quarter 20x5	Full year 20x5
Basic EPS:					
Numerator	$ 800,000	$ 400,000	$(200,000)	$ 500,000	$1,500,000
Denominator:					
Ordinary shares outstanding	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Basic EPS (cents)	16	8	(4)	10	30
Diluted EPS:					
Numerator	$ 800,000	$ 400,000	$(200,000)	$500,000	$1,500,000
Denominator:					
Ordinary shares outstanding	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Contingency shares ..	0[a]	100,000[b]	0	250,000[c]	250,000[d]
Total shares	5,000,000	5,100,000	5,000,000	5,250,000[c]	5,250,000
Diluted EPS (cents) ..	16	7.8	(4)	9.5	28.6

[a] Year-to-date profit is less than $1,000,000

[b] [($1,200,000 – $1,000,000) ÷ 2] × 1

[c] [($1,500,000 – $1,000,000) ÷ 2] × 1

[d] [($1,500,000 – $1,000,000) ÷ 2] × 1 (Contingency shares included as of beginning of period)

Contracts That May Be Settled in Ordinary Shares or Cash

Potential ordinary shares are present when an entity enters into a contract that gives the issuer or the holder the option for settlement of the contract in ordinary shares or cash. If the option lies with the entity, the presumption is that the contract will be settled in ordinary shares and the resulting potential ordinary shares are to be included in diluted earnings per share if the shares are dilutive (IAS 33:58).

If the option for settlement lies with the holder of the instrument, the more dilutive of the two options of cash settlement and share settlement is assumed in calculating earnings per share (IAS 33:60). An example of such an instrument is a written put option. If the written put option is "in-the-money" during the period (that is, the exercise price is above the average market price for that period), the potential dilutive effect on earnings per share is to be calculated under a methodology in IAS 33 paragraph 63 that is essentially the treasury method for a share buy-back arrangement. The methodology assumes that at the beginning of the period, sufficient ordinary shares are issued at the average market price during the period to raise funds to finance the share buy-back. The incremental ordinary shares is the difference between the shares issued and the shares bought back. In arithmetical terms,

page 1083

Total number of shares to be bought back under a written put option = N
Exercise price = EXP
Market price = MP
Number of shares to be issued to finance the share buy-back = $\frac{N \times EXP}{MP}$

$$\text{Incremental ordinary shares from a written put option} = \text{Number of shares to issue in the open market to finance share buy-back} - \text{Number of shares to be bought back}$$

$$= \frac{(N \times EXP)}{MP} - N$$

Anti-dilution Sequencing

Entities often have more than one type of potential ordinary shares outstanding at any one time. For example, an entity may have outstanding warrants, convertible debt, and convertible preference shares. This gives rise to the issue of whether the different series of potential ordinary shares should be tested for dilution individually or in aggregate. As the purpose of reporting diluted earnings is to report the maximum dilution (a worst case scenario), it is necessary to test for the dilution effect individually and sequentially. This is because while a potential ordinary share may be dilutive on its own, it may be anti-dilutive when included with other potential ordinary shares. Hence, the inclusion of this potential ordinary share may not result in maximizing the reported diluted earnings per share.

Thus, in order to achieve maximum dilution, the order of the inclusion of potential ordinary shares is important. The sequence to achieve maximum dilution starts with the most dilutive potential ordinary share, followed by the next most dilutive, and ends with the least dilutive. The process stops when the inclusion of a potential ordinary share increases the diluted earnings per share.

As discussed earlier, both the numerator and the denominator in the earnings per share computation have to be adjusted for the effects of the assumed conversion or exercise of potential ordinary shares. The dilutive effect is determined by comparing the ratio of incremental earnings to the incremental number of shares or the "earnings per incremental share" (EPIS). The potential ordinary share with the lowest impact on the numerator (earnings) and the highest impact on the denominator (the number of shares) has the lowest earnings per incremental share and is the most dilutive. In this respect, options and warrants are the most dilutive because their earnings per incremental share is nil as they have no effect on the numerator (earnings), but have an effect on the denominator (increase in the number of shares).

The approach to determining the diluted earnings per share is summarized as follows:

1. Compute the basic earnings per share.
2. Compute the EPIS for each class of potential ordinary shares and rank them from the most dilutive to the least dilutive.
3. The potential ordinary share with the lowest EPIS is the most dilutive as the positive impact on earnings relative to the increase in hypothetically issued shares is the lowest among the potential ordinary shares.
4. According to the ranking of the EPIS, introduce the potential ordinary shares from most dilutive to least dilutive to determine the provisional diluted earnings per share. page 1084
5. The process stops when all the potential ordinary shares have been included or when the inclusion of the next ranked potential ordinary share results in a higher diluted earnings per share than the previous provisional diluted earnings per share. The reported diluted earnings per share is the lowest possible figure and must never be higher than the basic earnings per share ("the benchmark"). If the provisional diluted earnings per share, after incorporating a potential ordinary share, is equal to or higher than the previously determined provisional diluted earnings per share, that potential ordinary share is anti-dilutive and is excluded from the calculation of diluted earnings per share.

Illustration 12.13 provides a comprehensive example of the calculation of diluted earnings per share in an entity with multiple potential ordinary shares.

ILLUSTRATION 12.13 Comprehensive example on diluted earnings per share

The following information pertains to Eastwind Enterprises Ltd for the year ended 31 December 20x4.

Net profit attributable to ordinary shareholders in 20x4	$2,000,000
Ordinary shares outstanding	3,000,000

Eastwind has the following potential dilutive securities outstanding as at 31 December 20x4:

(a) In December 20x3, Eastwind granted 200,000 share options to certain executives. Each option entitles the holder to subscribe for one ordinary share at a price of $1.50 per share. The average market price of Eastwind's share during 20x4 was $2. The options were exercisable one year after the grant date. None of the options had been exercised as at 31 December 20x4.

(b) In October 20x3, Eastwind issues 600,000 8% non-cumulative convertible preference shares at $10 per share. The conversion ratio is three preference shares for four ordinary shares of $1 each. Preference dividends (assumed to be tax-exempt) are paid half-yearly. None of the preference shares had been converted as of 31 December 20x4.

(c) On 1 January 20x4, Eastwind issues at par $5,000,000 convertible bonds with a coupon rate of 3% per annum. The bonds mature on 31 December 20x5. Interest on the bonds is payable semi-annually in arrears on 30 June and 31 December. At the time of issue, a similar bond with no conversion option would have to be issued at an interest rate of 6% per annum. Each $1,000 bond is convertible to 500 ordinary shares. None of the bonds has been converted. Eastwind accounts for the convertible bonds in accordance with the requirements of IAS 32.

Tax rate is 20%. Amortization of the bond discount is a non-tax deductible expense. However, IAS 12 requires the recognition of deferred tax expense on the amortization expense. The ranking of potential ordinary shares, convertible preference shares, and convertible bonds is as follows:

page 1085

	Numerator effect	Denominator effect	Earnings per incremental share (EPIS)	Rank
Share options	0	50,000 (Note 1)	0	1
Convertible preference shares	$480,000 (Note 2)	800,000	$0.60	3
Convertible bonds	$228,221 (Note 3)	2,500,000	$0.091	2

Note 1: Number of shares deemed issued for no consideration = 200,000 – ($1.5 × 200,000)/$2 = 50,000

Note 2: Dividends on convertible preference shares = 600,000 × $10 × 8% = $480,000

Note 3: The following computation of the earnings effect due to the assumed conversion of the convertible bonds takes into account the requirements of IAS 32, which requires the debt and equity components of the bond to be separated.

Fair value of bond (without conversion option):

Present value of interest payments [$75,000 × 3.7171^{15}]	$ 278,783
Present value of principal at maturity [$5,000,000 × 0.8885^{16}]	4,442,500
Present value of bond	$4,721,283

Nominal value of bond	$5,000,000
Discount on bond	$ 278,717
Effective interest on bond for 20x4:	
1 January 20x4 to 31 December 20x4 (see schedule below)	$ 285,276
After-tax interest expense	$ 228,221

Amortization schedule of discount on bond for 20x4

	Coupon interest (1.5%)	Effective interest (3%)	Amortization of discount	Unamortized discount	Carrying value of bond
1 January 20x4				278,717	4,721,283
30 June 20x4	75,000	141,638	66,638	212,079	4,787,921
31 December 20x4	75,000	143,638	68,638	143,441	4,856,559

Diluted earnings per share is determined progressively through the introduction of each potential ordinary share from the most dilutive (lowest EPIS) to the least dilutive (highest EPIS):

page 1086

	Numerator effect (Earnings)	Denominator effect (Number of shares)	Provisional diluted earnings per share	Comments
Basic earnings per share	$2,000,000	3,000,000	$0.67	
Share options	$2,000,000 + $0 = $2,000,000	3,000,000 + 50,000 = 3,050,000	$0.656	Dilutive
Convertible bonds	$2,000,000 + $228,221 = $2,228,221	3,050,000 + 2,500,000 = 5,550,000	$0.401	Dilutive Final diluted earnings per share
Convertible preference share	$2,228,221 + $480,000 = $2,708,221	5,550,000 + 800,000 = 6,350,000	$0.426	Anti-dilutive

As the share options are dilutive, the next most dilutive security is tested for anti-dilution. The convertible bonds are dilutive as the earnings per share decreases to $0.401. This figure becomes the new benchmark. The convertible preference shares are next tested for anti-dilution by adding their numerator and denominator effects to the new provisional diluted earnings per share. The convertible preference shares are anti-dilutive as their inclusion increases the diluted earnings per share. The convertible preference shares are, therefore, excluded; the diluted earnings per share is $0.401. Note that when compared to the basic earnings per share, the convertible preference shares are dilutive (earnings per incremental ordinary share of $0.60 versus basic earnings per share of $0.67). The diluted earnings per share of $0.401 maximizes the dilution from the three classes of potential ordinary shares.

Presentation and Disclosures

In the income statement, both the basic and diluted earnings per share (even if the figures are negative) should be presented with equal prominence for all periods in respect of:

1. The profit or loss attributable to ordinary shareholders of the parent company from continuing operations; and
2. The profit or loss attributable to the ordinary shareholders of the parent entity for the period, and of each class of ordinary shares that has a different right to share in the profit for the period.

If an entity has reported a discontinued operation during the year, the basic and diluted earnings per share from the discontinued operation should be disclosed in either the face of the income statement or in the form of notes.

The following information should be disclosed in the notes (IAS 33:70):

1. Earnings used as the numerators in calculating the basic and diluted earnings per share, and a reconciliation of those earnings to profit or loss attributable to the parent entity for the period. The reconciliation should include the individual earnings effect of each class of instruments that affects earnings per share.
2. The weighted average number of ordinary shares used as the denominator in calculating basic and diluted earnings per share, and a reconciliation between the two denominators. The reconciliation should include the individual denominator effect of each class of instruments that affects earnings per share.

page 1087

3. Potential ordinary shares that were not included in the calculation of diluted earnings per share because they were anti-dilutive for the period(s) presented.
4. A description of ordinary share transactions or potential ordinary share transactions, other than those arising from capitalization, a bonus issue, a share split, or a reverse share split, which occur after the reporting date and which would have changed significantly the number of ordinary shares or potential ordinary shares outstanding at the end of the period, had those transactions occurred before the end of the reporting period.

page 1088

CONCEPT QUESTIONS

CQ12.1 Explain the significance of earnings per share to investors in publicly traded shares of listed companies.

CQ12.2 Explain the difference between basic earnings per share and diluted earnings per share.

CQ12.3 Entity A reported the following basic earnings per share and diluted earnings per share:

	20x5	20x4
Basic EPS	$0.90	$1.00
Diluted EPS	0.85	0.80

Explain the possible reason(s) for basic earnings per share to decline in 20x5 while diluted earnings per share increased.

CQ12.4 Explain the rationale for reporting diluted earnings per share.

CQ12.5 Discuss the limitations of earnings per share as an indicator of an entity's performance.

CQ12.6 Explain why an anti-dilutive potential ordinary share is excluded from the calculation of diluted earnings per share.

PROBLEMS

P12.1 Basic and diluted earnings per share

The capital structure of ASIA Corporation as at 31 December 20x5 is as follows:

Ordinary share capital (10,000,000 shares)	$10,000,000
4.8% convertible preference shares (300,000 shares)	3,000,000

Additional information:

(a) ASIA Corporation reported net profit after tax of $2,800,000 for the year ended 31 December 20x5.

(b) The preference shares, which were issued several years ago, were convertible into ordinary shares in the ratio of five ordinary shares for every two convertible preference shares. The conversion ratio was to be adjusted for any bonus or rights issue.

(c) On 1 July 20x5, ASIA Corporation declared a bonus issue of one bonus share for every two ordinary shares held.

(d) Preference dividends, which were tax-exempt, were paid at the end of each quarter.

(e) On 1 October 20x5, the holders of 40% of the convertible preference shares converted their preference shares into ordinary shares.

Required:

1. Calculate the basic and diluted earnings per share of ASIA Corporation for 20x5.
2. For the year ended 31 December 20x4, ASIA Corporation reported net profit after tax of $2,500,000. Calculate the basic and diluted earnings per share for 20x4.

P12.2 Options, convertible bonds, and earnings per share

Excelsior Corporation reported profit after tax of $5,000,000 for the year ended 31 December 20x3. The following information is provided for the year 20x3:

(a) The number of outstanding ordinary shares at 1 January 20x3 was 12,000,000. On 30 June 20x3, Excelsior issued 6,000,000 new shares at fair value to acquire the business of a competitor.

(b) On 1 October 20x3, Excelsior granted 2,000,000 options to its key managers. Each option allowed the holder to purchase one unit of ordinary share at $1. The average market price of Excelsior's share during 20x3 was $1.60. The options were exercisable only after two years from the date of grant.

(c) On 1 January 20x3, Excelsior issued at par value a convertible bond with a nominal value of $10,000,000 and a coupon rate of 2% per annum. Interest on the bond was payable annually on 31 December. The bond, which matures on 31 December 20x7, is convertible into 5,000,000 ordinary shares. As at 31 December 20x3, there had been no conversion of the bond into ordinary shares. Excelsior accounted for this bond in accordance with IAS 32. The market interest rate at the time of issue of the bond was 6% per annum.

(d) The tax rate was 20%.

Required:

Calculate the basic and diluted earnings per share for the year ended 31 December 20x3.

P12.3 Basic earnings per share with rights issue

The accountant of Kops Ltd has just prepared the financial statements for the financial year ended 31 December 20x4. The income statement reported a consolidated profit after tax of $14,500,000 ($12,800,000 for fiscal year 20x3). The statement of financial position as at 31 December 20x4 shows the following capital structure:

Issued and paid-up capital

70 million ordinary shares	$70,000,000
3,000,000 6.4% convertible preference shares	15,000,000
	$85,000,000

Additional information:

(a) On 1 July 20x3, Kops Ltd made a one-for-two rights issue at a subscription price of $1.00. The market price of Kops Ltd's share just before it went ex-rights was $1.90 per share.

(b) On 1 April 20x4, there was a one-for-one bonus issue of ordinary shares.

(c) The convertible preference shares were issued on 1 October 20x3. The preference shares were convertible into ordinary shares on the basis of two ordinary shares for each preference share after the bonus issue. On 1 July 20x4, 1,000,000 preference shares were converted into ordinary shares. Preference dividends (tax-exempt) were paid on the shares outstanding at the end of each quarter in 20x3 and 20x4.

(d) On 1 October 20x4, the company issued 8,000,000 ordinary shares of $1 each as purchase consideration for a commercial building. The shares were issued at full market price.

Required:

1. Show the capital structure of Kops Ltd at 1 January 20x3.
2. Calculate the earnings per share of Kops Ltd for 20x3 and for 20x4 (with comparative figures for 20x3).

P12.4 Calculation of basic and diluted earnings per share

The following information pertains to Causeway Company for the year ended 31 December 20x1:

(a) Causeway Company's net profit attributable to ordinary shareholders for the year 20x1 was $8,000,000.

(b) As at 1 January 20x1, Causeway Company had 20,000,000 ordinary shares outstanding.

(c) The average market price of Causeway's share during 20x1 was $6.00.

(d) Causeway Company had the following potential ordinary shares outstanding during the year:

(i) Warrants to buy 1,000,000 ordinary shares at $5.00 per share.

(ii) 1,200,000 convertible preference shares that were entitled to a cumulative tax-exempt dividend of $0.68 per share. Each preference share is convertible into two ordinary shares.

Required:

Calculate the basic and diluted earnings per share of Causeway Company for the year ended 31 December 20x1.

P12.5 Calculation of interim basic and diluted earnings per share

The following information pertains to First Corporation Ltd:

(a) The number of ordinary shares outstanding at the beginning of 20x1 was 30,000,000.

(b) On 1 April 20x0, 6,000,000 convertible preference shares were issued for assets in a purchase transaction. The net-of-tax quarterly dividend on each convertible preference share was $0.04, payable at the end of each quarter. Each share was convertible into one ordinary share. Holders of 5,000,000 convertible preference shares converted their preference shares into ordinary shares on 1 July 20x1.

(c) Warrants to buy 5,000,000 ordinary shares at $4 per share for a period of five years were issued on 1 January 20x1. 50% of the outstanding warrants were exercised on 1 October 20x1.

(d) Information on net profit (loss) before dividends is as follows:

page 1091

	Profit/(Loss) before discontinued operations	Net profit/(Loss)
First half	$7,000,000	$7,000,000
Second half	2,800,000	1,300,000
Full year	$9,800,000	$8,300,000

(e) The average market prices of First Corporation's ordinary shares for the calendar-year 20x1 were as follows:

First half	$4.30
Second half	$4.80
Full-year	$4.60

(f) The average market price from 1 July 20x1 to 1 October 20x1 was $4.70 while that for the period from 1 January 20x1 to 1 October 20x1 was $4.50.

Required:

Calculate the basic and diluted earnings per share for each interim period and for the full-year ended 31 December 20x1.

P12.6 Comprehensive problem

The capital structure of Model Company on 31 December 20x2 is as follows:

20,000,000 ordinary shares	$20,000,000
5,000,000 4.8% convertible preference shares	$ 5,000,000

The preference shares were convertible into ordinary shares in the ratio of 1,000 preference shares for 500 ordinary shares. The conversion ratio was to be adjusted for any bonus or rights issue. Preference dividends, which were tax-exempt, were payable every six months on the shares outstanding at 30 June and 31 December. No preference dividends were paid if preference shares were converted after these two dates.

Additional information:

(a) Model Company had an outstanding agreement made in 20x2 with its chief executive officer that entitled the chief executive officer to a bonus of 100,000 ordinary shares if the company's net profit after tax exceeded $3,000,000 in any of the years in the next three years. The bonus shares were adjustable for any bonus issue made after the date of the agreement.

(b) On 1 April 20x3, Model Company declared and issued bonus shares based on one bonus share for every existing four ordinary shares.

(c) On 1 July 20x3, Model Company issued $10,000,000 2% convertible bonds. The bonds were convertible into ordinary shares in the ratio of $1,000 nominal value of bonds for 550 ordinary shares. Interest on the bonds was payable semi-annually on 30 June and 31 December. The bonds matured on 30 June 20x5. A similar bond without the conversion feature would have carried a coupon rate of 4% if issued at the same date.

(d) On 1 January 20x4, Model Company implemented an executive compensation plan that granted 2,000,000 options to certain key executives. Each share option entitled the holder to subscribe for one new ordinary share at the price of $1.50 per share. None of the options had been exercised.

page 1092

(e) On 1 April 20x4, Model Company made a rights issue of three new ordinary shares for every five existing ordinary shares at a subscription price of $1.20. The market price of Model Company's share before it went ex-rights was $2.

(f) On 1 July 20x4, 40% of the convertible bonds were converted into ordinary shares.

(g) On 1 September 20x4, the company induced holders of the convertible preference shares to convert their preference shares into ordinary shares by changing the conversion ratio to 750 ordinary shares for every 1,000 preference shares. All the preference shareholders accepted the improved conversion terms and converted their preference shares. The fair value of the ordinary shares at the time of conversion was $2.50.

(h) The average market prices of Model Company's share were $2.20 and $2.50 during 20x3 and 20x4, respectively.

(i) The net profit after tax of Model Company for the years ended 31 December 20x3 and 20x4 is as follows:

	20x3	20x4
Profit for the year:		
Continuing operations	$2,800,000	$3,800,000
Discontinued operations	(3,000,000)	–
Net profit (loss)	$(200,000)	$3,800,000

(j) The income tax rate was 20%.

Required:

1. Calculate the basic and diluted earnings per share for the year ended 31 December 20x3.
2. Calculate the basic and diluted earnings per share for the year ended 31 December 20x4. Show the comparative earnings per share for 20x3 that should be reported in the 20x4's financial statements.

P12.7 Comprehensive problem

Gold Ltd is a publicly listed company and has to provide earnings per share information in accordance with IAS 33 Earnings per Share. The following information relates to the change in ordinary shares during the current reporting year ended 31 December 20x2.

Date	Event	Number of Ordinary Shares
1 Jan 20x2	Balance of issued shares at start of year	5,000,000
1 May 20x2	Repurchase of shares with cash	(1,200,000)
1 Jul 20x2	Bonus issue (one new share for an existing share)	3,800,000
1 Nov 20x2	Issue of new shares for cash	900,000
31 Dec 20x2	Balance of issued shares at end of year	8,500,000

Gold reports the following information in its Statement of Changes in Equity for the year ended 31 December 20x2.

Net profit after tax	$5,200,000
Less:	
Ordinary share dividends	(100,000)
Preference share dividends	(150,000)
Profit retained	$4,950,000

On 1 April 20x2, Gold Ltd issued 4,000,000 convertible preference shares. There were no conversions from preference to ordinary shares during 20x2. The issue agreement permits the preference shareholders to convert each preference share to one ordinary share. After the bonus issue, each unit of preference share is convertible to two ordinary shares. Under the issue agreement, Gold Ltd has to pay cumulative tax-exempt preference share dividends at 1.5% per share per quarter.

Required

1. Determine Gold's basic earnings per share for the year ended 31 December 20x2.
2. Determine Gold's diluted earnings per share for the year ended 31 December 20x2.

P12.8 Comprehensive problem

Sapphire Ltd has a complex capital structure that includes both ordinary shares and potential ordinary shares. Sapphire Ltd reported the following net profit and dividends information for the current year ended 31 December 20x2.

Net profit after tax	$6,900,000
Less preference dividends	(53,250)
Net profit attributable to ordinary shareholders	$6,846,750

During 20x2, Sapphire entered into the following share capital transactions:

Date	Event	Number of ordinary shares
1 Jan 20x2	Ordinary shares at start of year	2,000,000
1 Apr 20x2	Issue of new shares for cash	400,000
1 Aug 20x2	Share split:1 for 1	2,400,000
1 Oct 20x2	Conversion of preference shares	450,000
		5,250,000

The following information relates to potential ordinary shares issued by Sapphire Ltd:

(a) On 1 July 20x1, Sapphire issued 1,000,000 convertible preference shares at $1 per share. On 1 October 20x2, 450,000 preference shares were converted to ordinary shares. Under the issue agreement, the shares bear a tax-

exempt coupon rate of 6% on a non-cumulative basis. The dividends are paid on a pro-rated basis for the period that the shares are outstanding. Prior to the share split, the conversion ratio was two preference shares to one ordinary share. After the share split, the conversion ratio is on a one-to-one basis.

(b) On 31 December 20x2, Sapphire had 600,000 units of outstanding stock options. These options were issued on 1 April 20x2 and none were exercised during 20x2. Each stock option entitles the holder to purchase one ordinary share at the exercise price of $2.60 per share. The average market price for the period from 1 April 20x2 to 31 December 20x2 was $3.00 per share. All prices were adjusted for share splits.

(c) On 1 July 20x2, Sapphire issued convertible bonds. Under IAS 32, the bonds were recognized separately from the equity options. The fair value of the bonds was $6,000,000. Each dollar of bond was convertible to one ordinary share after adjustment for share split. There were no conversions in 20x2. The effective interest rate of the bonds was 5% per annum.

(d) Tax rate applicable to 20x2 was 20%. Preference dividends are tax-exempt.

Required

1. Determine the basic earnings per share of Sapphire Ltd for the year ended 31 December 20x2.
2. Determine the earnings per incremental share for each potential ordinary share for the year ended 31 December 20x2.
3. Determine the diluted earnings per share for the year ended 31 December 20x2.

P12.9 Comprehensive problem

Sapphire Ltd, the company in P12.8, reported the following net profit after tax for the year ended 31 December 20x1.

Net profit after tax	$7,000,000

Issued ordinary shares during 20x1 were 2,000,000 shares.

Required

1. Determine the basic earnings per share of Sapphire Ltd for the year ended 31 December 20x1, as reported in 20x1.
2. Determine the diluted earnings per share for the year ended 31 December 20x1, as reported in 20x1.
3. Show the restated comparative information for basic earnings per share and diluted earnings per share information for 20x1, as reported in the 20x2 financial statements.
4. When comparing the 20x2 earnings per share information with the restated comparatives, what inferences can you make about the profitability of Sapphire Ltd?

P12.10 Effects of share repurchase and treasury shares on earnings per share

Diamonds Ltd has issued share capital of 2,000,000 ordinary shares as at 31 December 20x6. Profit for the year attributable to ordinary shareholders amounted to $6.5 million. In 20x2, a total of 500,000 were repurchased from the market under the company's share repurchase mandate and held in treasury. In 20x6, the company bought back another two tranches of shares from the market. 50,000 and 60,000 shares were repurchased on 31 March 20x6 and 30 September 20x6 respectively. Similarly, these shares are not cancelled and are held in treasury. The following table shows the movement in the share capital account.

page 1095

		Number of shares
1 January 20x6	Balance as at beginning	2,000,000

	Less: Treasury shares	(500,000)
		1,500,000
31 March 20x6	Shares repurchased during the year	(50,000)
30 September 20x6	Shares repurchased during the year	(60,000)
31 December 20x6	Balance as at end	1,390,000

Calculate the weighted average number of ordinary shares and the basic earnings per share.

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[1] The price-earnings ratio is the ratio of market price to earnings per share (market price/EPS). It is interpreted as a multiple (number of times) of earnings per share.

[2] This applies if the entity is a subsidiary of another entity.

[3] IAS 33 paragraph 9.

[4] This EPS figure includes the profit or loss from the discontinued operation.

[5] Increasing rate preference shares are shares that are issued at a discount and that provide a low initial dividend to compensate the issuer for selling at a discount. Alternatively, they may be preference shares sold at a premium with above-market dividends paid in later periods to compensate investors for the up-front premium. The discount or premium on an increasing rate preference shares is amortized to retained earnings using the effective interest method (IAS 33:15).

[6] IAS 33 paragraphs 21 to 24.

[7] IAS 33 Appendix A Application Guidance, paragraph A2.

[8] IAS 33 paragraph 24.

[9] As the consideration paid (which may include any additional premium) for the shares repurchased is deducted against equity, the profit attributable to the ordinary shareholders used for the purpose of calculating the earnings per share will not be affected.

[10] The options and warrants discussed in this section are call options or call warrants.

[11] Vesting requires conditions in a share-based compensation plan to be satisfied before the employee is entitled to the equity instruments in the issuing entity. Very often, these conditions are time-based.

[12] This is the date when the issuer and the employee arrive at a shared understanding of the terms and conditions of an approved share-based agreement (Appendix A of IFRS 2 *Share-based Payment*).

[13] Preference dividends are assumed to be tax-exempt.

[14] Note that if the conditions are met, the contingent shares are also included in the calculation of basic earnings per share except that the shares are included only for the portion of the period during which the conditions are met.

[15] $PVIFA_{4,3\%.}$

[16] $PVF_{4,3\%.}$

CHAPTER

13

Share-based Payment

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

LO1 Understand what a share-based payment transaction is;

LO2 Know the different types of share-based payment transactions;

LO3 Understand the general accounting principles for share-based payment transactions;

LO4 Understand the accounting treatment for:

(a) equity-settled share-based payment transactions;
(b) cash-settled share-based payment transactions;
(c) share-based payment transactions with a cash alternative;

LO5 Understand how to account for modifications to share-based payments;

LO6 Understand the tax implications of share-based payment transactions; and

LO7 Understand the conceptual arguments for the recognition of remuneration expense in share-based payment transactions for services rendered by employees.

INTRODUCTION

Share-based payment transactions are a common feature in businesses. Here are some examples of share-based payment transactions:

1. Company A grants 3,000,000 share options (exercisable after three years) to its chief executive officer as part of his compensation package.
2. Company B has a scheme that allows all its employees to purchase shares in the company at a 10% discount to the market price.
3. Company C enters into a contract with a counterparty in which the counterparty agrees to supply components in return for a specified number of shares in Company C.

The bulk of share-based transactions is mainly reserved as compensation for services provided by employees. The use of equity instruments as a remuneration tool is especially popular among listed companies as well as young and growing enterprises that use these instruments to attract and retain talent. Many entities introduce share-based payment plans in hope that they will instil a sense of ownership among their employees and thereby align their employees' interests with those of the owners.

The term "executive share option plans" (ESOPs) is often used to describe such a form of compensation. In practice, ESOPs come in different forms. They include:

1. Fixed share option plans that are conditional upon the employees rendering services for a stipulated period;
2. Restricted performance share option plans that are subject to certain conditions being met, for example, achieving a targeted earnings growth rate over a specified period; and

3. Share appreciation rights that provide for either a cash payment or an issue of equity instruments whose fair value is equal to the increase in the share price over a specified period.

The accounting for ESOPs has been a highly controversial topic in the past. The controversy revolves around the recognition of such payments as an expense as it will have a direct impact on an entity's reported earnings. Not surprisingly, the issue had been highly politicized in some countries, such as the United States, where the main opposition came from small and medium-sized entities and entities in technologically intensive industries. The arguments for and against expensing equity instruments, particularly stock options, are discussed at the end of this chapter. Despite vociferous objections from the business sector, the accounting standard setting bodies, such as the Financial Accounting Standards Board (FASB) and the Board, have decided in favor of the recognition of share-based payments as an expense. The FASB issued Statement of Financial Accounting Standard (SFAS) 123[1] *Accounting for Stock-based Compensation* in 1995, and the Board issued International Financial Reporting Standard 2[2] *Share-based Payment* (hereinafter referred to as IFRS 2) in 2004, with subsequent major amendments in 2008 and 2009.

While the use of share-based payment plans as a remuneration tool has been the subject of much attention, the coverage of IFRS 2 is more broad-based. It applies to any entity, listed or unlisted, that has share-based transactions with employees or with third parties, which provide goods and services to the entity. It also encompasses situations where a group company (e.g. a subsidiary) grants equity instruments of another group company (e.g. the parent) as consideration for goods and services received. However, the following two situations do not fall within the scope of the standard:

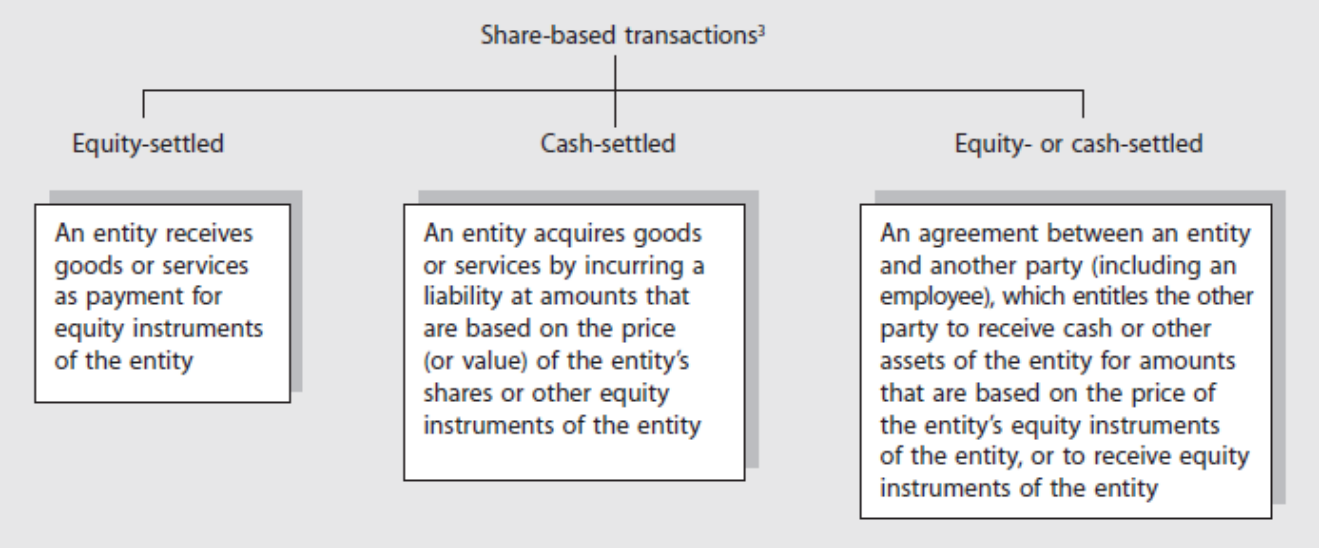
page 1099

1. Shares issued by one entity as consideration for the equity interest in another entity for which IFRS 3 *Business Combination* is applicable; and
2. Share-based transactions that fall under the scope of IAS 32 *Financial Instruments: Presentation* and IFRS 9 *Financial Instruments*, for example, commodity derivatives that may be settled in equity instruments or other financial assets.
3. Transactions with employee (or any other party) in his/her capacity as a holder of equity instruments (i.e. as a shareholder). An example is when an entity embarks on a rights issue when all holders of ordinary shares are given the right to acquire additional ordinary shares at a stipulated price.

Types of Share-based Transactions

Three types of share-based transactions are identified by IFRS 2 as shown in Figure 13.1. These share-based transactions are settled by the entity that receives the goods and services. There are situations where one group company (e.g. a parent) settles the transactions on behalf of another group company (e.g. its subsidiary). Appendix 13A explains the accounting for group-settled share-based transactions.

FIGURE 13.1 Types of share-based transactions



IFRS 2 distinguishes between services provided by employees and goods or services provided by third parties who are non-employees. The distinction is important because a key feature in the accounting of share-based payments is the need to quantify the fair value of the services provided. IFRS 2 requires the fair value of the equity instruments to be determined based on the fair value of the goods and services received. If the fair value of goods and services cannot be estimated reliably, the value of the equity instruments should be measured by reference to the fair value of the equity instruments as determined via valuation methodology (e.g., option pricing model) [IFRS 2 Paragraph 10]. There is a rebuttable presumption that the fair value of employee services is more difficult to value than the fair value of the equity instruments issued. In the case of services provided by employees, the fair value of the services provided is usually not as reliably determinable as those provided by non-employees (for example, suppliers) where arm's-length market prices are more readily available.

page 1100

General Accounting Principles

The general principles in accounting for share-based transactions are as follows:

1. An expense[4] is charged to the profit or loss and a corresponding increase in an equity component is recorded during the period when the goods or services are provided by the counterparty.
2. If the issue of equity instruments is for past services rendered, the amount is recognized as an expense immediately. On the other hand, if the equity instruments are awarded for future services, the expense is recognized over the vesting period.[5]
3. In the case of services rendered by employees, the fair value of services rendered is measured based on the fair value of the equity instruments at the date of the grant, as typically, it is not feasible to reliably measure the fair value of services rendered by employees. The fair value of the equity instruments estimated at the grant date is not subsequently revised.
4. The amount of expense to be recognized for services to be rendered during the vesting period is based on the best available estimate of the number of equity instruments expected to vest; this estimate is revised subsequently if new information indicates that the number of equity instruments expected to vest differs from the previous estimate.
5. In the case of transactions with other parties who are not employees, the transaction is measured based on the fair value of goods or services rendered at the date the goods or services are received, because the fair value of the goods or services can generally be estimated reliably. However, in the exceptional case where this presumption does not hold, the transaction is measured based on the fair market value of the equity instruments granted.

Because transactions with employees form the bulk of share-based payment transactions, the discussion in the rest of the chapter is focused mainly on share-based payments to employees.

EQUITY-SETTLED SHARE-BASED TRANSACTIONS

Equity-settled share-based remuneration plans come in a variety of forms. Examples of the more common ones are set out below:

1. Fixed share option plans in which the number of equity instruments granted per employee is fixed.
2. Performance plans in which the number of equity instruments that employees are entitled to depend on the attainment of specified performance targets.
3. Share appreciation rights (SARs) are cash settlements to employees or other counterparties at amounts that are based on increases in the share price of the entity over a specified period.

It is important to understand some of the terms used in share-based payment transactions in order to properly measure and account for such transactions.

1. *Grant date.* This is the date when the share options or other share-based payment plans are awarded or granted to employees. There is an explicit assumption that the entity and the employees have agreed to the terms of the share-based plan. However, if the plan is subject to approval by the shareholders (as in the case of publicly listed companies), the date on which the shareholders approved the plan is the grant date.

2. *Measurement date.* This is the date of measurement of the fair value of the share options granted. Normally, the measurement date coincides with the grant date. However, in some cases, it depends on the terms and conditions of the share option plan scheme. For transactions with parties other than employees (for example, suppliers), the measurement date is the date when goods and services are received.

3. *Vesting date.* This is the date when the employee is entitled to the issued equity instruments under a share-based plan, having satisfied all the necessary conditions. The period from the grant date to the vesting date is known as the vesting period. Vesting periods may be fixed or may vary depending on the terms of the plan.

4. *Vesting condition.* A vesting condition is a condition that must be met before the grantee is entitled to receive compensation either in the form of cash or equity instruments of the entity. Vesting conditions fall into one of two categories: service conditions or performance conditions.[6] As the term implies, a service condition stipulates that a specified period of service must be completed by the employee or a third party providing services to the entity. Performance conditions have two components: a service condition and a performance target. A performance target may be a non-market-related target such as attaining a specified level of sales or profit over a specified period or a market-related condition, which is normally tied to the market price of the entity's shares or a share index.

5. *Non-vesting condition.* Non-vesting conditions are neither service conditions nor performance conditions but are conditions that must be satisfied for the counterparty to be entitled to the share-based payments. Examples of non-vesting conditions are requirements to deduct contributions from monthly payroll, targets based on market index movement, and restrictions on transfers of vested shares.

6. *Forfeiture rate.* This is the number of equity instruments expected to be forfeited due to non-compliance with a vesting condition, for example, failure to serve the requisite service period. The forfeiture rate, that is, the proportion of employees expected to leave the entity during the vesting period, usually has to be estimated at the start of the plan. The estimate has to be reviewed and, if necessary, revised at the end of each reporting period before the vesting date.

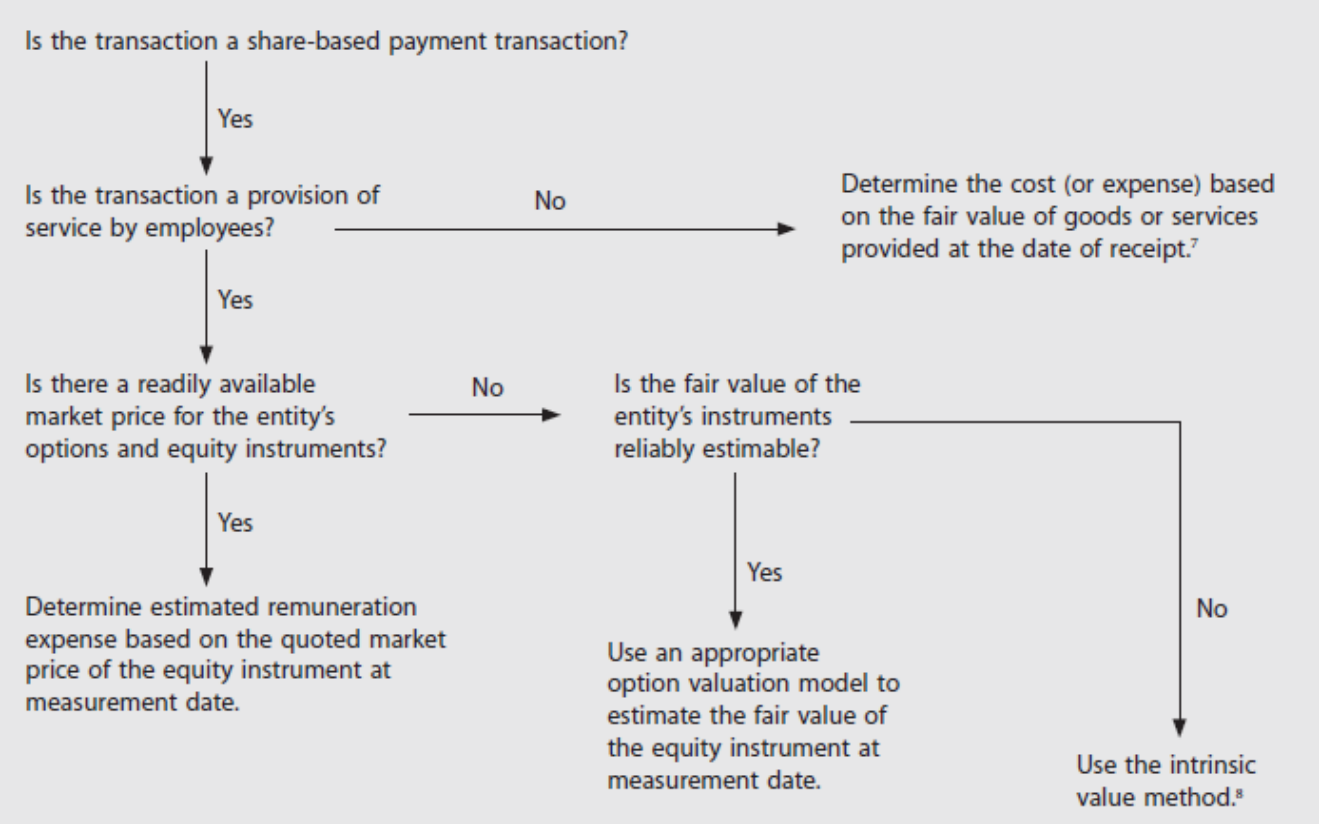
7. *Fair value at grant date.* This is the fair value of the share options or other share-based plans at the date of the grant. If the options or plans are quoted on an exchange, the fair value is based on the market price. In the case of options or plans with no available market prices, the presumption is that their fair values can be reasonably estimated using an appropriate option valuation model such as the Black-Scholes model or the binomial model (see Appendix 13B). In rare cases where their fair values cannot be estimated reliably, a different set of accounting rules apply, which will entail the use of the intrinsic value method. This will be discussed later in the chapter.

8. *Reload feature.* This feature in the share option plan automatically grants additional options (referred to as the reload option) when the option holder exercises previously granted options and receives shares, rather than cash.

9. *Intrinsic value.* This is the difference between the fair value of the underlying share and the exercise price.

Figure 13.2 shows the critical questions that underlie the determination of fair value at grant date in share-based transactions.

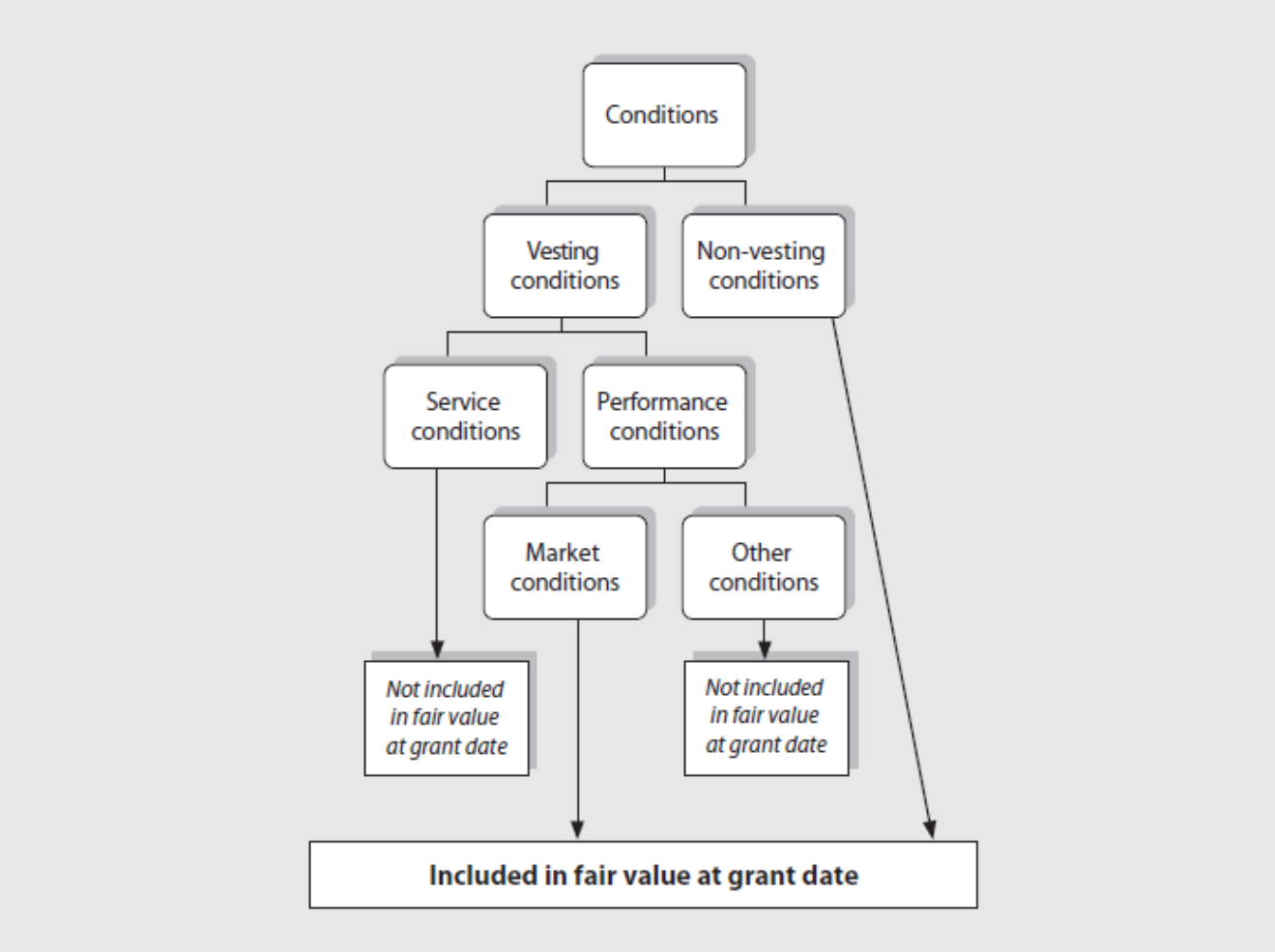
FIGURE 13.2 Determination of fair value in share-based transactions



The estimation of the fair value of equity instruments issued by an entity in a share-based transaction should not take into account all vesting conditions, other than those that are market conditions (IFRS 2:19). Performance or service conditions that are not market conditions (for example, tenure of employment) need not be included in determining the fair value of options granted. Instead, these non-market vesting conditions are taken into account during the measurement period by adjusting the number of equity instruments that are likely to eventually vest. For example, as employees leave, the issuing entity adjusts the forfeiture rate over the vesting period until the final number of forfeited options is equal to the actual number forfeited. Non-vesting conditions, similar to market performance vesting conditions, are taken into account when estimating the fair value of equity instruments. Earlier

on, we had explained the nature of the reload feature. The estimation of the fair value of options will also not take into account the effects of any reload feature. Instead, reload options granted are accounted for as new options granted. Figure 13.3 provides a summary on what type of conditions are included in the determination of the fair value of the options at grant date.

FIGURE 13.3 Impact of conditions on the determination of the fair value at grant date



The accounting for a simple fixed share option plan is shown in Illustration 13.1.

ILLUSTRATION 13.1 Accounting for a fixed option plan

Capital Corporation Ltd (CCL), a listed company, introduced a share option scheme called the CCL Share Option Scheme on 1 January 20x1. All the managers accepted the terms of the share option scheme on 5 January 20x1. Under the scheme, ten key managers were granted 100,000 share options each. Each option entitled the grantee to take up one ordinary share in the company. The options could be exercised at any time after two years (during which time the

employee must not leave the entity), but no later than the expiry date, which was 5 January 20x6. The exercise price was $2 per share, which was the actual market price on the date of the grant.

Other information and assumptions are as follows:

(a) At the date of the grant, the estimated fair value of the share option was $0.40 per option. CCL estimated that two out of the ten managers would leave the entity before 5 January 20x3.

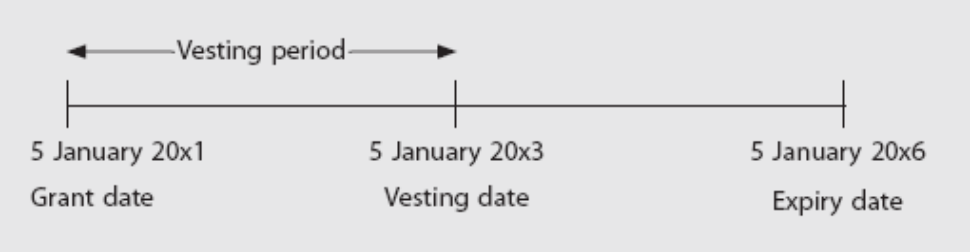
(b) One of the managers left the company in 20x1. At the end of 20x1, CCL increased its estimate of the total number of managers leaving the company in 20x1 and 20x2 from two to three.

(c) In 20x2, another manager left CCL.

(d) On 15 January 20x3, all the remaining managers exercised their share option when the market price of CCL's share was $2.80.

(e) CCL's financial year-end is 31 December.

The time line diagram below shows the various relevant dates pertaining to the share option scheme.



Note the following:

1. The grant date is 5 January 20x1, which is also the measurement date as the number of shares subject to the scheme, the exercise price, and the market price of the share is known at the date of the grant.
2. The period 5 January 20x1 to 5 January 20x3 is known as the *vesting period*. The *vesting date* is 5 January 20x3 as this is the date when the share options are exercisable (there are no other conditions to be met before the options are exercisable). The vesting condition is the two-year service period, which has been met in this case.
3. At the grant date, the share options are at-the-money (exercise price equals the market price of the share), so, the intrinsic value is nil. However, the share option has a time value. Since the share options are not traded, the fair value of the options has to be estimated using a valuation model.[9]
4. Remuneration expense is recognized and allocated over the period of service provided by the employees, that is, 5 January 20x1 to 5 January 20x3.
5. The related tax effects are ignored in this example

The calculation of the remuneration expenses over the vesting period is as follows.

20x1's remuneration expense

At the end of 20x1, the estimated number of executives who are expected to remain in the entity's employment is seven. Therefore, the remuneration expense is based on the number of options that is ultimately expected to vest, that is, 700,000 (100,000 options × 7 executives). Based on the estimated fair value of $0.40 per option at the grant date and a two-year service period, the remuneration expense recognized proportionately in 20x1 is as follows:

$$700{,}000 \times \$0.40 \times ½ = \$140{,}000$$

20x2's remuneration expense

At the end of 20x2, the actual number of options that vested is 800,000 (100,000 × 8).

The remuneration expense to be recognized in 20x2 is as follows:

100,000 × 8 × $0.40	$320,000
Less amount recognized in 20x1	(140,000)
Remuneration expense recognized in 20x2	$180,000

This is more than the amount estimated at the end of 20x1. The revision in the amount of options that actually vest is treated as a change in accounting estimate and, therefore, no adjustment is made to the previous year's remuneration expense.

The journal entries to record the remuneration expense are as follows:

31 Dec. 20x1	Dr Remuneration expense	140,000	
	Cr Share option reserve (equity)		140,000
	Share option expense for the year ended 31 December 20x1		
31 Dec. 20x2	Dr Remuneration expense	180,000	
	Cr Share option reserve (equity)		180,000
	Share option expense for the year ended 31 December 20x2		
15 Jan. 20x3	Dr Cash	1,600,000	
	Dr Share option reserve (equity)	320,000	
	Cr Share capital		1,920,000
	Issue of 800,000 ordinary shares at $2 each and transfer of the balance of share option reserve to share capital		

Alternatively, the share option reserve of $320,000 may be transferred to another component of equity as IFRS 2 paragraph 23 does not preclude the entity from recognizing a transfer within equity (ie a transfer from one component of equity to another).

Performance or Variable Share Option Plans

Some share option plans incorporate an incentive feature whereby the number of equity instruments to be awarded is determined by the performance of the entity over a stipulated period. An example of a performance plan in which the number of equity instruments to be granted is dependent on the financial results of the entity is shown in Illustration 13.2.

ILLUSTRATION 13.2 Performance plan with performance conditions[10]

On 1 November 20x0, Alto Corporation announced a share incentive plan for 100 executives. The terms of the plan are as follows:

(a) The number of options each executive would receive was given by the following formula: 50,000 × (1 + simple average annual rate of increase in net earnings from 1 January 20x1 to 31 December 20x3). An increase in net earnings is a performance condition. IFRS 2 allows the performance target to relate to entity as a whole or a part of the entity, such as a division. A reference to a share index is a non-vesting condition and not a performance condition.

(b) The exercise price was $3.60 per share, which was the same as the market price on grant date.

(c) The options were not transferable; they were exercisable three years from the grant date. The options expired at the end of five years from the grant date.

(d) The options would be forfeited should any manager leave the entity during the service period of three years.

(e) The estimated fair value of the share option at grant date was $0.50.

The plan was approved by shareholders on 1 January 20x1. At the date of the grant of the share options, the management of Alto Corporation estimated that the company's net earnings would increase by 10% a year. Management also estimated a forfeiture rate of 10%, that is, 10% of the executives would leave the company by the end of 20x3.

At the end of 20x1, the net earnings of Alto increased by 15% over 20x0. Three executives left the company in 20x1. Management revised the forfeiture rate to 8% by the end of 20x3, and net earnings were revised to grow by an average of 12% for the three-year period.

In 20x2, two executives left the company and net earnings increased by 8% over 20x1. Management retained its estimate of the forfeiture rate at 8% and estimated net earnings to grow by an average rate of 10% over the three-year period.

In 20x3, two executives left the company and net earnings increased by 13% over 20x2, resulting in a simple average annual increase of 12% for the 20x1 to 20x3 period. On 31 December 20x3, the share price of Alto was $5.00 and all remaining executives exercised the options granted to them under the performance-based scheme.

Remuneration expense for a period is the difference between the cumulative remuneration expense calculated at the end of the current and previous reporting periods, as shown in Table 13.1. The current remuneration expense includes the effects of changes in estimates of the earnings growth rates and the forfeiture rate.

TABLE 13.1 Remuneration expense under a performance-based share option plan

Date	Cumulative remuneration expense	Current year's remuneration expense
31 Dec. 20x1	50,000 options × 1.12 × 92 × $0.50 × ⅓ = $858,667	$858,667
31 Dec. 20x2	50,000 options × 1.1 × 92 × $0.50 × ⅔ = $1,686,667	$1,686,667 – $858,667 = $828,000
31 Dec. 20x3	50,000 options × 1.12 × 93 × $0.50 = $2,604,000	$2,604,000 – $1,686,667 = $917,333

31 Dec. 20x1	Dr Remuneration expense	858,667	
	Cr Share options reserve (equity)		858,667
	Remuneration expense for the year ended 31 December 20x1		
31 Dec. 20x2	Dr Remuneration expense	828,000	
	Cr Share options reserve (equity)		828,000

Remunerations expense for the year ended 31 December 20x2

31 Dec. 20x3	Dr Remuneration expense	917,333	
	Cr Share options reserve (equity)		917,333
	Remuneration expense for the year ended 31 December 20x3		
	Dr Cash	18,748,800	
	Dr Share options reserve (equity)	2,604,000	
	Cr Issued share capital		21,352,800
	Issue of shares for cash (50,000 × 1.12 × 93 × $3.60 = $18,748,800) and transfer of the balance in the share options reserve to issued share capital		

What if Share Options are not Exercised after the Vesting Date?

Whether vested share options are exercised or not depends largely on whether the options are in-the-money[11] before the expiration date of the options. Of course, if the options are out-of-the-money during the entire term of the options' life, they will not be exercised. IFRS 2 paragraph 23 does not permit the reversal of remuneration expense recognized during the vesting period in the event that share options are not exercised after the vesting date. Essentially, goods and services have been received and the expense recognized on these reflect the consumption of the benefits of these goods and services. Therefore, the entity should not reverse the expense if the options are not exercised. However, IFRS 2 does not prohibit the entity from transferring share option reserve to another component of equity, for example, from share options reserves to capital reserves.

Modifications to Share Option Plans

Under certain circumstances, an entity may change the terms and conditions on which equity instruments are granted under a share option plan. Typically, the changes involve one or more of the following:

1. A change in the exercise price (also known as repricing)[12];
2. A change in a vesting condition, for example, sales or earnings target;
3. An inclusion of a cash alternative;
4. A cancellation of the grant; or
5. An early settlement of the grant.

Modifications that Increase the Total Fair Value of the Share-based Arrangement

An increase in the total fair value of a share-based plan can be due to a reduction in the exercise price or to an increase in the number of equity instruments granted. The entity is required to calculate the incremental fair value of the modified grant at the date of modification and add it to the original amount recognized over the vesting period. Where the increase in the total fair value is due to a reduction in the exercise price, the incremental fair value to be recognized is the difference between the fair value of the option based on the original exercise price and the fair value of the option based on the revised exercise price, both calculated at the date of

modification. If the number of equity instruments is increased, the fair value of the additional equity instrument measured at the date of modification is added to the original amount (IFRS 2 App B:B43).

The accounting treatment depends on when the modification occurs. If the modification is made during the vesting period, the remuneration expense is made up of:

1. The original amount based on fair value at grant date allocated over the vesting period; and
2. The incremental fair value allocated over the remaining vesting period, that is, from modification date to vesting date (IFRS 2 App B:B43a).

On the other hand, if the modification is made after the vesting date, the incremental fair value is recognized immediately. However, if the employee is required to complete an additional period of service, the incremental fair value is recognized over the vesting period.

Illustration 13.3 shows the accounting of a share option scheme that has been modified.

ILLUSTRATION 13.3 Modification to non-vested share options

On 1 January 20x1, Redford Corporation, a listed company, granted 30,000 share options to each of its 100 employees. The options were exercisable three years from the date of the grant, conditional upon the employee remaining in the entity's employment during the three-year service period. The option would expire ten years after the date of the grant. The exercise price was $3, which was also the market price at the grant date. The fair value of each share option was estimated at $1.50 at the grant date.

Management estimated a forfeiture rate of 10% over three years, that is, a total of ten employees were estimated to leave the entity by the end of 20x3. Five employees left during 20x1, but no adjustment was made to the forfeiture rate at the end of 20x1. Another five employees left the entity during 20x2. At the end of 20x2, management revised the forfeiture rate to 15%. Two employees left the entity in 20x3.

At 1 January 20x2, the market price of Redford Corporation's share fell to $2.20. Redford Corporation revised the exercise price to $2.20. At this date, the fair value of the original option before repricing was estimated at $1; the fair value of the modified option was estimated at $1.30.

The revision of the exercise price on 1 January 20x2 has the effect of exchanging the existing share options for "new" share options that carry an exercise price of $2.20. The "new" share options have a life of nine years (which is also the remaining life of the original share options). The modification of the exercise price will result in Redford Corporation incurring additional remuneration expense. The additional remuneration expense is the amount of the excess of the fair value of the modified share options issued over the fair value of the original share options at 1 January 20x2. The additional remuneration expense is calculated as follows:

Fair value per modified share option at 1 January 20x2	$1.30
Less: Fair value of original share option at 1 January 20x2	1.00
Incremental value per modified share option at 1 January 20x2	$0.30

The incremental value is added to the fair value of the remaining balance of the unrecognized remuneration expense of the original share options and recognized over the remaining period.

The remuneration expense for each of the three years is calculated as follows:

Remuneration expense for 20x1:

30,000 options × 90 × $1.50 × ⅓ = $1,350,000

Remuneration expense for 20x2:	
Cumulative remuneration expense based on fair value at grant date	
(30,000 options × 85 × $1.50 × ⅔)	$2,550,000
Less remuneration expense recognized in 20x1	(1,350,000)
Remuneration expense for 20x2 based on fair value at grant date	$1,200,000
Add incremental expense: (30,000 options × 85 × $0.30 × ½)	382,500
Total remuneration expense recognized in 20x2	$1,582,500
Remuneration expense for 20x3:	
Cumulative remuneration expense for 20x3	
(30,000 options × 88 × $1.80)	$4,752,000
Less remuneration expense recognized in 20x1 and 20x2	(2,932,500)
Remuneration expense recognized in 20x3	$1,819,500

Alternatively,

30,000 × 88 × $1.50	$3,960,000
30,000 × 88 × $0.30	792,000
	$4,752,000
Less amounts recognized in 20x1 and 20x2	(2,932,500)
	$1,819,500

Note the following:

1. At the end of 20x2, the number of options estimated to vest was revised to 2,550,000 (30,000 × 85).
2. Because there had been no change in the original vesting condition, the modification had an explicit service period of two years, which was also the requisite service period. Thus, the incremental remuneration expense resulting from the modification would be allocated proportionally over the remaining two years.
3. The amount of incremental remuneration expense allocated to 20x2 was added to the original remuneration expense for 20x2 based on the fair value of the options at the grant date. The "add-on" procedure implies a remuneration expense that is a composite of the original fair value at grant date and incremental fair value adjustment at modification date.
4. Tax effects have been ignored.

Modifications that Reduce the Total Fair Value of the Share Value of the Share-based Arrangement

The terms and conditions of share-based payment arrangement may be modified such that the total fair value of the arrangement is reduced or it could be a situation where the modification does not benefit the employee. In this situation, paragraph B44 of IFRS 2 requires the entity to continue to account for the services received from the employees as if the modification of the share-based payment had not occurred. This means that the entity will continue to recognize the services received based on the fair value at grant date that was previously calculated. The decrease in the total fair value will be ignored.

Paragraph B44 provides an example of such a modification. In particular, when the vesting period is prolonged or an additional performance condition (other than a market condition) is included, such modifications will not be beneficial to the employee. In this case, the entity will account for it in accordance with the principles set out in the preceding paragraph.

The exception to this requirement is in the case of cancellation of some or all of the equity instruments. In this case, the entity should account for it as a cancellation in accordance with paragraph 28 of IFRS 2. Specifically, paragraph B44(b) requires a modification that reduces the number of equity instruments to be granted to the employee to be accounted for as a cancellation of that portion of the share grant. We will discuss the accounting for cancellation of share-based payment arrangement in a subsequent section below.

What if the Modifications Occurred at the Vesting Date

Assume the same facts as in Illustration 13.3, except that the share price fell to $2.20 on 1 January 20x4 and the exercise price was revised to $2.20 on the same date. Since the options have vested, the incremental fair value is recognized immediately. The incremental remuneration expense amounts to $792,000 (30,000 × 88 × $0.30).

Cancellations and Settlements of Share-based Arrangements

Cancellations and settlements of share-based payments may arise when entities or employees cancel and settle a grant of equity instruments during a vesting period[13]. In this case, such cancellations and settlements exclude scenarios in which the share-based payment grants are cancelled by forfeiture when the vesting conditions are not met. IFRS 2:28(a) requires a cancellation of a share-based payment to be treated as an acceleration of vesting. All awards outstanding at the date of cancellation that would have been recognized for services over the remaining vesting period are immediately recognized.

Example: Entity X has an equity-settled share-based payment arrangement with 200 employees. Immediately prior to cancellation, Entity X estimates that 90% of the employees will meet a service condition (to remain in employment over four years). The expense that is immediately recognized upon cancellation of the share-based payment arrangement is based on 100% of the awards for 180 employees or the amount expected to vest, which is 90% multiplied by the awards for 200 employees.

Furthermore, paragraph 28(b) of IFRS 2 requires an entity to account for any payment made to the employee for the cancellation or settlement of the share grant as a repurchase of an equity interest. This means that the amount paid will be deducted against equity. However, if the payment exceeds the fair value of the equity instruments granted, measured at the repurchase date, the excess will be accounted for as an expense in the profit or loss. What this effectively means is that the entity will have to re-determine the fair value of the grant at the date where the payment is made.

However, if the share-based payment arrangement includes a liability component (such as in the case of cash settled share-based payment), IFRS 2 requires the entity to remeasure the fair value of the liability at the date of the cancellation or settlement. The amount paid to the employee will be accounted for as an extinguishment of the liability.

If the entity grants new equity instruments to the employees on the cancellation or settlement of the share grant, the accounting treatment depends on whether these new equity instruments are identified as replacement for the cancelled equity instruments.

When new grants are identified as replacement equity instruments

If the entity identifies the new grant as replacement equity instruments for the cancelled ones on the date where the new equity instruments are granted, paragraph 28(c) of IFRS 2 requires it to be accounted for as a modification of the original grant (which was cancelled).

In particular, the entity will calculate the incremental fair value of the replacement grants as the difference between the fair value of the replacement equity instruments and the net fair value of the cancelled equity instruments. Both fair values are calculated at the date when the replacement equity instruments are granted. IFRS 2 defines the net fair value of the cancelled equity instruments as the fair value of these cancelled equity instruments immediately

before they were cancelled, less any amounts paid to the employees on cancellation of the equity instruments that are accounted for as a deduction from equity (in accordance with paragraph 28(b) of IFRS 2).

In tandem with the principles in paragraph B43 of IFRS 2, the incremental fair value of the replacement grants will be included in the measurement of the amount recognized for services received over the period from the date of grant of the replacement equity instruments until the date when these replacement equity instruments vest. This is in addition to the amount that was recognized as a result of acceleration of vesting at the date when the original equity instruments were cancelled. That amount was based on the grant date fair value of the original cancelled equity instruments. If the employees are not required to complete an additional period of service before becoming unconditionally entitled to these replacement equity instruments, the incremental fair value is recognized immediately.

When new grants are not identified as replacement equity instruments

In the event that the new equity instruments granted are not identified as replacement equity instruments for the cancelled equity instruments, the entity is required to account for the new equity instruments as a new grant of equity. Hence, the fair value at grant date will be estimated for the new grant and the share-based payment expense will be recognized over the vesting period. Insofar as the cancelled equity instruments are concerned, it will be accounted for as a cancellation where any outstanding amounts that would otherwise have been recognized for services received over the remaining vesting period are recognized immediately.

Equity Instruments whose Fair Value cannot be Estimated Reliably

IFRS 2 paragraph 24 considers situations where the fair value of equity instruments cannot be estimated reliably as rare cases. In such cases, the standard allows the use of the intrinsic value method to determine the remuneration expense. Under the intrinsic value method, the remuneration expense is calculated as follows:

1. The entity measures the equity instruments at their intrinsic value (the difference between the share price and the exercise price multiplied by the number of equity instruments) on the date the entity receives the goods or services. Subsequently, at each reporting date, and on the date of final settlement, the equity instruments are remeasured in the same manner. The change in intrinsic value is recognized in profit or loss. In the case of share options, the final settlement date is the date when the options are exercised, forfeited, or lapsed.
2. The transaction amount recognized is based on the number of equity instruments that are expected to vest and the estimate is revised to be equal to the number of equity instruments that ultimately vest. In the case of share options, after the vesting date, the amount of expense recognized for goods or services received is reversed if the share options are forfeited or lapsed at the expiration date of the option.

CASH-SETTLED SHARE-BASED TRANSACTIONS

Some share-based plans pay cash to employees instead of issuing new equity instruments. These are known as cash-settled share-based transactions. An example is the share appreciation rights (SARs) granted by an entity to its employees as part of their remuneration package. Under a SARs plan, the employees are entitled to a cash payment that is based on the fair value of the equity instrument on the date the payment is made. A major attraction of SARs, from the viewpoint of the employees, is that they do not require the employees to incur a cash outlay upon the exercise of their vested options, particularly if the number of options involved is large. In a typical SARs plan, the entity incurs a liability for the services received from the employees since no equity instruments are issued. If there is a vesting period, the entity recognizes the services received and a liability to pay for them throughout the service period. The liability is measured initially on the basis of the fair value of the share appreciation rights, and re-measured at each reporting date through to the date of settlement (IFRS 2:30). The fair value of the share appreciation

rights is estimated using an option valuation model. Changes in the fair value of the liability are taken to profit or loss. Illustration 13.4 applies the principles of IFRS 2 in a share appreciation rights scheme.

ILLUSTRATION 13.4 Share appreciation rights[14]

On 1 January 20x1, ABC Company entered into an arrangement to grant 1,000 SARs to each of its 100 employees. The vesting period ended on 31 December 20x3. The exercise price was $30 per share. Each SAR entitled the employee to a cash payment that was equal to the increase in share price over the exercise price of $30 at settlement date. The excess of share price over the exercise price at the date of exercise was essentially the intrinsic value of the SAR. For simplicity, the illustration assumes that exercise was made at the end of the year. Additional information is as follows:

	20x1	20x2	20x3	20x4
Number of employees who left the entity during the year	3	4	2	
End-of-year estimate of the number of employees leaving during the vesting period	8	10	9	
Number of employees who exercised SARs on 31 December of that year			40	51

The fair values and intrinsic values of the SARs over the vesting period are as follows:

Date	Share price	Fair value	Intrinsic value
31 December 20x1		$12	
31 December 20x2		15	
31 December 20x3	$45	18	$15
31 December 20x4	49	22	19

The intrinsic values of the SARs on the date of exercise is the excess of the share price over the exercise price and is the amount that is paid out to employees who exercised their rights. The calculation of the remuneration expense to be recognized from the start of the plan to the date when all the SARs are exercised is shown below.

20x1

At the end of 20x1, 92,000 SARs were expected to vest to 92 employees who were expected to be in employment on 31 December 20x3. Therefore, the remuneration expense recognized in 20x1 was $368,000 (92,000 × $12 × ⅓).

20x2

At the end of 20x2, the number of SARs expected to vest was revised to 90,000 since 10% of the employees were expected to leave.

Estimated fair value of SARs at 31 December 20x2	
(90,000 × $15 × ⅔)	$900,000
Less estimated fair value of SARs at 31 December 20x1	(368,000)
Remuneration expense recognized in 20x2	$532,000

20x3

At the end of 20x3, 40 employees out of the remaining 91 employees exercised their SARs.

Estimated fair value of unexercised SARs at 31 December 20x3	
[(91 – 40) × 1,000 × $18]	$918,000
Less estimated fair value of unexercised SARs at 31 December 20x2	(900,000)
Change in fair value	$ 18,000
Add intrinsic value of SARs exercised in 20x3 (40 × 1,000 × $15)	600,000
Remuneration expense recognized in 20x3	$618,000

Total cumulative liability outstanding at 31 December 20x3 (vesting date) was $918,000.

20x4

At the end of 20x4, all SARs had been exercised.

Estimated fair value of unexercised SARs at 31 December 20x4	$ 0
Less estimated fair value of unexercised SARS at 31 December 20x3	918,000
Change in fair value	$(918,000)
Add intrinsic value of SARs exercised in 20x4 (51 × 1,000 × $19)	969,000
Remuneration expense recognized in 20x4	$ 51,000

Summary of remuneration expenses

20x1	$ 368,000
20x2	532,000
20x3	618,000
20x4	51,000
Total	$1,569,000

Check:

$$\text{Remuneration expenses} = \frac{\text{Number of}}{\text{employees}} \times \frac{\text{Number of SARS}}{\text{per employee}} \times \frac{\text{Actual cash paid}}{\text{(intrinsic value)}}$$

40 employees × 1,000 SARs × $15	$ 600,000

51 employees × 1,000 SARs × $19	969,000
	$ 1,569,000

The remuneration expense can also be worked out as a residual from the t-account of the liability under SARs or the remuneration payable account as shown below.

Remuneration payable

20x1		20x1	
Balance, 31 December	368,000	Expense (Residual)	368,000
20x2		20x2	
		Balance, 1 January	368,000
Balance, 31 December	900,000	Expense (Residual)	532,000
	900,000		900,000
20x3		20x3	
Cash paid	600,000	Balance, 1 January	900,000
Balance, 31 December	918,000	Expense (Residual)	618,000
	1,518,000		1,518,000
20x4		20x4	
Cash paid	969,000	Balance, 1 January	918,000
Balance, 31 December	0	Expense (Residual)	51,000
	969,000		969,000

The following journal entries are recorded over the vesting period.

31 Dec. 20x1	Dr Remuneration expense	368,000	
	Cr Remuneration payable		368,000
	Remuneration expense for the year ended 31 December 20x1		
31 Dec. 20x2	Dr Remuneration expense	532,000	
	Cr Remuneration payable		532,000
	Remuneration expense for the year ended 31 December 20x2		
31 Dec. 20x3	Dr Remuneration expense	618,000	
	Cr Remuneration payable		618,000
	Remuneration expense for the year ended 31 December 20x3		
	Dr Remuneration payable	600,000	

	Cr Cash		600,000
	Cash paid out during the year ended 31 December 20x3		
31 Dec. 20x4	Dr Remuneration expense	51,000	
	Cr Remuneration payable		51,000
	Remuneration expense for the year ended 31 December 20x4		
	Dr Remuneration payable	969,000	
	Cr Cash		969,000
	Cash paid out during the year ended 31 December 20x4		

SHARE-BASED PAYMENT ARRANGEMENTS WITH A CASH ALTERNATIVE

Another type of share-based arrangement contains provisions in which either the employees or the entity can elect to receive or pay either cash or an equity instrument such as share options. The accounting of share-based payment arrangements with a cash alternative depends on which party has the right to choose the settlement method. The cash alternative may be in the form of "phantom" shares, which give the holder the right to a cash receipt, which is equal to the fair value of a specified number of the entity's shares after the vesting period. The cash alternative may also be in the form of SARs that grant the holder the right to a cash amount that is the excess of the fair value on settlement date over the exercise price.

Choice of the Settlement Method Rests with the Entity

If the choice of the settlement method lies with the entity, it has to determine whether the arrangement carries a present obligation to settle in cash. IFRS 2 paragraph 41 provides indicators of such an obligation:

1. The choice of settlement has "no commercial substance," for example, the entity is not able to issue shares;
2. The entity has a past practice of settling in cash;
3. The entity has a stated policy of settling in cash; or
4. The entity has, in the past, settled in cash whenever requested by the counterparty.

If there is a present obligation to settle in cash, the entity has to account for the arrangement as a cash-settled share-based transaction by recording a liability when the remuneration expense is incurred. In the absence of a present obligation to settle in cash, the entity has a choice of settling in cash or by issuing equity instruments. If no present obligation for a liability exists, IFRS 2 paragraph 43 requires the transaction to be treated as an equity-settled share-based payment transaction prior to settlement. Upon settlement, special procedures apply to actual cash settlement or election of the settlement alternative with the higher fair value. However, no further accounting is required for equity settlement. The accounting procedures in IFRS 2 paragraph 43 are summarized in Table 13.2.

TABLE 13.2 Entity has a choice of the settlement method with no obligation to settle in cash

Prior to settlement		
Account as equity-settled share-based transaction, if there is no present obligation to settle in cash Dr Remuneration expense Cr Equity		
At settlement date	**Cash settlement has a higher fair value**	**Equity settlement has a higher fair value**
Entity chooses to settle in cash	Cash payment is accounted for as a repurchase of an equity interest, that is, an amount equal to the fair value of the equity instrument is deducted from equity Dr Equity Cr Cash An additional expense that is equal to the difference between the cash paid and the fair value of equity instruments that would otherwise have been issued is recognized at the settlement date (Note 1) Dr Remuneration expense Cr Equity Alternative composite entry: Dr Equity Dr Remuneration expense Cr Cash	Cash payment is accounted for as a repurchase of an equity interest, that is, an amount equal to the fair value of the equity instrument is deducted from equity Dr Equity Cr Cash
Entity chooses to settle through equity issue	No further accounting is required. However the share option reserve may be transferred to another component of equity	The excess of the fair value of the equity instrument over the amount of cash that would otherwise have been paid is recognized as an additional expense at settlement date (Note 1) Dr Remuneration expense Cr Equity

Note 1: Since the entity voluntarily chooses to pay more or issue a higher value of shares than it needs to, there is a presumption that the entity has received or expects to receive more services from the employee.[15] Hence, an additional amount of remuneration expense is recognized.

Entity Z has a choice to settle its employee options in cash $110,000 or shares. There is no present obligation and no past practice to settle in cash. On grant date, the equity value is $100,000. The options are vested over a service period of two years.

At the end of year 1, the journal entry is:

Dr Remuneration expense	$50,000	
Cr Equity		$50,000

Scenario 1 (settlement in cash, cash settlement has higher value than shares)

At the end of year 2, Entity Z chooses to settle in cash $110,000 (which has a higher value than share value of $100,000). Journal entries are:

Dr Remuneration expense	$50,000	
Cr Equity		$50,000
Dr Equity	$100,000	
Dr Remuneration expense	$10,000	
Cr Cash		$110,000

Scenario 2 (settlement in equity, cash settlement has higher value than shares)

At the end of year 2, Entity Z chooses to settle in equity (which has a lower value than cash). Journal entries are:

Dr Remuneration expense	$50,000	
Cr Equity		$50,000

Scenario 3 (settlement in cash, cash settlement has lower value than shares)

Entity Z has a choice to settle its employee options in cash $90,000 or shares. There is no present obligation and no past practice to settle in cash. On grant date, the equity value is $100,000.

At the end of year 2, entity Z chooses to settle in cash (which has a lower value than equity). Journal entries are:

Dr Remuneration expense	$50,000	
Cr Equity		$50,000
Dr Equity	$90,000	
Cr Cash		$90,000

Scenario 4 (settlement in equity, cash settlement has lower value than shares)

Entity Z has a choice to settle its employee options in cash $90,000 or shares. There is no present obligation and no past practice to settle in cash. On grant date, the equity value is $100,000.

At the end of year 2, entity Z chooses to settle in equity (which has a higher value than cash). Journal entries are:

Dr Remuneration expense	$50,000	
Cr Equity		$50,000

Choice of the Settlement Method Rests with the Employee

If the employee has the right to choose the settlement method,[16] the employee will obviously choose the alternative that has a higher economic value. Generally, the employee will opt for cash settlement unless the equity settlement has a higher fair value. If the employee chooses cash settlement, the entity incurs a liability. From the entity's perspective, the substance of the arrangement is effectively a grant of a compound financial instrument with debt and equity components.[17] The debt component is the employee's right to demand cash settlement of equity instruments and the equity component is the employee's right to demand settlement in equity instruments other than cash. The two components are mutually exclusive as the exercise of one component "extinguishes" the other component. In transactions with employees, IFRS 2 paragraph 37 requires that the fair value of the debt component be determined first and then the fair value of the equity component. The measurement of the fair value of equity component must take into account the forfeiture of the right to receive cash when the right to receive equity instruments is selected. The relationships are shown below:

$$\text{Fair value of the debt component} = \text{Fair value of the "cash alternative"}$$

$$\text{Fair value of the equity component} = \text{Fair value of the "equity alternative"}^{18} - \text{Fair value of the "cash alternative"}.$$

$$\text{Fair value of the compound financial instrument} = \text{Fair value of the debt component} + \text{Fair value of the equity component}$$

A share-based payment arrangement with a cash alternative may be such that the fair value of one settlement alternative is the same as the other, that is, it makes no difference to the employee whether he elects to receive cash or shares. For example, an employee is offered either share options ("the equity alternative") or a future cash payment that is the excess of the future share price over the exercise price ("the cash alternative"). If the options are in-the-money,[19] the employee can exercise the options and sell the underlying shares and arrive at the same cash position as under the cash alternative. In this situation, there is no marginal benefit from exercising the equity alternative over the cash alternative. The fair value of the equity alternative is equal to the fair value of the cash alternative. Applying the relationships above, the fair value of the equity component is zero and the fair value of the compound financial instrument is equal to the fair value of the debt component (IFRS 2:37). However, if the fair value of the equity alternative is greater than the cash alternative, the fair value of the compound financial instrument is greater than the fair value of the debt component alone. In this case, the equity component is positive because the fair value of the equity alternative is greater than that of the cash alternative.

IFRS 2 paragraphs 38–40 require that the two components of debt and equity be accounted for separately as follows:

1. The fair values of the debt component and the equity component are to be determined at measurement date in accordance with the principles discussed above.
2. The debt component is required to be accounted for in accordance with the procedures for cash-settled share-based payment transactions, that is, the entity recognizes a remuneration expense when service is provided over the vesting period and records a liability. At each reporting date, the fair value of the liability is remeasured and recognized as profit or loss (IFRS 2:30). In the case of the equity component, the procedure is the same as for equity-settled share-based payment transactions. The remuneration expense is recognized and equity is increased when the service is provided over the vesting period (IFRS 2:10-13).
3. At settlement date, the liability is remeasured to its fair value. If the entity issues equity instruments instead of paying cash to settle the liability, the issue of the equity instrument is treated as the consideration for settlement of the liability, that is, the liability is transferred to equity. On the other hand, if the entity settles the liability in full by paying cash, the equity component recognized previously remains in equity, but is transferable from one component of equity to another.

Illustration 13.5[20] shows the accounting for a share-based transaction with a cash alternative.

ILLUSTRATION 13.5 Share-based transaction with a cash alternative

On 1 January 20x3, Delta Corporation granted its chief executive officer an award of either a cash payment that was equal to market values on 100,000 shares of Delta Corporation (the cash alternative), or 400,000 share options with an exercise price of $3.00 (the equity alternative). The exercise price was the same as the market price of Delta Corporation on the date of the grant. The choice lay with the chief executive officer at the vesting date. The grant, which had a vesting period of three years, would expire five years after the grant date.

The fair value of the share options (the equity alternative) at 1 January 20x3 was estimated at $1.20 per option using an option valuation model. The fair values of the two components of the compound financial instrument were estimated at measurement date as follows:

Fair value of equity alternative (400,000 × $1.20)	$480,000
Less fair value of debt component (100,000 shares × $3.00)	(300,000)
Fair value of equity component	$180,000

The share prices of Delta Corporation at the end of 20x3 and 20x4 were $3.30 and $3.60 respectively.

Assume the following share prices at the end of 20x5:

Situation 1: The share price of Delta Corporation at the end of 20x5 was $3.80.

Situation 2: The share price of Delta Corporation at the end of 20x5 was $4.50.

A comparison of the cash alternative with the equity alternative shows that under Situation 1, it is in the interest of the chief executive officer to choose the cash alternative, as this alternative settlement method is economically more beneficial.

Cash alternative (100,000 × $3.80)	$380,000
Share options (intrinsic value) [400,000 × ($3.80 – $3.00)]	320,000
Difference in favor of the cash alternative	$ 60,000

Therefore, the chief executive officer will choose to receive cash on the vesting date.

Under Situation 2, the chief executive officer will choose the share options as this alternative is economically more beneficial.

Cash alternative (100,000 × 4.50)	$450,000
Share options (intrinsic value) [400,000 × ($4.50 – $3.00)]	600,000
Difference in favor of the equity alternative	$150,000*

* Transaction costs have been excluded.

The chief executive officer will, therefore, choose the equity alternative.

Situation 1

At the end of 20x3, the fair value of the liability had to be remeasured in line with cash-settled share-based payment transaction (IFRS 2:30). As the share price had increased to $3.30 at 31 December 20x3, the fair value of the debt component increased. The fair value of the equity component was not remeasured but remained at the fair value as at measurement date. A time weighting of ⅓ was applied to determine the remuneration expense.

Calculation of remuneration expense for 20x3:	
Debt component ($3.30 × 100,000 shares × ⅓)	$110,000
Equity component ($180,000 × ⅓)	60,000
Remuneration expense recognized in 20x3	$170,000

The debt component was revised upwards to reflect the increase in the share price during 20x4. The change in the fair value of the debt component was recognized as remuneration expense. A similar analysis was done for 20x5.

Calculation of remuneration expense in 20x4:	
Debt component ($3.60 × 100,000 × ⅔)	$240,000
Less amount recognized in 20x3	(110,000)
Additional expense recognized in 20x4	$130,000
Equity component ($180,000 × ⅓)	60,000
Total expense recognized in 20x4	$190,000

Calculation of remuneration expense in 20x5:	
Debt component ($3.80 × 100,000)	$380,000
Less amount recognized in prior years	(240,000)
Additional expense recognized in 20x5	$140,000
Equity component ($180,000 × ⅓)	60,000
Total expense recognized in 20x5	$200,000

The journal entries to record the remuneration expense and the debt and equity components are as follows:

31 Dec. 20x3	Dr Remuneration expense	170,000	
	Cr Liability		110,000

	Cr Share option reserves (Equity)			60,000
	To recognize remuneration expense for the debt and equity components and to record a liability.			
31 Dec. 20x4	Dr Remuneration expense	190,000		
	Cr Liability			130,000
	Cr Share option reserves (Equity)			60,000
	To recognize remuneration expense for the debt and equity components and to record change in the fair value of the liability			
31 Dec. 20x5	Dr Remuneration expense	200,000		
	Cr Liability			140,000
	Cr Share option reserves (Equity)			60,000
	To recognize remuneration expense for the debt and equity components and to record change in the fair value of the liability			
1 Jan. 20x6	Dr Liability	380,000		
	Cr Cash			380,000
	To record payment of cash in full settlement of the liability			

Note the following:

1. Changes in the fair value of the debt component as a result of changes in the share price of Delta Corporation are taken into account in the periods during which the changes occurred as the liability is not settled.
2. The expense relating to the equity component is allocated on a straight-line basis over the expected derived service period.
3. The equity component is not remeasured because it is not a liability.
4. The share option reserve remains in shareholders' equity although it can be transferred to another component of equity.

Situation 2

Assume that the share option is exercised on 1 January 20x6. Calculation for the remuneration expense in 20x3 and 20x4 are the same as in Situation 1.

Calculation of remuneration expense for 20x5:	
Debt component ($4.50 × 100,000)	$450,000
Less amount recognized in prior years	(240,000)
Additional expense recognized in 20x5	$210,000
Equity component ($180,000 × ⅓)	60,000
Total expense recognized in 20x5	$270,000

The journal entries to record the remuneration expense and the debt and equity components for 20x3 and 20x4 are the same as in Situation 1. The journal entry as at 31 December 20x5 and 1 January 20x6 are shown below.

31 Dec. 20x5	Dr Remuneration expense	270,000	
	Cr Liability		210,000
	Cr Share option reserve (Equity)		60,000
	To recognize remuneration expense for the debt and equity components and to record the change in the fair value of the liability		
1 Jan. 20x6	Dr Liability	450,000	
	Dr Cash	1,200,000	
	Cr Share capital		1,650,000
	Issue of shares on the exercise of the options and as consideration for the settlement of the liability in accordance with IFRS 2 paragraph 39		

Note the following:

1. Since the grantee chooses the equity alternative, the liability is settled by an increase in share capital (IFRS 2:39).
2. The equity of the entity after the exercise of the options is increased by $1,830,000 as shown below:

Additional share capital	$1,650,000
Share option reserves	180,000
	$1,830,000

Check:

Total remuneration expense	$ 630,000
Cash received from exercise of options (400,000 × $3.00)	1,200,000
	$1,830,000

Because there are many forms of share-based transactions in practice, only the major types have been covered in this text. *Guidance on Implementing IFRS 2 Share-based Payment* provides examples of a variety of share-based payment plans and the application of the standard to these plans. Among the more complicated plans are:

1. Equity-settled share-based performance plans in which the length of the vesting period varies;
2. Equity-settled share-based performance plans in which the exercise price varies;
3. Grants with a market condition;
4. Grants with a market condition, in which the length of the vesting period varies;
5. Grant of shares with a cash alternative subsequently added;
6. Grant of share options that is accounted for by the intrinsic value method;
7. Employee purchase plans; and
8. Tandem plans with options or cash alternatives.

TAX IMPLICATIONS OF SHARE-BASED PAYMENT TRANSACTIONS

The discussion and the illustrations above have ignored the tax effects of share-based payment transactions. When the tax regime allows for the deduction of remuneration expenses related to share-based payment transactions at the point of exercise of the options, deferred tax considerations have to be taken into account. This is because in the accounting books, the cumulative remuneration expenses pertaining to the services provided have all been expensed while tax deductions will be allowed by the tax authorities only in future periods. Thus, accounting expense precedes tax deductibility and a deductible temporary difference that results in a deferred tax asset arises (IAS 12:68A).

The carrying value of the deferred tax asset is based on the estimated future tax deductions (referred to as the tax base in IAS 12 paragraph 68B), assuming that there is sufficient future profit to realize the tax benefit. Usually, the estimation of the future tax deductions is based on the intrinsic value of the share options that are exercised.

For equity-settled share-based transactions, the tax base may or may not be greater than the cumulative remuneration expense. If the estimated future deduction exceeds the related cumulative remuneration expense, the excess is recognized in equity (IAS 12:68C). In other words, only the tax effects relating to remuneration expense in profit or loss are recognized on the income statement in line with the matching concept. Illustration 13.6 shows the accounting of tax effects of a fixed option plan.

ILLUSTRATION 13.6 Tax effects of a fixed option plan

Refer to Illustration 13.1. Assume that the exercise date was 1 January 20x3. The remuneration expense recognized each year and the number of options expected to vest are summarized below.

Year	Remuneration expense	Number of options expected to vest
20x1	$140,000	700,000
20x2	180,000	800,000
Total	$320,000	

The following additional information is available:

(a) The market prices of Capital Corporation's shares at the end of 20x1 and 20x2 were $2.50 and $2.80 respectively. The exercise price was $2.00 per share.

(b) At the exercise date (1 January 20x3), the share price was $2.80.

(c) The tax authorities allowed the deduction for the remuneration expense relating to the share options in an equity-settled share-based transaction based on the intrinsic value at the exercise date.

(d) The tax rate was 20%.

20x1

The intrinsic value at 31 December 20x1 was $0.50 per option ($2.50 minus exercise price of $2.00).

Cumulative remuneration expense in 20x1	$140,000
Tax deduction based on intrinsic value (700,000 × $0.50 × ½)	175,000
Excess of tax base over cumulative expense	$ 35,000
Deferred tax asset at 31 December 20x1 ($175,000 × 20%)	$ 35,000
Allocated to:	
Tax income (income statement) ($140,000 × 20%)	$ 28,000
Equity ($35,000 × 20%)	7,000
	$ 35,000

The tax deduction based on intrinsic value is time-weighted by ½ as the options are expected to vest only at the end of 20x2. A deferred tax asset of $35,000 represents future tax savings arising from the expected exercise of 700,000 options. In this scenario, the tax base exceeds cumulative expense and the tax effects of the excess are taken to equity. Tax income recognized is proportional to current remuneration expense. However, if the tax deduction is lower than cumulative remuneration expense, tax income recognized in the income statement will not be proportionate with current remuneration expense. (IAS 12 Illustrative Example 5 shows the effects when tax deduction is lower than cumulative remuneration expense.)

The journal entries to record the related tax expense and deferred tax asset are as follows:

31 Dec. 20x1	Dr Deferred tax asset	35,000	
	Cr Tax income		28,000
	Cr Share option reserves (equity)		7,000
	To record deferred tax asset		

20x2

The intrinsic value at 31 December 20x2 was $0.80 per option ($2.80 minus exercise price of $2.00).

Cumulative remuneration expense in 20x2	$320,000
Tax deduction based on intrinsic value (800,000 × $0.80)	640,000
Excess of tax base over cumulative expense in 20x2	$320,000
Excess of tax base over cumulative expense in 20x1	(35,000)
Change in excess of tax base over cumulative expense	$285,000
Deferred tax asset at 31 December 20x2 ($640,000 × 20%)	$128,000
Deferred tax asset at 31 December 20x1	35,000
Change in deferred tax asset	$ 93,000
Allocated to:	
Tax income (income statement) ($180,000 × 20%)	$ 36,000
Equity ($285,000 × 20%)	57,000
	$ 93,000

Tax income of $36,000 in 20x2 was 20% of the remuneration expense recognized in 20x2 of $180,000. The tax effects of the change in excess deduction of $285,000 in 20x2 were taken directly to equity.

The journal entries to record the related tax expense and deferred tax asset are as follows:

31 Dec. 20x2	Dr Deferred tax asset	93,000	
	Cr Tax income		36,000
	Cr Share option reserves (equity)		57,000
	To record increase in deferred tax asset		

On 1 January 20x3, all the options were exercised.

Tax deduction based on intrinsic value	$640,000
Tax income realized (at 20%)	128,000

1 Jan. 20x6	Dr Current tax payable	128,000	
	Cr Deferred tax asset		128,000
	Realization of deferred tax asset		

ACCOUNTING ISSUES RELATING TO EMPLOYEE SHARE OPTIONS

The issue of whether or not to expense employee share options has been a highly controversial one. A number of interest groups from various industries and politicians have voiced their views strongly against the recognition of remuneration expense related to share options. The controversy revolves around the following main issues:

1. Are the share options granted to employees comparable with other forms of compensation such as bonuses?
2. Does the grant of share options meet the definition of an "expense?"
3. Can the fair value of employee share options be estimated reliably in view of the various restrictions on the transfer of the share options?

Opponents to the expensing of share options argue that share options are not directly comparable to salaries and bonuses as the main objective of granting share options is to attract talented employees and to encourage loyalty to the entity. The rebuttal to this objection is that there are other perks that are not directly comparable to salaries and bonuses but are legitimately recognized as expenses, for example, medical insurance and pension benefits. Share options are no different from these perks.

The second argument against expensing share options rests on the interpretation of the definition of "expense." The Framework defines "expense" as resulting from the outflows or the using up of resources and the incurrence of liabilities. Opponents of expensing argue that share options do not meet these requirements. In their view, they are capital transactions that do not give rise to expenses. To address this objection, it is necessary to determine whether options have an economic value. Even though the employee does not pay a premium for the option, there is no question that options have an economic value, that is, they convey an economic benefit to the grantee, notwithstanding the fact that there are restrictions attached to the options. If we accept that the options issued by a

entity are valuable, they are issued for some consideration. What is this consideration? In transactions with parties other than employees, entities normally issue options in consideration for cash or other valuable financial assets. In the case of employee share options, the consideration is the service provided or to be provided by the employee. Since the employee's service is used in the entity's operation and the entity benefits from it, an expense has been incurred by the entity and the consideration in exchange for this is the share options. So it is not important whether the consideration is in cash or in kind.

It is true that employee share options have restrictions, such as non-transferability, which are not present in other types of options. However, the presence of such restrictions means that the value of employee share options will be less than the value of options issued by the same entity without the restrictions. The problem of measuring the fair value of employee share options with restrictions is not an insurmountable one. There are various option valuation models that can be adapted to estimate the fair value of employee share options, for example, the Black-Scholes model and the binomial option valuation model (see Appendix 13B).

Standard setters such as the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) are of the view that the arguments for the expensing of employee share options are sound and that this will improve the financial reporting.

Shared-based Payments in a Business Combination

In business combination transactions, it is not uncommon for the acquirer to exchange its share-based payment awards (replacement awards) for awards held by the employees of the acquiree. IFRS 3 provides detailed guidance on how to account for such share-based payment transactions in business combination. Please refer to Chapter 3 for a more in depth discussion on the accounting treatment.

APPENDIX 13A

Share-based Payment Transactions Among Group Entities

In 2009, the Board issued amendments to IFRS 2 to provide greater guidance on how to account for share-based payments among group entities. Share-based payments are complex when one group entity issues equity instruments on behalf of another entity. A few possible arrangements are as follows:

1. Parent issues its equity instruments to employees of its subsidiary;
2. Subsidiary issues parent's equity instruments to employees of the subsidiary;
3. Subsidiary settles share-based payment with employees of the subsidiary;
4. Parent settles share-based payment with employees of the subsidiary; and
5. Other parties (for example, an investor of the parent) settles share-based payment with employees of the subsidiary.

The Board provides two overriding principles to guide the accounting for share-based payment transactions among group entities. The first principle is that an entity that receives the goods and services measure the transaction as equity-settled share-based payment transaction when:

(a) The awards granted are the entity's own equity instruments; or

(b) The entity has no obligation to settle the share-based payment transaction (IFRS 2:43B)

In all other circumstances, the entity that receives the goods and services measures the transaction as a cash-settled share-based payment. This first principle has to be applied from the perspective of both the group and the legal entity that receives the goods and services. The recipient of the goods and services may be interpreted as the entity within the group or the group itself.

The second principle is that an entity settling a share-based payment transaction when *another* entity receives the goods and services:

1. Measures the transaction as an equity-settled share-based payment if it is settled in the entity's own instruments;
2. Otherwise, the entity measures as cash-settled share-based payment (IFRS 2:43C).

The second principle has to be applied also from the perspective of legal entity that settles the share-based payment transaction on behalf of another entity. In a group, it is common practice for the parent company to issue its equity instruments (shares and/or options) to employees of its subsidiaries.

Consider the following situations:

Situation 1: Parent Co issues share options to the employees of Subsidiary Co. We evaluate the nature of the share-based payment from the perspective of each of the three entities:

1. Subsidiary Co (the entity that receives the services);
2. Parent Co (the entity that settles the transaction in its own equity instruments on behalf of the subsidiary); and
3. The Group (the entity that receives the services and that settles the transaction in its own equity instruments).

Applying the first principle, Subsidiary Co should recognize the transaction as equity-settled because it is the recipient of the service and has no obligation to settle the transaction. The journal entry would be:

Dr Employee expense

Cr Equity contribution from parent

Applying the second principle, Parent Co should recognize the issue of the stock options as equity-settled because it settles on behalf of its subsidiary, which is receiving the benefit of the service. The journal entry in Parent Co's books is:

Dr Investment in subsidiary

Cr Equity

From the Group's perspective, the share-based payment should be accounted for as equity-settled in accordance with the first principle. The Group is the recipient of the service and also issues its own equity instruments in settlement. In the consolidated financial statements, the implicit entry is:

Dr Employee expense

Cr Equity

If the parent charges the subsidiary for the share options issued by the parent, the journal entries would be:

Subsidary's financial statements
Dr Expense
Cr Payable to parent

Parent financial statements
Dr Receivable from subsidiary
Cr Equity

Group's consolidated financial statements

From the Group's perspective, the share-based payment continues to be accounted for as an equity settled share-based payment for reasons discussed above.

Situation 2: Subsidiary Co issues to its employees purchased stock options of Parent Co. Applying the first principle, Subsidiary Co would account for it as a cash-settled transaction because it is the recipient of the service, does not issue its own equity instruments but has an obligation to settle the transaction. The obligation will be settled through the purchase of stock options from Parent Co on behalf of the employees. In Subsidiary Co's books, the journal entry would be:

Dr Employee expense
Cr Liabilities

Parent Co is not involved in this situation. It neither receives the services nor settles the transaction on behalf of its subsidiary. Hence, no accounting entries are passed in the financial statements of Parent Co. However, from the Group's Perspective, the Group is a recipient of the services and issues the equity instruments to settle the transactions. Applying the first principle, the Group would account for the transaction as equity settled as follows:

Dr Employee expense
Cr Equity

Hence, for the purpose of preparing the consolidated financial statements of the Group, a consolidation journal entry will be effected to reverse the accounting entries passed in the standalone financial statements of subsidiary Co and a separate consolidation journal entry will be effected to record the equity-settled share-based payment transaction at Group level. The consolidation journal entries are as shown:

Dr Liabilities
Cr Employee expense

Dr Employee expense
Cr Equity

Situation 3: A shareholder of the Group grants Parent Co's stock options to the employees of Subsidiary Co. Applying the first principle, both the Group and Subsidiary Co recognize the share-based payment as equity settled.

Parent Co is not involved in this situation and either principle would not be applicable to Parent Co. Both the Group and Subsidiary Co would account for the transaction as equity settled as follows:

Dr Employee expense

Cr Equity contributions from shareholder

APPENDIX 13B

Using Option Valuation Models to Estimate the Fair Value of Share Options

Option valuation models use the following inputs to arrive at the fair value of an option:

1. Exercise price;
2. Current price of the underlying;
3. Life of the option — the longer the life, the greater is the value of the option;
4. Expected volatility of the underlying share price — the greater the volatility, the greater is the value of the option;
5. Risk-free interest rate; and
6. Expected dividend on the underlying share.

There are two main groups of option valuation models:

1. Closed-form model; and
2. Open-form or lattice model.

These two groups differ in terms of the assumptions and the methodology of calculating an option's fair value.

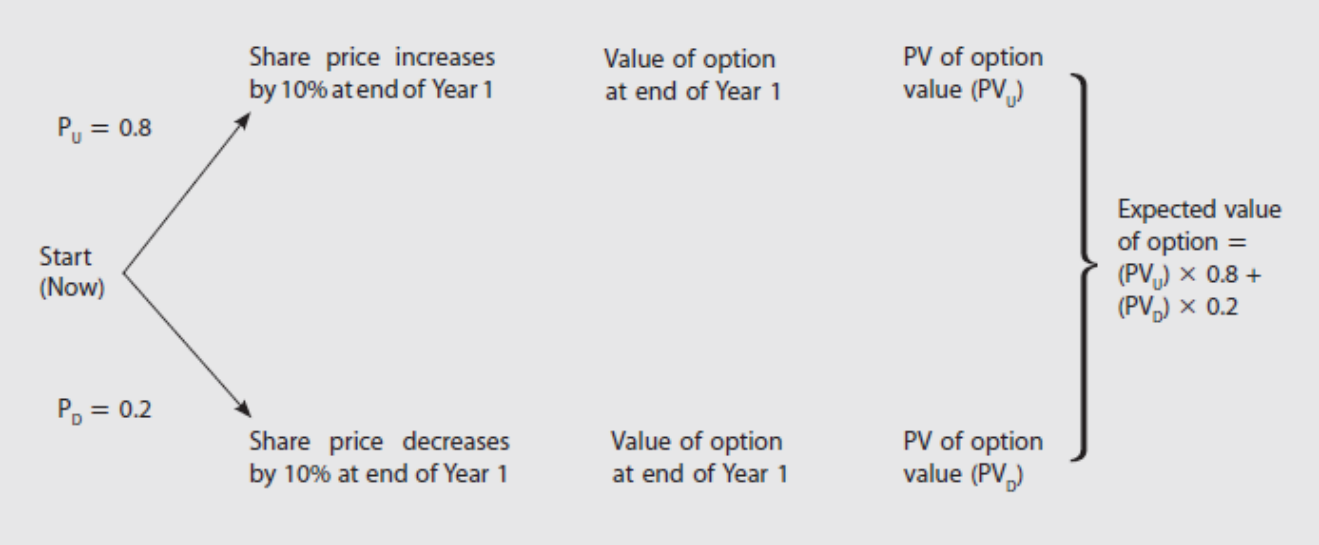
The Black-Scholes Model (Closed-form)

The closed-form model solves or deduces the value of an option from an equation. The modified Black-Scholes (BS)[21] model is probably the most widely used closed-form model for valuing options that are traded. The main features and assumptions of this model are as follows:

1. Calculates the value of a European-style option, that is, the option can only be exercised at the expiration date;
2. Assumes a constant volatility;
3. Assumes a constant risk-free interest rate; and
4. Assumes that the option cannot be terminated or forfeited prior to expiration.

The Binomial Model (Open-form)

This model[22] uses a multiplicative process that involves "constructing" a tree of possible future share price movements that could be up or down. Each upward or downward price movement is assigned a probability. If the process is repeated over many periods, a "tree" (similar to a decision tree) is constructed. To simplify the explanation, assume two possible prices in the future (say one year's time), one of which represents a percentage increase in the share price while the other represents a percentage decrease in the share price. Probabilities are assigned to each path or "branch" of the tree. Assume there is a probability of 0.8 (P_U) that the share price will increase by 10% at the end of the year, and a probability of 0.2 (P_D) that it will decrease by 10% at the end of the year. Next, based on the future share prices, calculate the option's values (one value for each future price). Finally, discount the future values of the option into a single expected value. The "tree" is shown below.



It must be emphasized that employee share options have a number of factors that may make the standard models inappropriate, or at least require modifications to the models. These factors include:

1. Restrictions on transfer;
2. Absence of a quoted market price for the share;
3. Ability of employees to exercise only at the vesting date and not at any time during the option's life; and
4. Tendency of employees to exercise their vested options early due to a number of reasons, for example, non-transferability or the cessation of employment.

Thus, for employee share options, the traditional valuation model will have to be modified to take account of these factors. IFRS 2 Appendix B provides a detailed discussion and guidelines on how to make modifications to the inputs under varying circumstances.

While the BS model is probably the most widely used model, the binomial model has a number of advantages over it:

1. It can value an American-style option, which can be exercised before the end of its term. This is akin to employees exercising their options before the end of the full term;
2. It accommodates non-constant volatility so that entities can assume a range of volatility;
3. It accommodates a non-constant risk-free rate so that entities can assume a range of future risk-free rates; and
4. There is no need to restrict the option's life to the term of the option due to illiquidity factors because these factors are taken into account in vesting restrictions and the early exercise assumption.

CONCEPT QUESTIONS

CQ13.1 Describe the three types of share-based payment transactions under IFRS 2.

CQ13.2 Explain the following terms:

(a) Grant date
(b) Measurement date
(c) Vesting date
(d) Vesting conditions
(e) Forfeiture rate

CQ13.3 Discuss the methods of measurement of the fair value of equity instruments allowed under IFRS 2.

CQ13.4 What "vesting assumptions" need to be made in calculating remuneration expense?

CQ13.5 Explain the general principles in the accounting for share-based transactions.

CQ13.6 Explain the types of vesting conditions and their significance in accounting for share-based transactions.

CQ13.7 Explain what is meant by "repricing" and how it is accounted for under IFRS 2.

CQ13.8 Explain how a share appreciation rights plan work.

CQ13.9 Under what circumstances is it permissible to use the intrinsic value to measure remuneration expense?

CQ13.10 Explain the differences in accounting treatment between an equity-settled share-based transaction and a cash-settled share-based transaction.

CQ13.11 P Co has an obligation to settle share-based payment with employees of its subsidiary S Co in P Co's equity instruments. How should the share-based payment transaction be accounted for by P Co, S Co and the Group? Show the journal entries that apply in this situation.

CQ13.12 P Co has an obligation to settle share-based payment with employees of its subsidiary S Co in S Co's equity instruments. How should the share-based payment transaction be accounted for by P Co, S Co, and the Group? Show the journal entries that apply for each entity.

CQ13.13 S Co has an obligation to pay its employees remuneration that is pegged to the price of shares of its parent, P Co. How should the share-based payment transaction be accounted for by P Co, S Co, and the Group? Show the journal entries that apply for each entity.

CQ13.14 P Co has an obligation to pay to employees of its subsidiary, S Co, remuneration that is pegged to the price of shares of P Co. How should the share-based payment transaction be accounted for by P Co, S, and the Group? Show the journal entries that apply for each entity.

EXERCISES

E13.1 Accounting for share appreciation rights

The following information appeared in the footnote disclosure to the 20x1 annual report of SG Company Ltd.

> The company has introduced a share appreciation rights plan on 1 January 20x1, whereby 100,000 share appreciation rights (SARS) are given to ten of our managers. Under this plan, each manager is entitled to receive cash based on the increase in the company's share price from 1 January 20x1 to 31 December 20x2 provided they remain in the company's employment at 31 December 20x2.

On 1 January 20x1, the share price of SG Company Ltd was $5 per share. The share prices of SG Company subsequent to the grant were as follows:

31 December 20x1	$6.00 per share
31 December 20x2	$7.50 per share

SG Company estimated that the forfeiture rate would be nil. No manager left the company in 20x1 and 20x2. At the time of award of the grant, IFRS 2 had not been issued.

Required:

Discuss how SG Company Ltd should account for the share appreciation rights assuming that IFRS 2 had been adopted in 20x1 and 20x2. Ignore tax effects.

E13.2 Accounting treatment and tax effects of share options

On 1 July 20x3, Alpha Company introduced a share option plan. Under the plan, one million share options with an estimated fair value of $4.3 million was granted to selected employees. The options have a vesting period of two years from date of grant. The intrinsic values of the options at 30 June 20x4 and 30 June 20x5 were $1.9 million and $2.3 million respectively. On 1 July 20x5, all the options were exercised.

As this is the first time the entity has a share-based compensation plan, the directors are unsure of how to account for the share options and have sought your advice on the accounting treatment.

Required:

Advise the directors on the treatment of the share options for the years ended 31 October 20x4 and 20x5 in accordance with IFRS 2.

E13.3 Equity-settled share-based transaction

On 1 June 20x3, Delphi Company granted 100,000 share options with an exercise price of $3 to its chief executive officer. The fair value of the options was $2.30 at the date of the grant. The following conditions relate to the grant:

(a) The vesting date was 1 June 20x6. The grantee must remain an employee at the vesting date.
(b) The share options did not vest until the share price had increased to above $4.

The chief executive officer was not expected to leave the company after 1 June 20x6. Delphi Company's year-end is 31 May. Ignore taxation.

Required:

1. Assume that the share price of Delphi Company did not go above $4 at all. Prepare the journal entries for the years ended 31 May 20x4, 20x5 and 20x6.
2. Assume that the share price of Delphi Company on 1 June 20x6 was $4.30 and the chief executive officer exercised his share options. Prepare the journal entries on 1 June 20x6.

E13.4 Equity-settled share-based transaction with non-employees

On 1 December 20x1, Eastern Corporation engaged the services of an investment bank to provide consultancy services on its initial public offering (IPO) in May 20x2. The agreed fee for the consultancy services was $500,000, which was to be settled by Eastern Corporation issuing 2,500,000 ordinary shares to the investment bank. The fee was not conditional on the success of the initial public offering. Assume that the service was performed continuously over the period to May 20x2.

The initial public offering was successfully launched on 31 May 20x2. Eastern Corporation's financial year-end is 31 December.

Required:

Prepare journal entries to record the share-based transaction on 31 December 20x1 and 31 May 20x2.

PROBLEMS

P13.1 Equity-settled share-based transaction

On 1 January 20x1, ACO Corporation awarded fixed options to 100 employees to acquire 10,000 shares of the company under the following terms:

(a) The exercise price was $5 per share (same as the market price at 1 January 20x1).
(b) The fair value of the option was determined to be $1.50 using the Black-Scholes model.
(c) The share option expired five years after the date of the grant.
(d) The employees must remain employed until 31 December 20x3.
(e) The management estimated a forfeiture rate of 3%. This estimate was revised at the end of each year.

(f) In 20x1, three employees left the entity and the forfeiture rate was revised to 5% at 31 December 20x1.

(g) In 20x2, another two employees left the entity and the forfeiture rate was maintained at 5% at 31 December 20x2.

(h) In 20x3, one employee left the entity.

Required:

1. Calculate the remuneration expense relating to the share options for each of the years 20x1, 20x2, and 20x3.
2. Prepare the journal entries to record the share-based transactions for the period 20x1 to 20x3.

P13.2 Share-based payment with cash alternative

On 1 January 20x1, Delco Company initiated a share-based compensation plan for its ten employees. Under the plan, each employee was given two choices: either a right to a cash payment equal to the value of 10,000 shares (also known as "phantom" shares), or 11,000 shares. If the latter alternative was chosen, the employee must hold the shares for three years. The grant vested only if the employee completed three years' of service from the date of the grant. The following information relates to Delco's share price at various relevant dates:

Date	Price per share
1 January 20x1	$3.00
31 December 20x1	3.50
31 December 20x2	4.00
31 December 20x3	5.00

Delco did not expect any of its executives to leave in the next three years and did not intend to pay dividends during this period. The estimated fair value of the share alternative at 1 January 20x1 was $2.80 per share. This estimate took into account the effects of the post-vesting transfer restrictions. None of the employees had left Delco. Ignore taxation.

Required:

1. Calculate the fair value of each of the alternatives at the grant date.
2. Calculate the remuneration expense for 20x1, 20x2 and 20x3 assuming:
   (a) The employees chose the cash alternative at the end of 20x3.
   (b) The employees chose the equity alternative at the end of 20x3.

P13.3 Calculation of share-based compensation expense based on intrinsic value method

On 31 December 20x0, Carmen Corporation granted 10,000 share options to 35 employees. The share options would vest at 31 December 20x3 provided the employees remained in service until then. The share options had a life of five years. The exercise price was $0.85, which was the same as Carmen's share price at the date of grant.

At the date of the grant, Carmen Corporation concluded that it could not estimate reliably the fair value of the share options granted. The number of employees leaving the entity and the number of employees expected to leave during the vesting period are as follows:

	20x1	20x2	20x3
Number of employees who left the entity during the year	2	2	1
End-of-year estimate of the number of employees leaving during the vesting period	7	5	5

Carmen's share price during the years 20x1 to 20x5, and the number of share options exercised during the years 20x4 and 20x5, are set out below. Assume that the share options that were exercised during a particular year were all exercised at the end of that year. Ignore taxation.

Year	Share price at year-end	Number of share options exercised at year-end
20x1	0.94	0
20x2	1.00	0
20x3	1.10	0
20x4	1.20	200,000
20x5	1.25	100,000

Required:

1. Calculate the remuneration expense for each year from 20x1 to 20x5.
2. Prepare journal entries at the end of each year.

P13.4 Share-based payment scheme with cash alternative

On 1 January 20x2, Bonjour Company granted 100,000 shares to its chief financial officer, conditional upon the completion of three years' service. The share price of Bonjour Company was $3.00 at the date of the grant. At 31 December 20x3, the share price dropped to $2.70 per share. At that date, Bonjour Company added a cash alternative to the grant, whereby the chief financial officer could choose to receive 100,000 shares or cash equal to the value of 100,000 shares on vesting date. The share price was $2.50 on vesting date. Ignore taxation.

Required:

Calculate the remuneration expense for 20x2, 20x3, and 20x4.

P13.5 Equity-settled share-based plan with a performance condition

Icon Company initiated a share option plan for its chief executive officer on 1 January 20x1. The terms of the share option plan are as follows:

(a) The vesting date is 31 December 20x3 and the chief executive officer must still remain in the company's employ at that date.

(b) The number of options that will vest is dependent on the average rate of growth of earnings per share over the next three years as follows:

   (i) If the average rate of growth of earnings per share per year is less than 10%, the number of share options is nil.

   (ii) If the average rate of growth of earnings per share per year is between 10% and 15%, 100,000 share options will be given to the chief executive officer.

   (iii) If the average rate of growth of earnings per share per year exceeds 15%, 150,000 share options will be

given to the chief executive officer.

The fair value of one option was estimated at $5 at the grant date. Icon Company expected the average annual growth rate of the company to be not less than 10% per year.

Earnings per share for the year ended 31 December 20x1 increased by 13% and the company expected this rate of growth to be maintained for the next two years. For the year ended 31 December 20x2, earnings per share increased by 20% and the company expected the average rate of growth of earnings per share for the three years to 31 December 20x3 to be 16.5% (average of 20x1 and 20x2 growth rates). The actual earnings per share for the year ended 31 December 20x3 was 10%. Ignore taxation.

Required:

1. Calculate the remuneration expense relating to the share options for the period 20x1 to 20x3.
2. Prepare the journal entries relating to the share options for each of the years.

P13.6 Equity-settled share-based compensation plan

On 1 December 20x0, the board of Progressive Corporation approved a share option plan for selected employees. Up to 5,000,000 ordinary shares could be issued under this option plan. The terms of the share option plan are as follows:

(a) Each option entitles the holder to acquire one ordinary share of Progressive Corporation.

(b) The exercise price is set at the market price on the date of the grant.

(c) The options are exercisable two years from the grant date.

(d) The options expire five years after the grant date or at the date the grantee leaves the employment of Progressive Corporation without exercising the option, whichever is the earlier.

On 15 December 20x0, the option plan was approved by the shareholders; on 1 January 20x1, the board awarded the options to acquire 100,000 shares to each of the 100 employees. The share price at that date was $8 per share. The board estimated the fair value of the option to be $0.80. The management of Progressive Corporation was of the opinion that the forfeiture rate could not be estimated in advance, so, it decided to assume an initial forfeiture rate of zero and to revise this rate over the vesting period based on actual forfeiture.

The number of employees who left the company during 20x1 and 20x2 was five and three, respectively. Ignore taxation.

Required:

Show the journal entries for 20x1 and 20x2 to record the share option plan under IFRS 2.

P13.7 Equity-settled share-based compensation plan

On 2 January 20x1, Alcato Company introduced an executive share option plan for its top ten executives. Under the plan, each executive was granted 100,000 share options that gave them the right to subscribe to one ordinary share for each share option. The exercise price was $3, which was also the market price at the date of the grant. The exercise price was to be reduced by the percentage increase in net earnings from 31 December 20x0 to 31 December 20x3. The fair value of each share option (estimated at $1.50 at grant date) is estimated to increase by 1% for every 1% decrease in the exercise price. The holder of the options must remain in the employ of Alcato Company through the earliest exercise date, which was 31 December 20x3. The options would expire five years after the grant date.

page 1141

Alcato Company did not expect any of the ten executives to leave the company during the vesting period. None of the executives left the company. All of them exercised their options on 1 January 20x4 when the price of Alcato's share was $5. Ignore taxation.

Required:

1. Calculate the remuneration expense for each year assuming that the expected increase in net earnings over the three-year period was 25% at the end of 20x1 and 30% at the end of 20x2. The actual increase in net earnings over the three-year period at 31 December 20x3 was 33%.
2. Prepare all the journal entries relating to the share options.

P13.8 Share appreciation rights

On 1 January 20x1, ACE Corporation introduced a share appreciation rights (SARs) plan for 20 selected senior managers. Under the plan, each manager was granted 10,000 share appreciation rights, which vested on 31 December 20x3. The managers must remain in ACE Corporation's employment during the vesting period. The SARs were exercisable from 1 January 20x4 to 31 December 20x5. At exercise date, if the share price of ACE Corporation had appreciated, each grantee would receive cash equal to the amount of increase in the share price multiplied by 10,000 rights. The management of ACE Corporation estimated the forfeiture rate at 5%. This estimated forfeiture rate was maintained throughout the vesting period. The following information is available on the fair value and intrinsic value of the SARs:

Date	Estimated fair value	Intrinsic value
1 January 20x1	$3.00	
31 December 20x1	4.00	$3.20
31 December 20x2	3.50	3.10
31 December 20x3	4.50	4.00
31 December 20x4	4.20	3.90
31 December 20x5	4.30	4.30

Two managers left the company in 20x3. Ten managers exercised the SARs at 31 December 20x4 and the remaining managers exercised the SARs at 31 December 20x5. The tax rate is 20%.

Required:

1. Calculate the remuneration expense for the years 20x1 to 20x5.
2. Prepare journal entries relating to the share appreciation rights plan for the period 20x1 to 20x5.

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[1] Financial Accounting Standards Board, 1995. *Statement of Financial Accounting Standard 123, Accounting for Stock-based Compensation*, FASB, Norwalk, CT.

[2] International Accounting Standards Board, 2004. *International Financial Reporting Standard 2, Share-based Payment*, IASC Foundation, London, United Kingdom.

[3] IFRS 2 paragraph 2.

[4] However, if equity instruments are issued for the purchase of goods (such as inventory), the debit entry will be to the asset (inventory) account and expensed only when the inventory is sold.

[5] Vesting period is the period from the date the options are granted ("the grant date") to the date when pre-requisite conditions have been satisfied by the counterparty.

[6] Amendments to IFRS 2, Appendix A.

[7] The ability to reliably estimate the fair value of goods and services rendered by outside parties is a rebuttable assumption. If the entity is able to rebut this assumption, the value of goods or services received is estimated based on the fair value of equity instruments granted to the supplier.

[8] IFRS 2 considers this scenario rare. The intrinsic value is the difference between the fair value of the underlying share at measurement date and the exercise price of the option. The time value is excluded. The intrinsic value is remeasured at each subsequent reporting date and at the date of final settlement of the equity instruments. Changes in the intrinsic value are taken to profit or loss.

[9] This method is known as the fair value method as opposed to the intrinsic value method, which assigns a value of a share option only when the option has intrinsic value, that is, the market price of the underlying is greater than the exercise price. IFRS 2 allows the intrinsic value method in the rare situation when the fair values of share options cannot be reasonably determined.

[10] The principles applied are from IFRS 2 paragraph 15b and as exemplified in *Guidance on Implementing IFRS 2*, Example 3.

[11] An option is in-the-money for the counterparty if the market price is greater than the exercise price. Conversely, the option is out-of-the-money when the market price falls below the exercise price.

[12] A decrease or increase in the exercise price is effectively a repricing of the equity instrument, for example, a reduction in the exercise price of a share option increases the fair value of the option. IFRS 2 paragraph 27 requires an entity that has implemented a share option plan to recognize the effects of modifications that increase the total fair value of the equity instruments. However, if the modification to the terms and conditions of the share option plan reduces the total fair value of the share-based arrangement, the modification should be ignored as if it had not been made. The entity continues to recognize the amount of remuneration expense based on the fair value of the arrangement at the grant date (IFRS 2 App B:B44).

[13] Paragraph 28A of IFRS 2 requires an entity to treat its or the counterparty's (which in this case may be the employee) failure to meet a non-vesting condition during the vesting period as a cancellation if the entity of the counterparty can choose whether to meet a non-vesting condition.

[14] The principles applied are from IFRS 2 paragraph 30 and as exemplified in *Guidance on Implementing IFRS 2*, Example 12.

[15] IFRS 2 *Basis of Conclusions*, BC 268.

[16] The choice is normally made on the vesting date.

[17] The terms "equity component" and "equity alternative" have different meanings, as shown in the relationships.

[18] In the case of a share-based transaction where the counterparty is a non-employee, the fair value of the equity component is the difference between the fair value of the compound financial instrument and the fair value of the debt component.

[19] Likewise, if the options are out-of-the-money, the effects under both alternatives are the same. The cash payment is zero under the cash alternative and the employee would also not exercise his options.

[20] The illustration applies the principles of IFRS 2 paragraphs 38 to 40 and as exemplified in *Guidance on Implementing IFRS 2*, Example 13.

[21] Black, F. and M. Scholes, 1973. "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy*, May–June, pp. 637–659.

[22] Two seminal studies are (1) Cox, J., S. Ross and M. Rubinstein, 1979. "Option Pricing: A Simplified Approach," *Journal of Financial Economics*, September 1979, pp. 229–263; and (2) Rendleman, R., Jr. and B. Barter, 1979. "Two-state Option Pricing," *Journal of Finance*, December, pp. 1093–1110.

CHAPTER

14

Common Control

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand what type of business combinations qualifies under the common control exemption;
- **LO2** Understand how to account for business combinations under common control;
- **LO3** Appreciate the conceptual underpinnings of the predecessor method of accounting;
- **LO4** Understand how to account for acquisitions of non-controlling interests in common control transactions;
- **LO5** Understand how to account for business combinations under common control in the separate financial statements; and
- **LO6** Understand the nature and accounting for group reorganizations in both consolidated and separate financial statements.

INTRODUCTION

Paragraph 2(c) of IFRS 3 excludes from its scope, business combinations between entities that are under common control. Paragraphs B1 to B4 of IFRS 3 further provide application guidance on the definition of and what constitutes business combinations under common control. Apart from these limited references, there are no IFRS® Standards that govern the accounting for such transactions. Consequently, when entities enter into business combination under common control, they are required to develop their own accounting policies under paragraph 10 of IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors.*

As discussed in Chapter 3, in this type of business combination, the combining entities are controlled by the same party, or parties, before and after the business combination and that control is not transitory (IFRS 3 App B:B1). These transactions can be effected in numerous ways, and they can include exchange of equity interests or transfers of net assets, which constitute business between entities under common control. Additionally, situations in which an entity combines with the business of another entity under common control would qualify as business combination under common control as well, provided the combining entities are controlled by the same party, or parties, before and after the business combination, and that control is not transitory.

As it can be inferred from the definition itself, there are essentially three parties in a business combination under common control, the ultimate parent company[1] (which controls the combining entities) and the combining entities namely the acquirer and acquiree. As the combining entities in these transactions are still controlled by the same party (that is, the ultimate parent company), or parties, before and after the business combination, there is no change in control at the ultimate parent company's level. Consequently, the business combination of the entities under the control of ultimate parent company will have no impact on the ultimate parent company's consolidated financial statements. Therefore, regardless of what adjustments are put through in both the consolidated and separate financial statements of the combining entities, these adjustments are reversed when preparing the consolidated financial statements of the ultimate parent company. However, this transaction may result in a change in control from the perspective of either of the combining entities, that is, the acquirer or acquiree, in both its consolidated and separate financial statements.

The focus of this chapter will be on the accounting for business combination under common control from the perspective of the acquirer in both its consolidated and separate financial statements. The accounting implications for the company that sells the business to the acquirer will also be discussed. Additionally, a separate section is devoted to analyzing the common forms of corporate reorganization, which is a type of common control transaction, and understanding its accounting implications. Such reorganization may or may not meet the definition of a business combination.

COMMON CONTROL EXEMPTION UNDER IFRS 3

Paragraph B1 of IFRS 3 defines a business combination involving entities or businesses under common control as "a business combination in which all of the combining entities or businesses are ultimately controlled by the same party or parties both before and after the business combination, and that control is not transitory."

Distilling this definition, there are essentially three elements namely:

1. A business combination of combining entities or businesses;
2. Common control by the same party or parties before and after the transaction; and
3. Control is not transitory.

Nature of Acquisition – Business versus Assets

First and foremost, in order to qualify as a business combination under common control, it is critical to determine the nature of the acquisition, that is, whether the combining entities are or the subject matter of the transfer between the entities under common control constitutes a business. This assessment will determine how the transaction will be accounted for. If the combining entities are, or the subject matter of the transfer is, a business, and the other criteria discussed below is met, it meets the definition of a business combination under common control, which is accounted for using either the predecessor method of accounting or the acquisition method under IFRS 3. The methods of accounting will be explored in greater details below.

Conversely, if the subject matter of the transfer is a group of assets or net assets that does not meet the definition of a business, the transaction is accounted for as an acquisition of assets under paragraph 2(b) of IFRS 3. Acquisition of assets is discussed in Chapter 2.

Common Control by Same Party or Parties

The second element of the definition requires the combining entities or businesses to be controlled ultimately by the same party or parties both before and after the business combination.

Control is defined in IFRS 10 *Consolidated Financial Statements.* An investor controls an investee when the investor is exposed, or has rights, to variable returns from its involvement with the investee, and has the ability to affect those returns through its power over its investees. Control is discussed in greater detail in Chapter 2.

It is not necessary for the party (or parties) that is (are) controlling the combining entities or businesses to be a corporate entity. Paragraph B3 of IFRS 3 clarifies that the combining entities or business may be controlled by an individual or a group of individuals acting together under a contractual arrangement. As individuals or group of individuals, they may not be subject to the financial reporting requirements of IFRS Standards. Hence, it is not necessary for combining entities to be included as part of the same consolidated financial statements at the ultimate control level for a business combination to be regarded as one involving entities under common control.

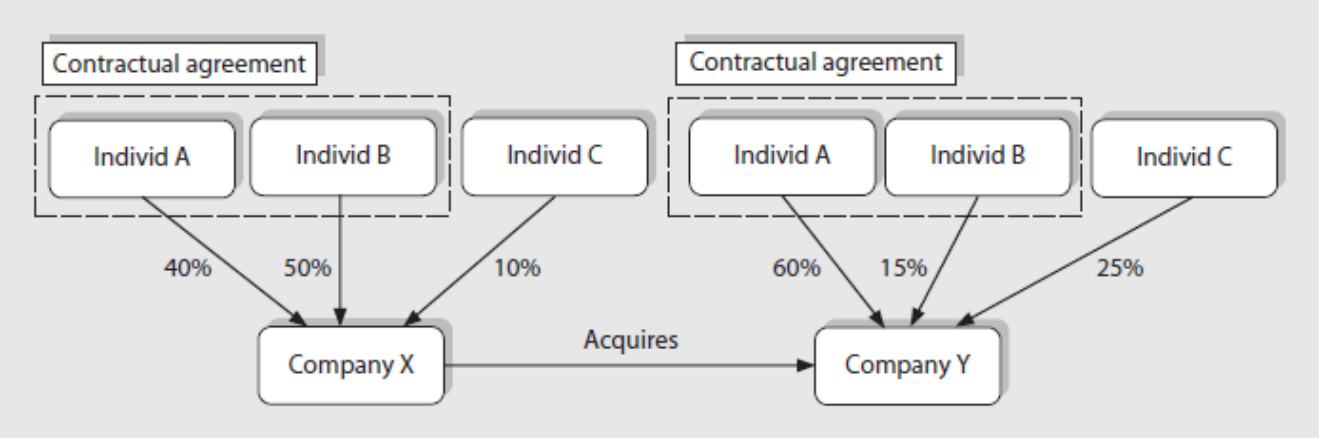
The IFRS Standard clarifies that when a group of individuals is regarded as controlling the combining entities, contractual arrangements must be established for them to act collectively to govern the financial and operating

policies of each of the combining entities so as to obtain benefits from their activities, and that ultimate collective power is not transitory. The reason why a contractual arrangement is required is because the individuals in the group could vote independently and differently from each other in management and shareholders meetings in the absence of a contractual agreement. Hence, the contractual agreement is critical to ensure that everyone act collectively such that there is common control by the same group.

While IFRS 3 does not prescribe the form in which the contractual agreements should be in, the application guidance under paragraph B2 of IFRS 11 *Joint Arrangements* stipulates that an enforceable contractual arrangement is often, but not always, in writing, and it usually takes the form of a contract or documented discussions between the parties. While the syntax of the application guidance suggests that it may be possible for the contractual agreement to not assume the written form, it is a question of fact ultimately whether there is collective control. Generally, in the absence of contractual agreements, the group of individuals collectively is deemed not to have control over the combining entities. A possible exception to this would be the case where the group of individuals comprises close family members. However, the facts and circumstances should be reviewed carefully to determine if the close family members are in fact acting collectively.

page 1146

ILLUSTRATION 14.1 Common control by same party or parties



Companies X and Y have three individual shareholders, A, B, and C, none of whom are related parties. Both companies X and Y meet the definition of business under IFRS 3. There is a written shareholders agreement between shareholders A and B to act collectively as shareholders in Companies X and Y. During the year, Company X acquires 100% of Company Y.

Analysis

In this scenario, shareholders A and B hold 90% and 75% in Companies X and Y, respectively. Because they have a written contractual agreement to act collectively as shareholders in both companies, they collectively control Company X and Company Y. As both companies meet the definition of a business under IFRS 3 and assuming control is not transitory, the acquisition of Company Y by Company X would meet the definition of a business combination under common control.

In some situations, the group of individuals that holds the shareholding interests in the combining entities could be close family members. In such cases, it is highly unlikely that there is a contractual agreement among them for the purpose of demonstrating control. For the purposes of assessing whether common control exists between these family members, an assessment of the individual facts and circumstances is required. For instance, where one of the family members who holds an interest in the combining entities is an infant child, in the absence of any other arrangements to the contrary, the interests held by the infant child would be attributed to the parent(s) as the parent(s) would effectively be controlling the vote on behalf of the dependent child.

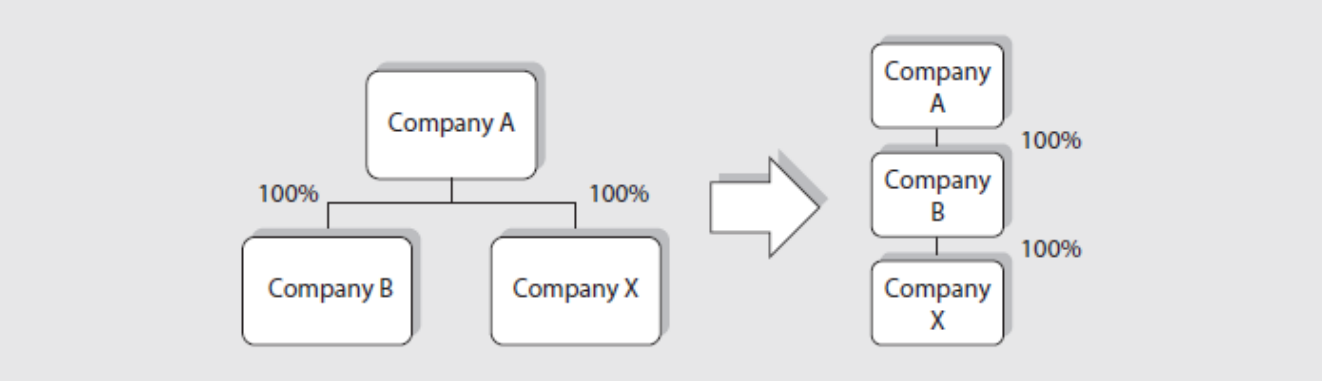
Transitory Control

The third element of the definition requires the control of the combining entities by the same parties or parties before and after the business combination not to be transitory. IFRS 3 does not define what constitutes transitory. This condition was added as an anti-avoidance provision to counteract the possibility of transactions being structured as grooming transactions to avoid acquisition accounting by arranging for the combining entities to be under common control for a brief period immediately before the combination. Hence, in situations where the transaction involving entities under common control is a mere component within a wider series of transactions, it is necessary to consider the entire series of transactions including the business rationale in order to assess whether control is transitory.

page 1147

ILLUSTRATION 14.2 Transitory control

Company A has a wholly owned subsidiary, Company B. Company B's principal activities is that of shipbuilding and maintenance. During the year, Company A acquires 100% of Company X, which is Company B's direct competitor. Shortly thereafter, Company A combines both the activities of Company B and X by transferring its shares in Company X to Company B.



Analysis

The combination of Company B and Company X is not a business combination under common control. Although Company B and Company X are wholly owned by Company A, the control is transitory as Company B came under the control of Company A shortly before the transaction to combine Company B and Company X. In this case, Company B has acquired Company X and acquisition accounting should be applied in Company's B's consolidated financial statements. Company B cannot avoid acquisition accounting in its books merely by arranging Company X to be under the common control of Company A before the combination with itself.

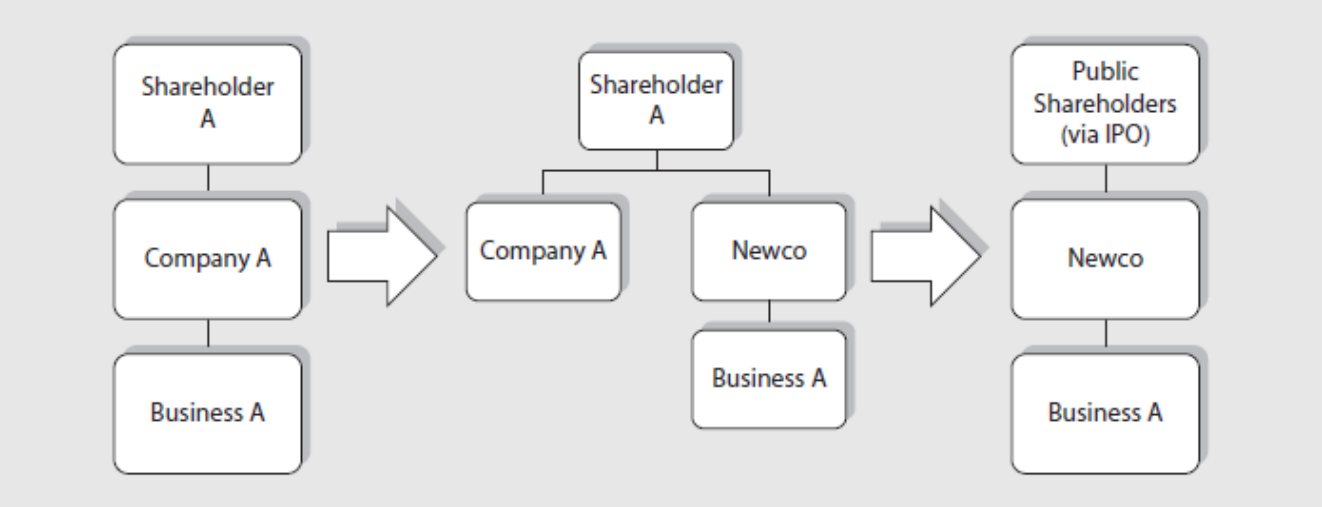
Note: From the perspective of the consolidated financial statements of Company A, there is no change in the economic substance arising from the combination of Company B and Company X.

The definition requires the control of the combining entities by the same parties or parties at both before and after the business combination to be not transitory. Inevitably, a question arises whether an intention to dispose a restructured group after the combination would suggest that control after the combination is transitory post-combination, and accordingly, the scope exemption under business combination under common control in IFRS 3 does not apply.

page 1148

In such cases, the intention to spin-off or dispose the restructured group post combination should not in itself result in the control being deemed as transitory. The IFRIC® has specifically considered a scenario (see Figure 14.1) in which the parent (Company A), which is wholly-owned by Shareholder A, transfers a business (Business A) to a newly set-up entity (Newco). Newco is also wholly owned by Shareholder A. Apart from seeking clarification on the accounting at the time of the transfer of the business to Newco by Company A, the submission also requested IFRIC to consider whether an initial public offering (IPO) of Newco, which might occur after the transfer of Business A to Newco, is considered relevant in analyzing the transaction under IFRS 3.

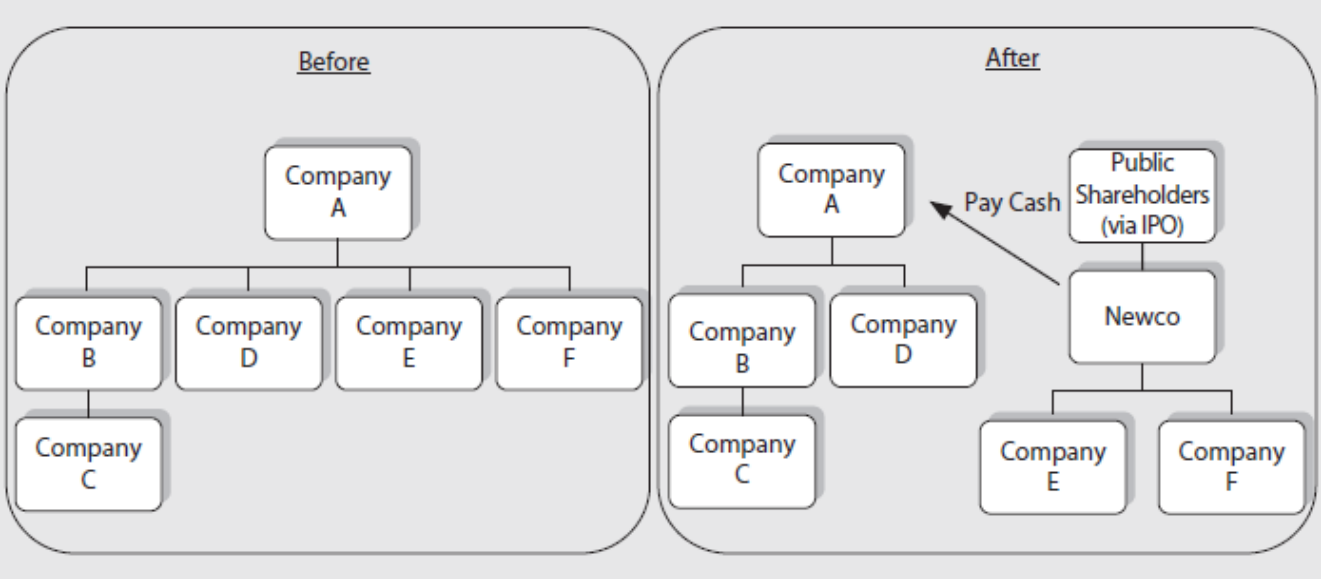
FIGURE 14.1 Transfer of business to Newco for IPO



In this case, the IFRIC clarified that the fact pattern reflects a business combination under common control because it is the same party (Shareholder A) that controls the combining entities both before and after the transfer of Business A. Further, the IFRIC noted that the possibility of an IPO occurring after the transfer of Business A to Newco should not impact the classification of this transfer as a business combination under common control (IFRIC Update July 2011). Contrast this fact pattern to the following scenario in Illustration 14.3, which is also a case that the IFRIC has considered.

ILLUSTRATION 14.3 Business combination under common control?

An existing group plans to spin off two of its subsidiaries using a new entity (Newco). Newco will acquire these subsidiaries for cash from the parent company (Company A) only on condition of the occurrence of Newco's IPO. The cash paid by Newco to Company A to acquire the subsidiaries is raised through the IPO. After the IPO occurs, Company A loses control of Newco. If the IPO does not take place, Newco will not acquire the subsidiaries.



Analysis

The transaction is not a business combination under common control because after the IPO, Company A does not control Newco and the subsidiaries, Company E and Company F. Accordingly, the combining entities are not ultimately controlled by the same party, or parties, both before and after the business combination.

NON-CONTROLLING INTERESTS IN A BUSINESS COMBINATION OF ENTITIES UNDER COMMON CONTROL

Combining entities may not be wholly owned by the ultimate parent company. Paragraph B4 of IFRS 3 explains that the extent of non-controlling interests in each of the combining entities before and after the business combination is not relevant to determining whether the combination involves entities under common control. Similarly, in a situation where one of the combining entities is a subsidiary that was excluded from the consolidated financial statements on grounds of immateriality, that in itself is not relevant to determining whether the transaction is a combination involves entities under common control. What is ultimately relevant is that these combining entities remain under common control by the same parties or parties and that control is not transitory.

ACCOUNTING FOR BUSINESS COMBINATIONS UNDER COMMON CONTROL

IFRS 3 does not provide guidance on the accounting treatment for business combination under common control. In the absence of the guidance, paragraph 10 of IAS 8 requires management to use its judgement to develop and apply an accounting policy that results in information that is relevant to the economic decision-making needs of users and is also reliable. The entity shall apply the accounting policies consistently for similar transactions, other events, and conditions.

page 1150

As discussed in the introduction, the ultimate parent company and the combining entities collectively form a single economic entity. From the perspective of the ultimate parent company, to the extent that there is no change to

the shareholding interests, a business combination of the entities it controls has no impact on its consolidated financial statements as there is no change in substance from the ultimate parent company's perspective.

However, that business combination may result in a change in control from the perspective of either of the combining entities, that is, the acquirer or acquiree, in both consolidated and separate financial statements if the transaction has commercial substance from the perspective of the combining entities. In this section, we discuss the accounting treatment for these transactions in the acquirer's consolidated financial statements.

Generally, in practice, there are two acceptable methods of accounting for business combination under common control. They are, namely, the predecessor method of accounting[2] or the acquisition method under IFRS 3.

The conceptual underpinning of the predecessor method of accounting stems from the principle that the combination of the entities under common control has no commercial substance from the perspective of the ultimate parent company. Transactions, which give rise to business combinations under common control usually arise from the design of the ultimate parent company with the intent to benefit the group as a whole as opposed to benefitting the entities that are parties to the transaction. A business combination under common control has no impact on the ultimate parent company. Both the combining entities, before and after the business combination, are controlled by the same ultimate parent company, and any investment (or business) transferred or acquired takes place within the same group as only the location of the entities or business within the group has changed. Accordingly, the transaction effected has limited or no influence on the economic situation of the ultimate parent company. Hence, the accounting treatment adopted by the acquirer in the combination in its consolidated financial statements should appropriately reflect this substance. This is achieved via the predecessor method of accounting.

The other school of thought, which supports the acquisition method of accounting under IFRS 3 is predicated on the view that the combining entities are separate reporting entities in their own right. This is notwithstanding that they are controlled by the ultimate parent company. Therefore, the business combination from the perspective of the standalone entities could have a valid business purpose and accordingly possess economic substance. The acquirer could benefit from the synergies brought about by the transaction, which manifest itself in the form of significantly higher cash flows as compared to the aggregate of the cash flows generated by the respective entities on a standalone basis. Therefore, the transaction should be viewed as an arm's length transaction and the consolidated financial statements of the acquirer should reflect this economic substance by accounting for the transaction as a significant event upon which the acquisition method under IFRS 3 is applied. The acquisition method of accounting may result in useful information also in cases when ownership interests have changed as a result of the business combination. An example is when new owners are brought in or when the interests held by non-controlling interest change.

While both methods of accounting are acceptable, from a conceptual viewpoint, we believe that the acquisition method of accounting should only be adopted when there is commercial substance to the transaction from the perspective of the acquirer.

APPLICATION OF PREDECESSOR METHOD OF ACCOUNTING

Generally, the principles of predecessor method of accounting entail the following:

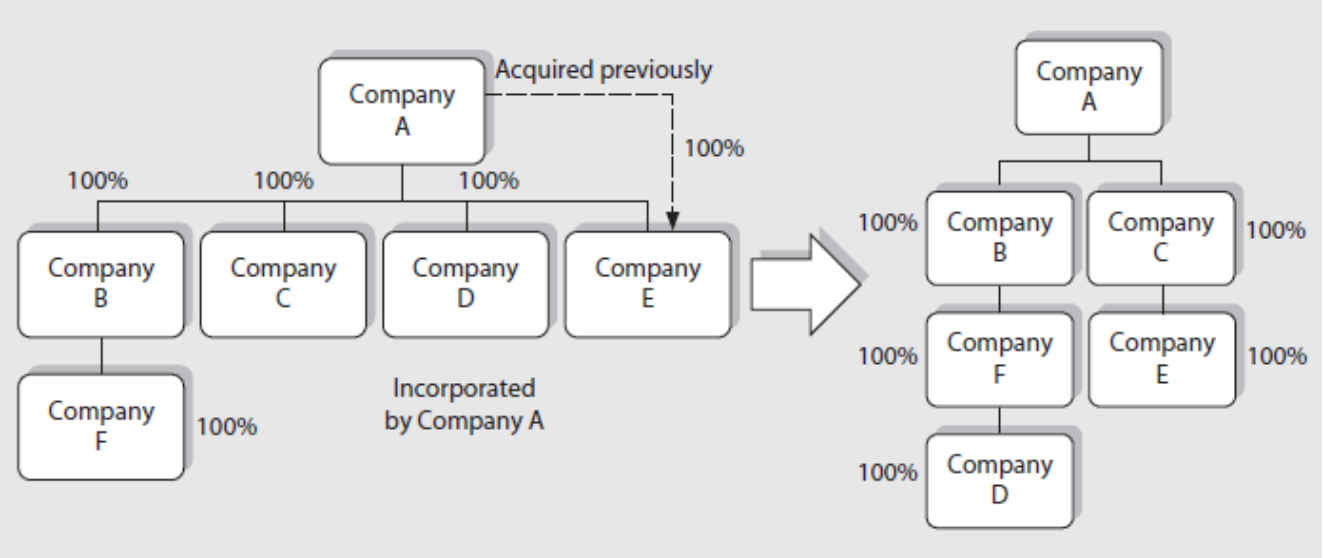
- Assets and liabilities of the combining entities are reflected at their predecessor carrying values at the date of business combination, that is, there is no fair value uplift of the existing assets and liabilities. Similarly, no adjustments are made to recognize any new assets or liabilities (for example, intangible assets or contingent liabilities) as in the case of acquisition accounting under IFRS 3.

  Generally, the carrying values of the assets and liabilities of the acquiree used for the purpose of predecessor method of accounting should be based on the carrying values that are reported in the consolidated financial statements of the ultimate parent company that has common control over the combining entities.

These carrying values will include the goodwill and fair value adjustments that relate to the acquiree, which is recorded in the ultimate parent's consolidated financial statements.

In the case when the acquiree was under common control by the ultimate parent company since it was incorporated, the carrying values used for predecessor method of accounting should be the same as that recorded in the acquiree's standalone financial statements. Where the acquiree was acquired by the ultimate parent company previously, the values reflected in the consolidated financial statements of the ultimate parent company including goodwill and fair value adjustments should be used. These values may differ from those recorded in the standalone financial statements of the acquiree as the assets and liabilities would have been restated to their fair values at the date of acquisition when the acquiree was previously acquired by the ultimate parent company. In the event where no financial statements are prepared at the ultimate controlling party level (for instance, due to the controlling party being an individual or group of individuals), the carrying values for the acquiree will be the amounts recognized in the consolidated financial statements at the next highest level for which there is common control. Illustration 14.4 demonstrates this.

ILLUSTRATION 14.4 Which carrying values to use?



All companies within the group meet the definition of business under IFRS 3. Company D was incorporated by Company A.

Company A has acquired 100% interests in Company E three years ago. At the date of acquisition, goodwill and separate intangible assets relating to customer relationships were recognized in the consolidated financial statements of Company A. The customer relationships were previously estimated to have a useful life of five years at the date of acquisition by Company A. As at the date of the common control business combination, the customer relationships have remaining useful life of two years. There was no other fair value uplift of the assets and liabilities as part of the acquisition.

During the year, Company D, which was incorporated by Company A, was transferred to Company F, and Company E was transferred to Company C as part of a group reorganization. Assume that the companies within the group do not apply the exception to prepare consolidated financial statements under paragraph 4 of IFRS 10.

Analysis

Assuming that the predecessor method of accounting is adopted, the carrying values of Company D to be used for preparing the consolidated financial statements of Company F should be the carrying values that were reflected in Company A's consolidated financial statements. In this case, as Company D was incorporated by Company A and was under the control of Company A since inception, the values used for the predecessor accounting should be the same values reflected in the standalone financial statements of Company D itself.

Similarly, the carrying values of Company E to be used in the predecessor method of accounting in the consolidated financial statements of Company C are the carrying values reflected in the consolidated financial statements of Company A. The values would include the goodwill and remaining carrying value of the separate intangible assets relating to customer relationships at the date of the combination. Note that in this scenario, the carrying amounts used will not be the same as that reflected in the standalone financial statements of Company E itself as goodwill and the separate intangibles are only recorded in the consolidated financial statements of Company A when the acquisition method was applied previously. In other words, the net assets used in predecessor method of accounting for Company E will be larger than the net assets reflected in the standalone financial statements of Company E itself.

- No additional goodwill is recognized as a result of predecessor method of accounting. The only goodwill that can be recognized in the combination relates to the existing goodwill recorded by the combining parties. Such goodwill could arise from past acquisitions undertaken by the combining entities or if the goodwill is recorded by the ultimate parent company in relation to the acquiree in its consolidated financial statements.
- For the purpose of the presentation of the statement of comprehensive income, there is a choice in the absence of an accounting standard whether the full year results of the combining entities are presented for both current and comparative period regardless of when the business combination took place or to incorporate the results from the date the acquirer obtains control of the acquiree. Please refer to the section below under financial statement presentation for the discussion on presentation options. The choice of presentation will have an impact on how the difference between the consideration paid for the transaction and either the share capital or net assets is computed. This is discussed in the next point.
- If the full year results of the combining entities are presented for both current and comparative period, the difference between the consideration paid for the transaction by the acquirer and share capital of the acquiree at the date of acquisition is recognized within equity. This difference is recorded in a separate capital reserve[3] within equity. In circumstances where there are additional assets (such as goodwill and fair value adjustments) or liabilities recognized in the ultimate parent company's consolidated financial statements, such items will be recognized in the acquirer's consolidated financial statements. Accordingly, the difference calculated above will be further reduced by the aggregate of the carrying values of these additional net assets that are not recorded in the standalone financial statements of the acquiree. The rationale is because the acquirer is in substance receiving additional assets (that is, the goodwill and fair value adjustments) other than those recorded in the standalone financial statements of the acquiree in exchange for the consideration paid and accordingly, the difference, which in essence is the "goodwill," should be reduced by the amount of the additional assets received. Only the share capital is included in the calculation as the other reserves (for example, retained earnings, foreign currency translation reserve, fair value reserves) of the acquiree are "pooled" (that is, added) together with that of the acquirer in both current and comparative periods. The rationale for this is predicated on the logic that the ultimate parent company is able to exercise discretion in reshuffling the positions of the entities or businesses as it is the one that controls the combining entities before and after the transaction. Accordingly, any restructuring will not have any economic substance from the perspective of the ultimate parent company. Therefore, all the reserves are pooled together as the combining entities were under common control of the ultimate parent company in both current and comparative periods.

page 1153

- Conversely, if the results of the acquiree are included only from the date the acquirer obtains control, the difference between the consideration paid for the transaction by the acquirer and share capital as well as reserves at the date of acquisition (that is, effectively the carrying value of the net assets of the acquiree) is recognized within equity. The difference similarly will be reduced by any goodwill and fair value adjustments

pertaining to the acquiree recorded in the financial statements of the ultimate parent company. In this case, the reserves, in addition to share capital, are included in the calculation as only the post-acquisition reserves of the acquiree will be included in the consolidated financial statements of the acquirer after control is obtained.

- For post-acquisition subsequent accounting, apart from the application of the principles above, the normal rules of consolidation will apply. For instance, intercompany balances, transactions, and unrealized profits are eliminated.

Illustration 14.5 demonstrates the application of the predecessor method of accounting.

ILLUSTRATION 14.5 Application of predecessor method of accounting

Using the group structure in Illustration 14.4, the accounting for the acquisition of Company E in the consolidated financial statements of Company C under the predecessor method of accounting is demonstrated.

Assume that Company C paid cash consideration amounting to $140,000 to Company A in exchange for 100% interests held by Company A in the paid up capital of Company E on 1 January 20x5 (date of transaction under common control). Company E was previously acquired by Company A three years ago and at the date of acquisition, goodwill arising from acquisition amounted to $20,000. Intangible asset relating to customer relationship was also recognized in the consolidated financial statements of Company A. There was no other fair value uplift of the assets and liabilities as part of the acquisition. As at 1 January 20x5, the carrying value of the unamortized intangible asset amounted to $6,000 and the customer relationship has remaining useful life of two years. Goodwill is not impaired as at 1 January and 31 December 20x5. The effects of taxes are ignored for this illustration.

The financial year end of all the companies is 31 December.

Analysis

Computation of the excess of the consideration paid over the share capital and other assets pertaining to Company E that is recorded in the consolidated financial statements of Company A.

	$'000
Consideration paid by Company C	140
Less:	
Share capital of Company E	(20)
Balance of goodwill relating to Company E in the consolidated financial statements of Company A	(20)
Balance of unamortized intangible asset relating to customer relationship in the consolidated financial statements of A	(6)
Excess of consideration paid	94

Preparation of accounting entries

In the separate financial statements of Company C

Dr Investment in Company E	140,000	
Cr Cash		140,000

Being cash paid to Company A for investment in Company E

In the consolidated financial statements of Company C

Dr Share capital	20,000	
Dr Goodwill	20,000	
Dr Intangible asset – customer relationship	6,000	
Dr Merger reserve	94,000	
Cr Investment in Company E		140,000

Being elimination entry of investment account and share capital for predecessor method of accounting

Dr Amortization of intangible assets	3,000	
Cr Allowance for amortization of intangible assets		3,000

Being amortization of customer relationship

Explanatory notes:

1. As the carrying values of the assets and liabilities for Company E that will be included in the consolidation spreadsheet are the pre-transaction numbers extracted from the standalone financial statements of Company E, it is necessary to include the carrying values of goodwill and intangible asset at the date of transaction as part of the consolidation elimination to reinstate those balances in the consolidated financial statements of Company C.
2. The computation below assumes that Company C applies the option to restate its financial statements for both current and comparative period as if the transaction had occurred prior to the date of combination. For illustration purposes, only the consolidation spreadsheet for the current financial year is shown.

As at 31 December 20x5, the financial position of the combining entities stands at:

	Company C $'000	Company E – Pre-transaction $'000	Elimination Entries $'000	Consolidated $'000
Fixed assets	120	80		200
Goodwill	–	–	20	20
Intangible assets	–	–	3	3
Investment in Company E	140	–	(140)	–
Other assets	160	50		210
Other liabilities	(50)	(30)		(80)
Net assets	370	100		353
Share capital	100	20	(20)	100
Retained earnings#	210	60	(3)	267
Foreign currency translation reserve	40	15		55
Fair value reserve	20	5		25
Merger reserve	–	–	(94)	(94)
Total equity	370	100		353

Includes the full year results from 1 January 20x5 to 31 December 20x5

APPLICATION OF ACQUISITION METHOD UNDER IFRS 3

The application of acquisition method under IFRS 3 has been discussed in Chapters 2–4. In a nutshell, the acquisition method entails the following:

- Identification of the acquirer and the date of acquisition;
- Determining the amount of consideration transferred;
- Recognition and measurement of identifiable assets acquired and liabilities assumed including non-controlling interests; and
- Recognition of goodwill or gain on bargain purchase.

ACQUISITION OF NON-CONTROLLING INTERESTS UNDER COMMON CONTROL

Combining entities in business combination under common control may not be wholly owned by the ultimate parent company, that is, non-controlling interests may be present. However, as explained in paragraph B4 of IFRS 3, the extent of non-controlling interests in each of the combining entities before and after the business combination is not relevant to determine whether the combination involves entities under common control. The crucial factor is whether these combining entities remain under common control by the same party or parties before and after the transaction and that control is not transitory.

In cases where the combining entities are partially owned, it is common for the interests held by the non-controlling interests to be acquired simultaneously with the common control transaction. When this happens, the entity with the non-controlling interests becomes a wholly-owned subsidiary before it is combined with other entity or entities under common control. There are numerous reasons for doing this. For instance, the acquirer may achieve more efficiencies in the operations of the acquiree after the acquisition of the non-controlling interests. The question that arises is how the acquisition of non-controlling interests should be accounted for and how that transaction would interact with the accounting for the common control transaction.

page 1156

In such scenarios, the transactions should be seen as separate transactions and accordingly, they should be accounted for separately, that is, the entity will have to account for (1) the acquisition of non-controlling interests and (2) business combination under common control separately.

As the combining entities are already under common control, the acquisition of the non-controlling interests will have to be accounted as an equity transaction in accordance with paragraph 23 of IFRS 10. The manner by which the non-controlling interests are acquired will determine which entity has to account for the transaction. The ultimate parent company may acquire the interests held by the non-controlling interests before transferring all its equity interests held of the now wholly-owned subsidiary to the combining entities under the common control transaction. In this situation, the ultimate parent company will account for the acquisition of the non-controlling interests in its consolidated financial statements. The acquirer will only account for the common control transaction in its consolidated financial statements. Conversely, the acquirer in the combining entities may be the party acquiring the interests held by the non-controlling interests. In this scenario, the acquirer would have to account for both the acquisition of the non-controlling interests and the common control transaction in its consolidated financial statements.

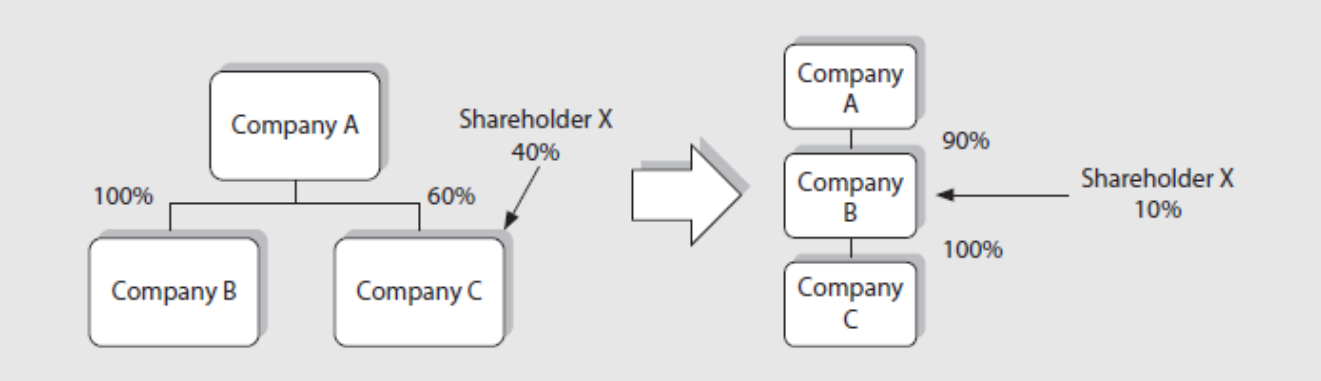
As non-controlling interests represent equity in a subsidiary that is not attributable directly or indirectly to a parent, the acquisition of non-controlling interests has to be accounted for at the date when the non-controlling interests are acquired. As such equity does not belong to the parent, it is therefore not appropriate to account for the transaction as if it took place earlier than date of acquisition of the non-controlling interests. Hence, the equity components and income attributable to the non-controlling interests prior to the acquisition should be presented separately as shown in Illustration 14.6 and not “pooled” together with those of the combining entities.

Accounting for non-controlling interests is in contrast to the accounting when the acquirer acquires the acquiree in a business combination under common control. In this scenario, the consolidated financial statements of the acquirer can be restated to reflect as if the acquisition under common control had occurred on a date earlier than date of combination. The rationale behind this is couched on the logic that since the ultimate parent company controls the combining business before and after the transaction, the former can exercise discretion in reshuffling the positions of the entities or business within the group at any point in time and any restructuring will not have economic substance from the perspective of the ultimate parent company. Hence, presenting the financial statements as if the combination had taken place earlier is not inappropriate, since the combining entities were under the common control of the ultimate parent company throughout the entire period.

The above principle will apply regardless of whether the acquirer chooses whichever method of presentation of its financial statements, as discussed in the following section.

ILLUSTRATION 14.6 Acquisition of NCI in a common control transaction

Company A incorporated and owns 100% of Company B with share capital of $300,000 and 60% of Company C. The remaining 40% of Company C are held by an unrelated party, Shareholder X. On 1 June 20x5, Company B obtains 100% control of Company C by issuing its shares to (1) acquire Company A's 60% interest in Company C and (2) acquire Shareholder X's 40% interest in Company C as set out below. The amount of shares issued is based on Company B's interest in the fair value of Company C at the date of transfer. As a result of the issuance of shares by Company B, Company A's interest in Company B is diluted to 90%. All companies within the group have December year ends and they meet the definition of a business.



The following information is also relevant for the illustration:

	Carrying Values of Net Assets $'000	Fair Value $'000
Subsidiary B	700	1,000
Subsidiary C	800	1,000

Before restructuring

	Company A's interest $'000	Shareholder X's interest $'000

Carrying value of net assets of Subsidiary B	700	-
Carrying value of net assets of Subsidiary C	480	320

The carrying value of net assets of Company C is represented by share capital and retained earnings of $200,000 and $600,000, respectively.

Preliminary workings:

Company A's separate financial statements before the common control transaction:		
Investment in Company B	$ 300,000	
Investment in Company C	$ 120,000	60% of share capital of $200,000
In exchange for shares in Company C, shares issued by Company B to:		
Company A	$ 600,000	60%
Shareholder X	$400,000	40%
Fair value of Company C	$1,000,000	
After the share issue by Company B, ownership interests in Company B held by:		
Company A	90%	
Shareholder X	10%	
	100%	

Preliminary workings:

Company A's separate financial statements after the common control transaction:		
Investment in Company B	$ 900,000	[300,000+600,000]
Investment in Company C	$0	
Company B's separate financial statements after the common control transaction:		
Share capital	$1,300,000	[300,000+1,000,000]
Investment in Company C	$1,000,000	

Analysis

The transfer of investment in Company C of 60% by Company A to Company B qualifies as a business combination under common control. The acquisition of 40% interest held by Shareholder X (non-controlling interests) by Company B will be accounted for as a separate transaction to the common control transaction at the date of acquisition, that is, 1 June 20x5.

Accounting in Company B's consolidated financial statements

Assume that Company B restates its financial statements for the period before the common control transaction as if the transaction had occurred prior to 1 June 20x5. In this case, Company B will attribute income for the period from 1 January 20x5 to 31 May 20x5 and the net assets at 31 May 20x5 to the non-controlling interests and present it separately within equity in the consolidated financial statements up till the date of transaction, 1 June 20x5. The accounting for the changes in ownership interests from Company B's perspective arising from the acquisition of the non-controlling interests of 40% from Shareholder X will be accounted for as an equity transaction as at 1 June 20x5.

Specifically, Company B will record the following entries in its consolidated financial statements on 1 June 20x5.

For common control transaction

Dr Share capital (Note 1)	200,000		
Dr Retained earnings (Note 1)	240,000		(40% × carrying value of $600,000)
Dr Merger reserve (Equity)	480,000		
Cr Investment in Company C (Note 2)		600,000	(60% × $1 million)
Cr Non-controlling interests		320,000	

Being elimination entry for common control transaction and allocation of net assets to NCI as at 1 June 20x5

For acquisition of non-controlling interests

Dr Non-controlling interests	320,000		
Dr Premium paid on acquisition of NCI (Equity)	80,000		
Cr Investment in Company C (Note 2)		400,000	(40% × $1 million)

Being entry to record the acquisition of the 40% non-controlling interests on 1 June 20x5

In the separate financial statements, Company B will record the following entries:

Dr Investment in Company C	1,000,000	
Cr Share capital		1,000,000

Being value of shares issued to Company A ($600,000) and Shareholder X ($400,000)

Explanatory notes:

1. Only 60% of the share capital is eliminated. The retained earnings (which represent 60% of Company C's retained earnings) are attributable to Company B and will be pooled together with the retained earnings of Company B. The remaining 40% of share capital and retained earnings is allocated to non-controlling interests.
2. In the separate financial statements of Company B, the investment in Company C is recorded at its fair value of $1 million as Company B has issued its shares to Company A based on this value.

Accounting in Company A's (parent company) consolidated financial statements

From Company A's perspective, the group has acquired 40% interests held by Shareholder X in Company C in exchange for the 10% interests in Company B. Hence, Company A's interests in Company B are diluted from 100% previously to 90%. In substance, there is an effective disposal of shareholding interests without loss of control by Company A. Hence, such transaction is accounted for in accordance with paragraph B96 of IFRS 10.

Specifically, paragraph B96 of IFRS 10 requires an entity to adjust the carrying amounts of the controlling and non-controlling interests to reflect the changes in their relative interests in the subsidiary when the proportion of the equity held by non-controlling interests changes. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is adjusted directly in equity and attributed to the owners of the parent.

For the purposes of computing the difference from the perspective of Company A, the accounting entries recorded for the acquisition of the non-controlling interests recorded in the consolidated financial statements of Company B are reversed before putting through the following entry in the consolidated financial statements of Company A.

Dr Non-controlling interests – subsidiary C	320,000	
Cr Non-controlling interests – subsidiary B		118,000 [10% × ($700,000 + 480,000)]
Cr Difference arising from dilution of interests without loss of control - Equity . . .		202,000

Being entries to adjust for relative changes in the interests held by NCI

Insofar as the acquisition of Company C by Company B is concerned, as both companies were previously under the control of Company A, the business combination transaction between Company B and Company C has no substance from the perspective of Company A. Accordingly, the accounting entries recorded in the financial statements pertaining to the common control transaction are reversed in the consolidated financial statements of Company A before preparing for the consolidation entries pertaining to the dilution of interest at Company A's level.

To appreciate the context of the above entry, we present the entries passed in Company A's separate financial statements and its consolidated financial statements below.

In the separate statements of Company A, the following entry will be recorded:

Dr Investment in Company B	$ 600,000	
Cr Investment in Company C		$ 120,000
Cr Profit on sale		$ 480,000

Being profit on sale of investment in Company C to Company B

The following entries will be passed in preparing Company A's consolidated financial statements:

CJE1

Dr Investment in Company C	$ 120,000	
Dr Profit on sale	$ 480,000	
Cr Investment in Company B		$ 600,000

Being reversal of profit on sale of Company C to Company B

CJE2

Dr Share capital (C)	$ 200,000	
Cr Investment in C		$ 120,000
Cr NCI (C)		$ 80,000

Being elimination of investment in C as at date of incorporation by Company A

CJE3

Dr Share capital (C)	$1,000,000	
Cr Investment in C		$1,000,000

Being reversal of entries passed in Company B's standalone financials

CJE4

Dr Share capital (B)	300,000		
Cr Investment in B		300,000	

Being elimination of investment in B in Company A's standalone financials

CJE5

Dr Retained earnings (C)	$ 240,000	[40%*600,000]	
Cr NCI (C)		$ 240,000	

Being allocation of post-acquisition retained earnings of Company C to NCI

Note: As the subsidiaries are incorporated by A, the entire balance is post-acquisition retained earnings

NCI of C just before common control event

CJE1	$ 80,000
CJE2	$ 240,000
	$ 320,000

NCI of B just after common control event

CJE6

Dr Non-controlling interests - subsidiary C	$ 320,000		
Cr Non-controlling interests - subsidiary B		$ 118,000	[10%* (700,000+480,000)]
Cr Equity		$ 202,000	

Being entries to adjust for relative changes in the interests held by NCI

FINANCIAL STATEMENT PRESENTATION

For the purpose of presentation of financial statements, the question that arises revolves around how the results of the acquiree should be presented for in both the current period where the combination took place and the comparative period in the financial statements of the acquirer when applying the predecessor method of accounting. Generally, the acquirer has a choice of two alternative methods for the purpose of presenting the financial statements.

Restatement of Current and Comparative Financial Statements

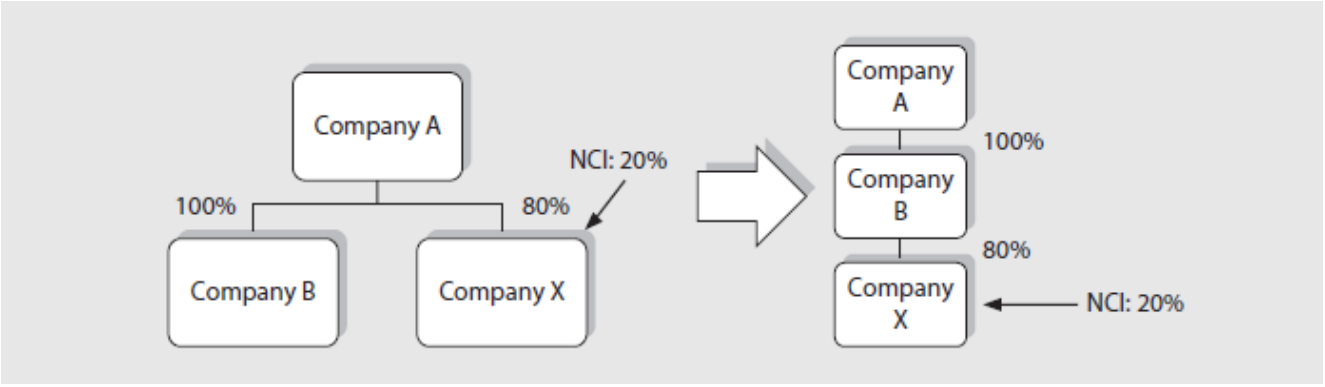
The first option allows the acquirer to present the full results of the acquiree in its consolidated financial statements for the current period regardless of when the combination took place during the period. The basis for this view stems from the conceptual reason underpinning the predecessor method of accounting. That is, there is ultimately no change

in control from the perspective of the ultimate parent company as the latter has control over the combined resources both before and after the combination and that control is not transitory. What has essentially changed is the location of resources, that is, it has moved within the group. Accordingly, the full year results in the year of combination should be presented as the combining entities were both under common control throughout the current period. This argument also extends to the presentation of the financial statements for the comparative periods. Specifically, under this option, the acquirer would restate the financial statements for the comparative periods by applying the predecessor method of accounting as if the transaction had been effected from the beginning of the earliest period presented in the financial statements. However, the results for the comparative periods can only be restated for the full year provided that common control was also established throughout the comparative periods. If the acquiree was acquired by the ultimate parent company previously, the results of the financial periods prior to that acquisition cannot be included as the acquiree was not under common control prior to that acquisition.

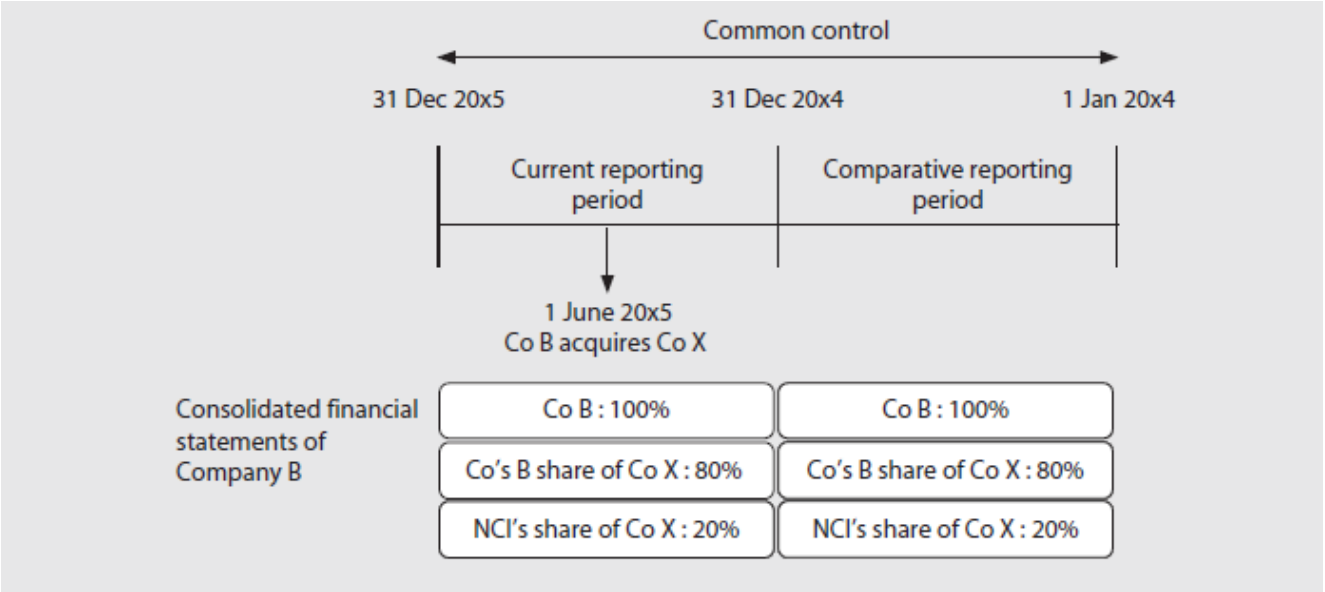
page 1161

ILLUSTRATION 14.7 Restatement of current and comparative periods

Company B and Company X were under common control of Company A since their incorporation many years ago. During the current financial period, Company B acquires Company X from Company A with effect from 1 June 20x5. The financial statements of Company B include one year of comparative financial information. The year-end of all the companies within the group is 31 December.



Analysis

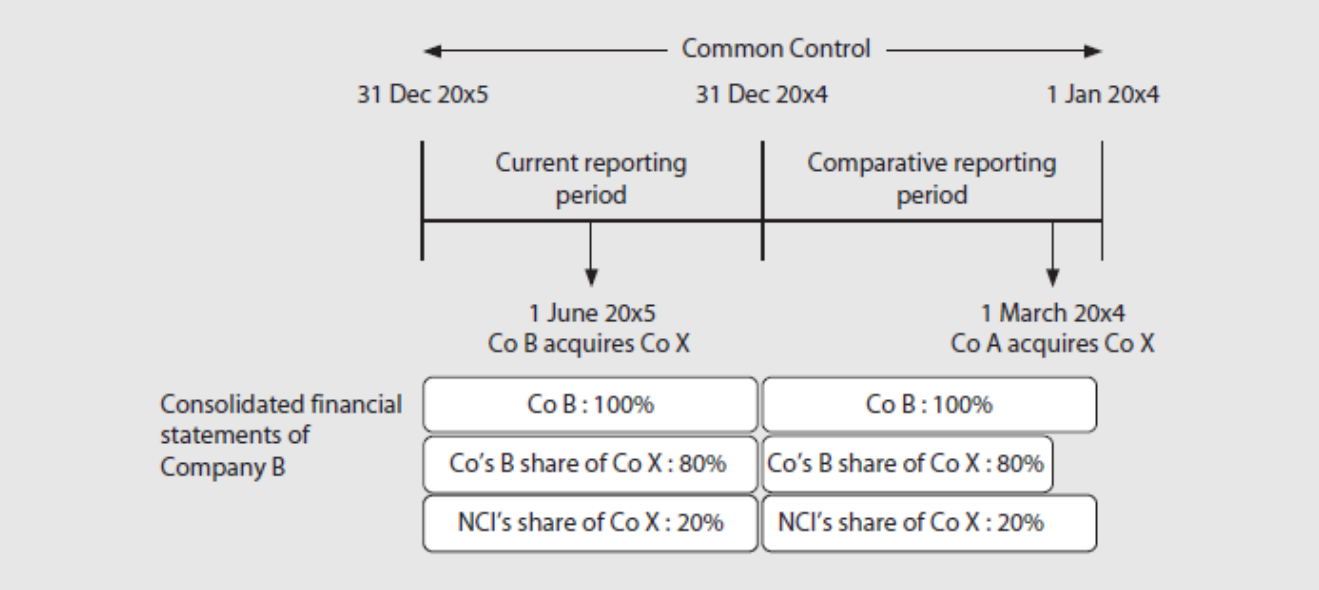


As both Company B and Company X were under common control of Company A in both current and comparative periods, Company B can elect to present current period and restate comparative in the financial statements as if the acquisition of Company X by Company B had occurred prior to 1 Jan 20x4. In this case, Company B's 100% share of Company X's net assets and income for the entire year of 20x5 (that is, including the period from 1 Jan 20x5 to 31 May 20x5) will be included in the consolidated financial statements of Company B for the year ended 31 December 20x5. Eighty percent of this will be attributed to Company B and the remaining 20% will be attributed to non-controlling interests.

page 1162

The same treatment is accorded to the comparative period, that is, Company B's 100% share of Company X's net assets and income for the entire year of 20x4 will be included in the consolidated financial statements of Company B for the year ended 31 December 20x4 with 80% attributed to Company B and the remaining 20% attributed to non-controlling interests.

Conversely, if the fact pattern above were to change such that Company X was acquired by Company A on 1 March 20x4, as shown below, the period of common control will commence only from 1 March 20x4. Assume in this case that common control is assessed to be not transitory.



In this scenario, as common control was only established commencing from 1 March 20x4 onward, Company B may elect to present current period and restate comparatives in the financial statements as if the acquisition of Company X by Company B has occurred on 1 March 20x4, but not any period earlier.

In this case, Company B's 100% share of Company X's net assets and income for the entire period of 20x5 (that is, including the period from 1 January 20x5 to 31 May 20x5) will be included in the consolidated financial statements of Company B for the year ended 31 December 20x5. Eighty percent of this will be attributed to Company B with the remaining 20% attributed to non-controlling interests.

However, for the comparative period, as common control only starts from 1 March 20x4, while 100% of the net assets and income will be included in the consolidated financial statements, only 80% of the income from the period from 1 March 20x4 to 31 December 20x4 will be attributed to Company B. The 80% share of income from 1 January 20x4 to 31 March 20x4 will be eliminated as pre-acquisition reserves. From the non-controlling interests' perspective, apart from the 80% share of income from 1 January 20x4 to 31 March 20x4, which is eliminated as pre-acquisition reserves, 20% of the net assets and income for the entire year will be attributable to them. As explained in Chapter 4, non-controlling interests as a collective body are entitled to their share of retained earnings and other comprehensive income from the date of incorporation. There is essentially no distinction between pre-acquisition and post-acquisition reserves for non-controlling interests.

Non-restatement of Current and Comparative Financial Statements

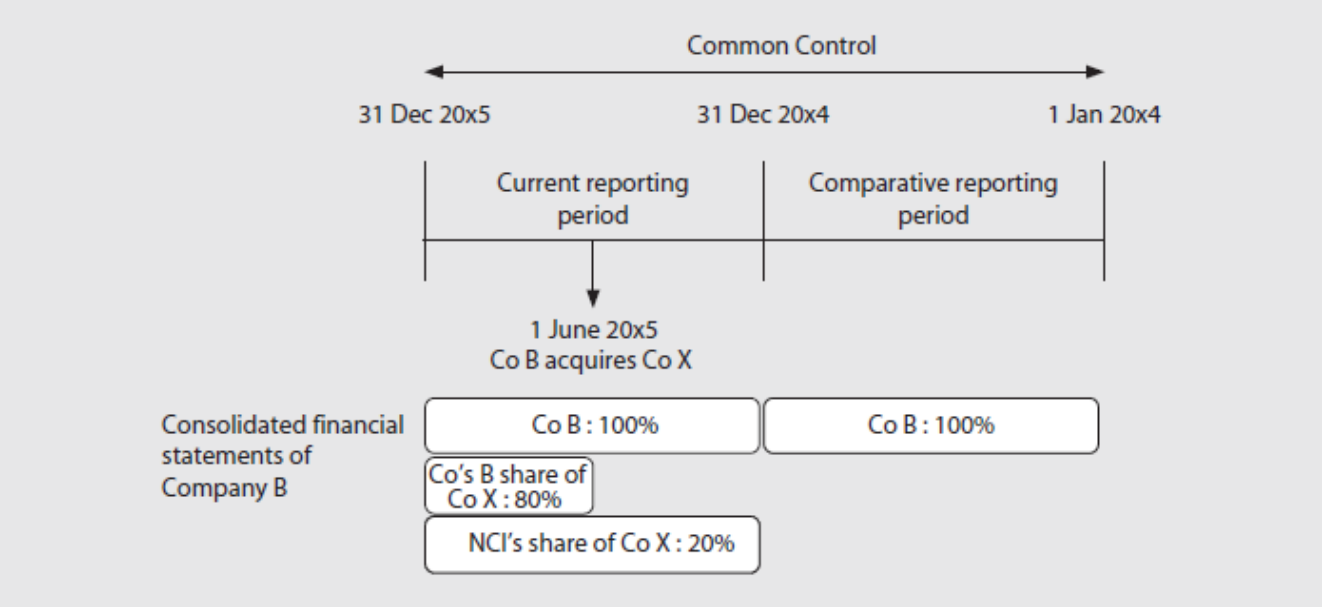
Conversely, the acquirer can elect not to present full results of the acquiree in its consolidated financial statements for the current and comparative periods regardless of when the combination took place. This means that the financial statements of the acquirer for the periods before the combination are not prepared based on the predecessor method of accounting. The conceptual basis for this view is based on paragraph B88 of IFRS 10, which requires the parent to include the income and expenses of a subsidiary in the consolidated financial statements from the date it gains control, and IFRS 10 applies to all entities that are parents, which present consolidated statements. Accordingly, based on this view, the acquirer can only include the results of the acquiree after the date of acquisition in its consolidated financial statements, that is, the income statement in the consolidated financial statements for the current period will not include the full year results of the acquiree. This argument similarly extends to the comparative period. Hence, if this view is adopted, the financial statements for the comparative periods of the acquirer are not restated via the predecessor method of accounting.

This is demonstrated in Illustration 14.8.

ILLUSTRATION 14.8 Non-restatement of current and comparative periods

Assume the same fact pattern in Illustration 14.7.

Analysis



In this scenario, Company B elects not to restate the period before the date of acquisition, 1 June 20x5. Accordingly, Company B will apply the predecessor method of accounting only commencing from 1 June 20x5. Accordingly, for the consolidated financial statements for the period ended 31 December 20x5, 100% of the net assets and income will be included in the consolidated financial statements of Company B and only 80% share of results of Company X for the period from 1 June 20x5 to 31 December 20x5 will be attributed to Company B. The 80% share of results from 1 January 20x5 to 31 May 20x5 will be eliminated as part of pre-acquisition reserves. However, for non-controlling interests' perspective, 20% of the net assets and income for the entire period from 1 January 20x5 to 31 December 20x5 will be attributed to them.

For the comparative period, Company B will not restate the financial statements using the predecessor method of accounting. The results and net assets of Company X are not included in the financial statements of Company B. If Company B does not have any subsidiary, it will prepare only standalone financial statements for the period ended 31 December 20x4.

To demonstrate the accounting effects of this option, assume the following information:

Company B paid cash consideration amounting to $140,000 to Company A in exchange for the 80% interest held by Company A in the paid up capital of Company X on 1 June 20x5. Net income of Company X for the period ended 31 December 20x5 is $60,000. Assume income and expenses accrue evenly throughout the period.

As at 31 December 20x5, the financial position of the combining entities stands at:

	Company B $'000	Company X $'000	Elimination entries $'000	Consolidated $'000
Fixed assets	200	120		320
Investment in Company X	140	–	(140)	–
Other assets	160	50		210
Other liabilities	(50)	(20)		(70)
Net assets	450	150		460
Share capital	100	30	(30)	100
Retained earnings	350	120	92	378
Merger reserve	–	–	48	(48)
Non-controlling interests			30	30
Total equity	450	150		460

Computation of non-controlling interests

Non-controlling interests share of net assets as at 31 December 20x5 = 20% × 150,000 = 30,000

Preparation of accounting entries

In the separate financial statements of Company B

Dr Investment in Company X	140,000	
Cr Cash		140,000

Being cash consideration paid to Company A for investment in Company X

Consolidation elimination entries

Dr Share capital	30,000	
Dr Retained earnings	92,000	
Dr Merger reserve	48,000	
Cr Investment in Company X		140,000
Cr Non-controlling interests		30,000

Being elimination entry of investment account, share capital and retained earnings for predecessor method of accounting

Explanatory notes:

As only the results from 1 June 20x5 to 31 December 20x5 will be included in the consolidated financial statements of Company B, it is necessary to eliminate the pre-acquisition retained earnings as at 31 May 20x5.

	$'000
Retained earnings as at 31 December 20x5	120
Less: Profit for the period	60
Retained earnings as at 1 January 20x5	60

Hence: Amount of pre-acquisition reserves to be eliminated by Company B

= 80% of retained earnings as at 1 January 20x5 + 80% of profit for the period up to 1 June 20x5 + 20% of retained earnings as at 31 December 20x5
= (80% × 60,000) + [80% × (60,000 × 5/12)] + (20% × 120,000)
= 48,000 + 24,000 + 20,000
= 92,000

Analytical check for group retained earnings

Group retained earnings	= Retained earnings of Company B	+ Company B's share of profits from 1 June 20x5 to 31 December 20x5
	= 350,000	+ 80% (60,000 × 6/12)
	= 350,000	+ 20,000
	= 370,000	

ACCOUNTING FOR BUSINESS COMBINATION UNDER COMMON CONTROL BY THE SELLING ENTITY

In business combinations under common control, when the acquirer purchases entities or business from another entity under common control, a disposal would have taken place from the perspective of the selling entity.

As with the accounting from the perspective of the acquirer, given that the selling entity has lost control of the subsidiary or business in the transaction, the principles from paragraphs 25, B97 and B99 of IFRS 10 on the loss of control should be applied.

In a nutshell, the selling entity would derecognize the assets and liabilities (including any non-controlling interests and components of other comprehensive income) from its consolidated financial statements from the date when control is lost. A gain or loss on disposal on the sale is recognized in the profit or loss based on the difference between the fair value of the consideration received and the carrying value of the assets and liabilities derecognized.

BUSINESS COMBINATIONS UNDER COMMON CONTROL IN THE SEPARATE FINANCIAL STATEMENTS

The chapter so far has dealt with the financial reporting implications in the consolidated financial statements of the acquirer. In this section, we will discuss the accounting treatment for business combination under common control in the separate financial statements of both the acquirer and the selling entity.

Accounting for the Acquirer

Generally, business combinations under common control are typically effected by either the acquirer purchasing a group of assets or net assets, which meet the definition of a business under IFRS 3 or the shares in a subsidiary that meet the definition of a business.

If the transaction is effected via a purchase of assets or net assets, these assets are recorded in the standalone financial statements of the acquirer. The carrying values recognized are based on the predecessor carrying values as explained in the section on application of predecessor method of accounting above.

Conversely, if the transaction is effected through the purchase of equity interests, the acquirer accounts for the investment in accordance with paragraph 10 of IAS 27 *Separate Financial Statements*, which requires the acquirer to account for its investments in subsidiaries, joint ventures, and associates in the separate financial statements at either (a) cost, (b) in accordance with IFRS 9 *Financial Instruments*, or (c) using the equity method as described in IAS 28 *Investments in Associates and Joint Ventures*.

Cost is defined neither in IAS 27 nor in other IFRS Standards. However, IAS 27 provides specific guidance on how to measure cost in three situations: (1) where a new entity is inserted into a group as part of a reorganization among meeting other criteria set out in the IAS Standard; (2) when a parent becomes an investment entity; and (3) when an investment entity ceases to become an investment entity. Further, while these investments are financial instruments, paragraph 2.1(a) of IFRS 9 excludes them from the scope of the IFRS Standard unless explicitly permitted. Paragraph 5 of IFRS 2 *Share-based payment* also excludes transactions in which equity instruments are issued in exchange for net assets acquired in a business combination under IFRS 3 and in a combination of entities or businesses under common control, amongst other transactions from its scope.

While not formally defined, the glossary to IFRS Standards explains cost as "the amount of cash or cash equivalent paid or the fair value of the other consideration given to acquire an asset at the time of its acquisition or construction." Although the glossary does not form an integral part of the IFRS Standards, it does provide useful guidance on how cost should be calculated.

Accordingly, cost of investments in the separate financial statements of acquirer should be accounted for based on the fair value of the consideration given. In the event that the fair value of the consideration cannot be reliably estimated, cost should be measured based on the fair value of the investment acquired.

The conceptual basis for measuring cost at the fair value of the consideration given is predicated on the argument that the combining entities are separate legal entities and the accounting should reflect the actual terms of the transaction. Hence, the acquirer will record the investment in its separate financial statements based on the fair value of the consideration given in exchange for the investment in the acquiree. The consideration given in exchange could be cash, assets, or shares of the acquirer.

However, in some instances, as this is a common control transaction, it may be clear that the purchase consideration paid to the selling entity (which is under common control of the same party) is not commensurate with the fair value of the entity acquired. In this case, we believe that the acquirer has an accounting policy choice to measure the cost of the investment at the fair value of the consideration given or at the fair value of the transaction (that is, based on the fair value of the investments acquired).[4] If the latter choice is elected, where the fair value of the entity acquired is higher than the consideration paid, the acquirer will impute an amount equivalent to the difference as equity contribution by the ultimate holding company. Conversely, in the situation

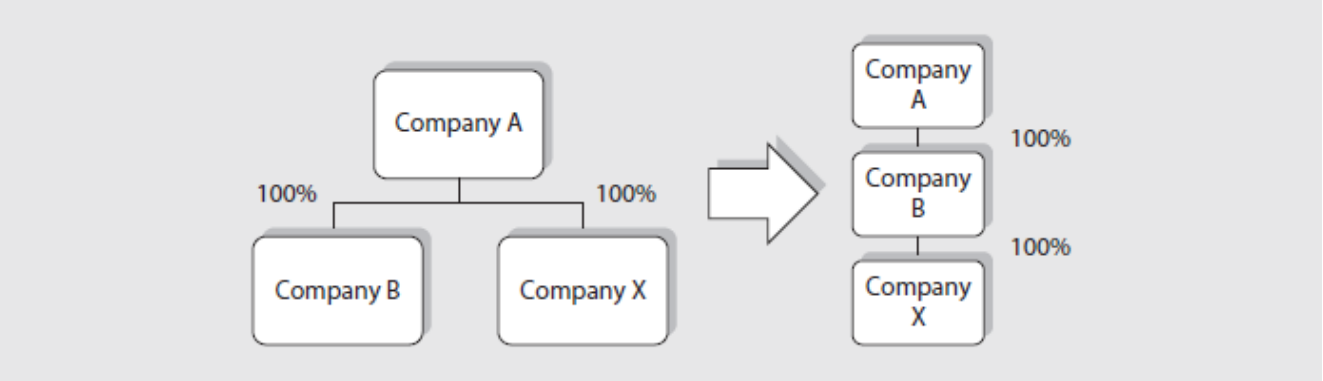
page 1167

where the consideration paid is higher than the fair value of the entity acquired, the difference is imputed as a dividend distribution to the ultimate holding company. Once elected, the accounting policy must be applied consistently to all similar transactions, other events, or conditions.

Accounting for the Selling Company

From the perspective of the selling entity, the seller has disposed the investment it previously held. Likewise, the seller should record the consideration received in exchange for the disposal at its fair value. If the consideration received does not correspond with the fair value of the entity sold, the seller will similarly have an accounting policy choice to either record the consideration received at its fair value or based on the fair value of the transaction (that is, the fair value of the investment sold) for the same reasons set out in the preceding paragraph. Similarly, once elected, the accounting policy must be applied consistently to all similar transactions, other events, or conditions.

ILLUSTRATION 14.9 Accounting in the separate financial statements



Company B pays $70,000 cash to Company A in exchange for the 100% interests in Company X. The carrying value of Company A's investment in Company X is $120,000 in its separate financial statements and the fair value of Company X at the date of the transaction is $150,000.

Analysis

In this scenario, the consideration of $70,000 is not commensurate with the fair value of the investment of $150,000. Hence, both Company B and Company X have an accounting policy choice of recording the transaction based on either the fair value of the consideration paid/received or the fair value of the transaction (that is, based on the fair value of the investment purchased/sold).

The accounting entries for both options are demonstrated below.

Scenario 1 – Fair value of consideration paid/received			Scenario 2 – Fair value of investment purchased/sold		
In the books of Company B			In the books of Company B		
Dr Investment in Co X	70,000		Dr Investment in Co X	150,000	
Cr Cash		70,000	Cr Cash		70,000
			Cr Equity contribution[1]		80,000
Being cash paid to Company A for investment in Company X			*Being cash paid to Company A for investment in Company X*		
In the books of Company A			In the books of Company A		
Dr Cash	70,000		Dr Cash	70,000	
Dr Loss on disposal	50,000		Dr Investment in Co B[2]	80,000	
Cr Investment in Co X		120,000	Cr Investment in Co X		120,000
Being disposal of Company X to Company B			Cr Profit or Loss[2] (150,000-120,000)		30,000
			Being disposal of Company X to Company B		

Explanatory notes:

1. The difference between the fair value of the investment and the consideration paid is recognized as an equity transaction with the shareholder, that is, Company A. Effectively, Company B has purchased Company X at fair value with the difference being injected by the Company A as capital contribution.
2. Effectively, Company A has disposed the investment in Company X at fair value where the fair value uplift of $30,000 is recognized in profit or loss. The difference between the cash received from Company B and the fair value of the Company X represents additional investment in Company B via capital injection in kind. In this case, the fair value of Company X can be measured reliably.

However, if the scenario were to be amended such that Company B issues its shares in exchange for the investment in Company X instead of paying cash, the accounting impact would be the same for both options and different from the accounting impact had cash been transferred. This is explained in the table below.

Accounting under Option 1 – Fair value of consideration paid			Accounting under Option 2 – Fair value of investment purchased		
In the books of Company B			In the books of Company B		
Dr Investment in Co X[3]	150,000		Dr Investment in Co X	150,000	
Cr Share capital		150,000	Cr Share capital		150,000
Being shares issued to Company A for investment in Company X			*Being shares issued to Company A for investment in Company X*		
In the books of Company A			In the books of Company A		
Dr Shares in Co B[4]	120,000		Dr Shares in Co B[5]	120,000	
Cr Investment in Co X		120,000	Cr Investment in Co X		120,000
Being disposal of Company X to Company B			*Being disposal of Company X to Company B*		

Explanatory notes:

3. The consideration paid for is in the form of shares issued by Company B. In this case, as Company B is a private entity, fair value may not be reliably measured. As the fair value of the Company X may be more reliably measurable, Company B measures the cost of investment in Company X based on the fair value of investment.
4. As the consideration received by Company A is in the form of shares issued by Company B and there is no change in control before and after the transaction, that is, Company A still owns 100% in Company X. Hence, the transaction is essentially a share swap, which should be accounted for at cost, that is, the carrying value of the investment given up.
5. No gain or loss on disposal is recognized in this case as the consideration received by Company A is in the form of shares issued by Company B. As there is in substance no change before and after the transaction, that is, Company A still owns 100% in Company X, the transaction is in substance a share swap, which should be accounted for at cost in this option.

GROUP REORGANIZATIONS

Group reorganization, also known as corporate restructuring, is a process whereby the parent company restructures the entities within the group to achieve certain objectives and in doing so, alters the relationships between these entities. The reasons for undertaking the restructuring exercise could be due to legal, tax, regulatory, or other economic reasons. For instance, the parent may wish to achieve a change in the tax base of a subsidiary, enable the distribution of dividends because of regulatory requirements, or in preparation for a sale.[5]

Different methods are available in practice to restructure a group of companies. These techniques may involve, but are not restricted to, transferring businesses between entities in the group, incorporating new companies, which may be inserted into group as new holding companies or intermediate holding companies within the group. In some cases, new companies may be established to take over specific businesses of the group in preparation for disposal or for listing.

By and large, from the perspective of the ultimate parent company, reorganizations within the group do not possess any economic substance as there is usually no change in control arising from the restructuring and non-controlling interests are typically not affected. The entities, which are the subject matter of the restructuring exercise tend to remain under the common control of the ultimate holding company before and after the transaction. Consequently, such corporate restructurings should generally not have an impact on the consolidated financial statements of the ultimate parent company.

However, from the viewpoint of the parties to the restructuring exercise, there could very well be commercial substance to the transaction and this should be reflected appropriately in their financial statements. Some of these transactions may qualify as business combination under common control at the combining entities' level. For instance, in group reorganizations where a business is transferred from one entity to another entity within the group and the acquirer meets the definition of business under IFRS 3, this may constitute a business combination under common control provided the other criteria as discussed above are met. Conversely, other forms of restructuring may not qualify as business combinations but are merely common control transactions. For example, corporate restructuring involving newly set up shell companies typically do not meet the definition of business combinations under common control.

In order to determine the appropriate accounting treatment for the restructuring exercise, it is important to analyze the facts and circumstances of the transaction carefully. Key to this is the appreciation of the business rationale behind the transaction. "What is the objective of the restructuring and what is the ultimate parent company attempting to achieve at the end of the exercise?" It is also important to assess if there has been a change in control at the end of the

restructuring exercise. If there is no change in control ultimately, the group reorganization does not possess economic substance from the perspective of the ultimate parent company.

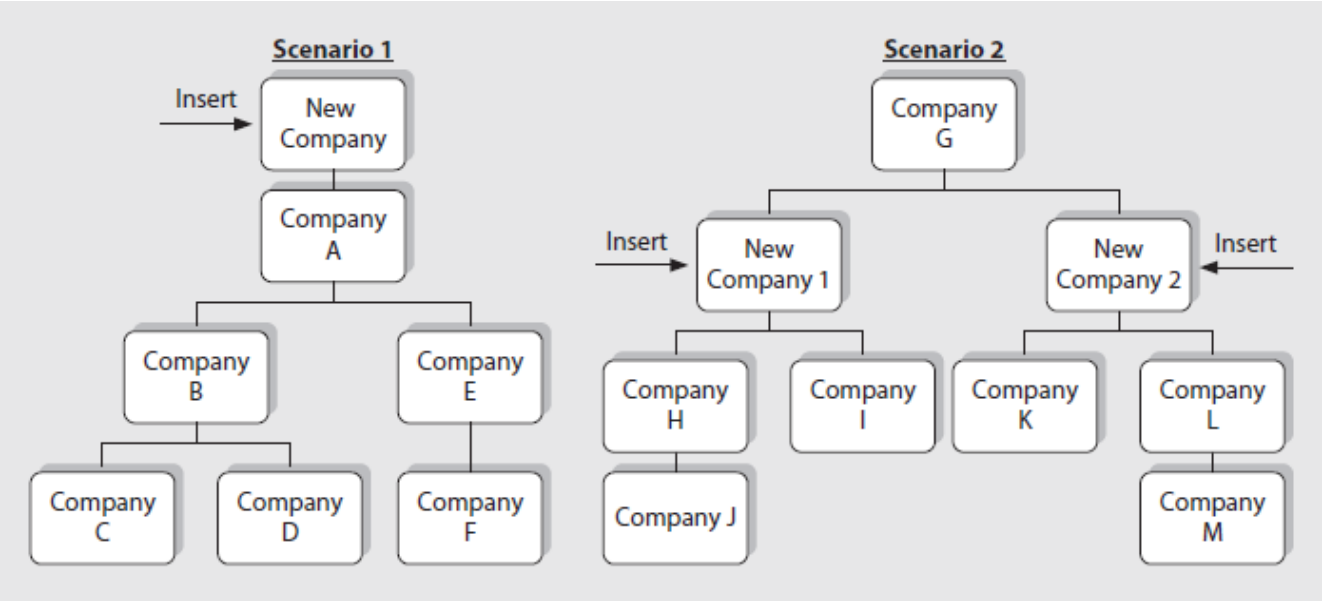
Following that, it is also important to understand how the reorganization is being effected. If the exercise entails transferring of entities or assets, the crucial assessment is whether these entities or assets constitute business within the ambit of IFRS 3. The same assessment is to be applied to the acquirer as well. If both are not businesses, as discussed in the preceding sections above, the transaction is not a business combination under common control and the transaction is accounted for as an acquisition of assets under paragraph 2b of IFRS 3. This assessment is especially relevant in the case where newly established parent companies are inserted into the existing group as will be explored below.

At this juncture, this chapter has explored and extensively discussed the accounting implications for business combinations under common control, which in itself could be one form of group reorganization. In the following sections, attention will be channeled to the accounting treatment for the other prevalent form of corporate restructuring, that is, establishment of and inserting newly incorporated shell companies within the existing group as new holding companies. The accounting implications in both the consolidated and separate financial statements for such transactions will be discussed.

UTILIZATION OF NEW COMPANY FOR CORPORATE RESTRUCTURINGS

In practice, it is not uncommon for a newly set up parent company to be inserted into the group structure. This can be achieved by incorporating a new shell company that will issue its shares in exchange for the equity investments in the group transferred by the existing shareholders. Such shell companies can be inserted anywhere within the group as shown in Figure 14.2. The new company may end up combining with a single reporting/group of reporting entities or multiple entities as shown in Scenario 1 and 2 respectively in Figure 14.2.

FIGURE 14.2 Formation of new companies in group restructuring



Generally, these new companies are unlikely to meet the definition of business under paragraph 3 of IFRS 3. IFRS 3 defines business as "an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing a return in the form of dividends, lower costs, or other economic benefits directly to investors or other owners, members, or participants". Paragraph B7 of IFRS 3 further explains that a business consists of inputs and processes applied to those inputs that have the ability to create outputs. Whilst businesses usually have outputs, outputs are not required for an integrated set to qualify as a business. As these new companies are typically shell companies with no process, they will not qualify as business within the ambit of IFRS 3. This is consistent with the principles in paragraph B18 of IFRS 3, which affirms that a new entity set up to achieve a business combination is not necessarily the acquirer, and if a new entity is formed to issue equity interests to effect a business combination, one of the combining entities that existed before the business combination shall be identified as the acquirer.

Depending on whether the restructuring exercise is structured as the new company combining with a single reporting/group of entities or multiple entities, different considerations must be brought to bear. The following section will discuss these factors of consideration before the accounting treatment is explained.

Formation of New Company – Single Acquisition

In the case when the new company is combining with a single reporting entity or single group of reporting entities, such as in scenario 1 in Figure 14.1, above, the following analysis will apply. Since the new company is not a business, it cannot be an acquirer under IFRS 3. Accordingly, the combination of the new company and existing group will not qualify as a business combination under IFRS 3 for which the acquisition method accounting method is required.

Further, even if the principles of reverse acquisition were to be applied, as paragraph B19 of IFRS 3 requires the accounting acquiree to meet the definition of business for the transaction to be accounted for as a reverse acquisition, the new company, which is not a business, cannot be identified as the accounting acquiree as well.

The next question is whether the transaction constitutes a business combination under common control. Given that the new company is not a business, even if the existing group constitutes a business, it will not qualify as a business combination under common control.

Formation of New Company – Multiple Acquisitions

In the case where the new company combines with multiple entities, additional analysis must be performed. Specifically, as more than one entity is included in the transaction, apart from the new company, an assessment would have to be made to ascertain if there is a combination of the other entities in the restructuring exercise. For instance, in scenario 2 of Figure 14.2, one would have to assess if there is effectively a combination of entities between Company H and Company I to form a new reporting entity under the new company as both of them were previously individually held by Company G. If there is effectively a business combination, the identity of the acquirer has to be determined.

Paragraph B18 of IFRS 3 requires one of the combining entities that existed before the combination (that is, excluding the new company) to be identified as the acquirer when a new entity is formed to issue equity instruments to effect a business combination. Hence, in scenario 2 above, either Company H or Company I will be identified as the acquirer. However, because this is a corporate restructuring exercise that is ultimately orchestrated by the ultimate parent entity, for the purpose of assessing whether there is a business combination from the perspective of the identified acquirer (from the combining entities before the transaction), a consideration would have to be made whether there is commercial substance of the transaction from the perspective of the identified acquirer for the purpose of determining the accounting treatment. Acquisition accounting should only be applied when there is commercial substance.

If the transaction does not qualify as a business combination in the other combining entities excluding the new company, a final evaluation should be performed to ascertain if the transaction constitute a business combination under common control. In this case, applying the same principles enunciated above, the assessment will have to be

made of the combining entities before the combination excluding the new company when determining whether the entities or businesses are under common control. The reason for this as explained by IFRIC[6] is that the approach would then be consistent with the requirements in paragraph B18[7] of IFRS 3. If the criteria are not met, the transaction does not qualify as a business combination under common control.[8]

ACCOUNTING FOR GROUP REORGANIZATIONS

If the restructuring transaction does not qualify as either a business combination under IFRS 3 or a business combination under common control, the combination of the new company and the existing group is accounted for as a continuation of the existing group.

Essentially, the combination in such scenario has no economic substance as the new company is essentially a shell company and there is no change in control after the transaction. Accordingly, the consolidated financial statements of the new company should portray a continuation of the existing group. Therefore, the accounting treatment, which we termed as continuation accounting, broadly similar to predecessor method of accounting will be as follows:

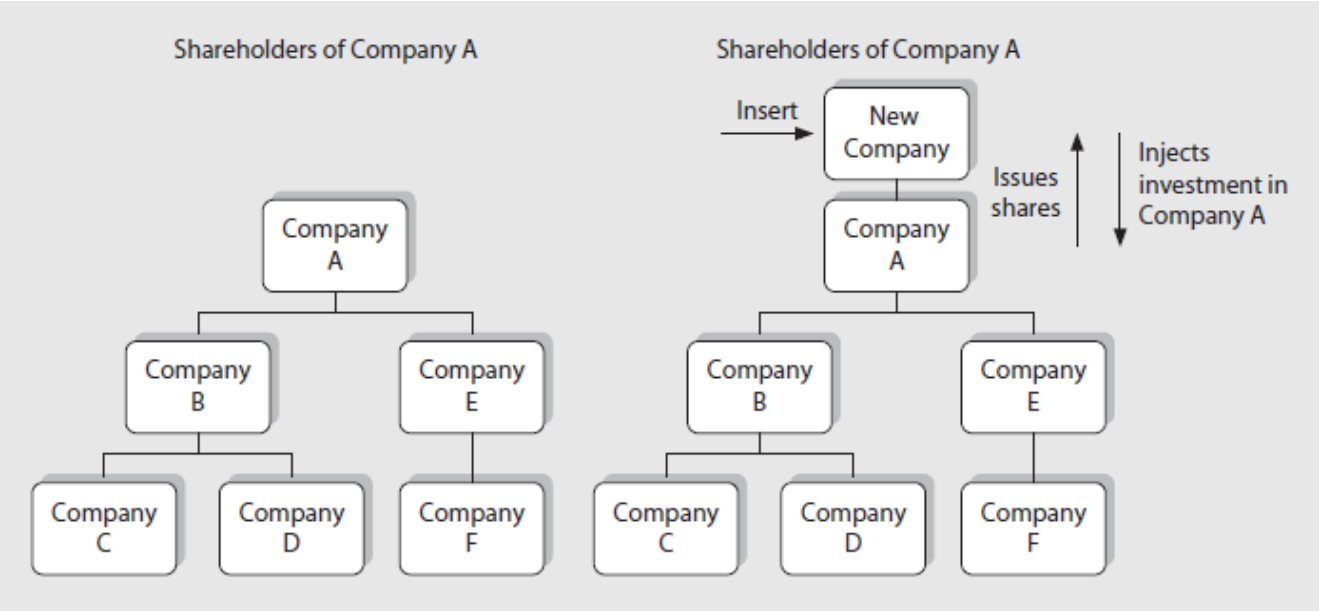
- Assets and liabilities of the combining entities are measured at their carrying values as reflected in the transferor's company's financial statements,[9] that is, there is no fair value uplift of the existing assets and liabilities. The carrying value of the assets and liabilities includes the goodwill and fair value adjustments that relate to the acquiree (existing group) that is recorded in the transferor's consolidated financial statements. Similarly, no adjustment is made to recognize any new asset or liability (for example, intangible assets or contingent liabilities) as in the case of acquisition accounting under IFRS 3.
- No additional goodwill is recognized. The only goodwill that can be recognized in the combination relates to the existing goodwill recorded by the existing group in the financial statements of the transferor company. Such goodwill could have arisen from past acquisitions undertaken by the existing group.
- Reserves other than share capital (for example, retained earnings and foreign currency translation reserve) of the combining entities are added together.
- Difference between the consideration paid for the transaction and share capital of the existing group at the date of acquisition is recognized within equity. This difference is recorded in a separate capital reserve.[10] In circumstances when there are additional assets (such as goodwill and fair value adjustments) or liabilities recognized in the transferor company's consolidated financial statements, such items will be recognized in the new company's consolidated books. Accordingly, the difference calculated above will have to be reduced by the aggregate carrying values of these net assets that are not recorded in the standalone financial statements of the transferee company.
- As the consolidated financial statements of the new company are essentially a continuation of the existing group, the full year results of the new company and existing group are presented for both current and comparative period regardless of when the transaction took place.
- For subsequent post-acquisition accounting, apart from the application of the principles above, the normal rules of consolidation will apply. For instance, intercompany balances, transactions, and unrealized profits are eliminated.

See Illustration 14.5 for a numerical example of the accounting. The mechanics of continuation accounting is the same as predecessor method of accounting.

In the next section, we discuss the accounting implications of the various forms of group reorganizations using new companies. For the discussion on all the following illustrations, it is assumed that the new company does not apply the exemption for the preparation of consolidated financial statements under IFRS 10.

New Company Inserted as New Ultimate Parent Company

FIGURE 14.3 Insertion of Newco as new ultimate parent company



In this group reorganization, a new company that is newly incorporated is inserted into the group structure as the new parent of an existing group. As shown in Figure 14.3, New Company issues its shares to the shareholders of Company A in exchange for its investment in Company A. There are no changes to the shareholders of Company A before and after the transaction.

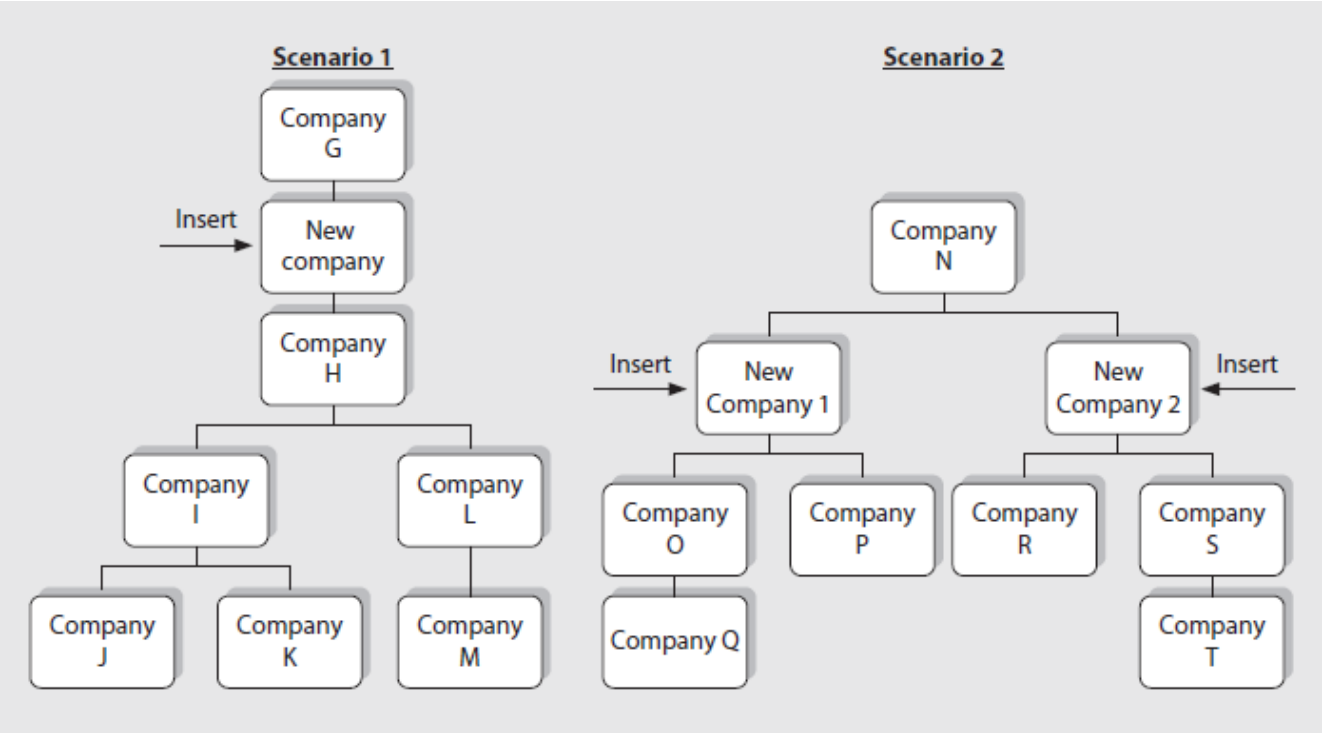
From the perspective of New Company as a group, the transaction is not a business combination under IFRS 3 as New Company does not meet the definition of a business. Although Company A and its subsidiaries qualify as a business, the transaction cannot be accounted for as a reverse acquisition as New Company is not a business. In assessing whether it is a business combination under common control from Company A's perspective, there is no combination as Company A did not combine with any entities under the transaction; Company A is already in a group. Therefore, the transaction is also not a business combination under common control.

Accordingly, New Company will have to account for this restructuring transaction as a group reorganization in its consolidated financial statements where continuation accounting is applied. Essentially, the consolidated financial statements of New Company will reflect the carrying amounts of the existing group, that is, Company A and its subsidiaries. The method of accounting is disclosed as such in the consolidated financial statements. The share capital of New Company will be reflected in the consolidated financial statements and any difference between the share capital of New Company and the net assets of the Group will be recorded within equity.

New Company Inserted as New Intermediate Parent Company

Alternatively, it could also be possible for the new company to be inserted as a new intermediate parent company within the group itself. In this form, the new company can be the new intermediate parent for a single entity or multiple entities as shown in scenarios 1 and 2 in Figure 14.4, respectively.

FIGURE 14.4 Insertion of Newco as new intermediate parent company



Scenario 1

In this scenario, the newly incorporated shell company is inserted as an intermediate parent company of Company H and its subsidiaries. New Company issues its shares to Company G in exchange for its investment in Company H.

From the perspective of the consolidated financial statements of the Company, as a group the transaction is not a business combination under IFRS 3 as New Company does not meet the definition of a business. In evaluating whether it is a business combination under common control, disregarding the new company, from Company H's perspective, there is no combination as Company H did not combine with any entity under the transaction. Therefore, the transaction is also not a business combination under common control.

Accordingly, New Company will have to account for this transaction as a group reorganization in its consolidated financial statements where continuation accounting is applied. The consolidated financial statements of New Company will reflect the financials of the existing group, that is, Company H and its subsidiaries. The share capital of New Company will be reflected in the consolidated financial statements and any difference between the share capital and the net assets will be recorded within equity. This scenario is similar to the situation described when the new company is inserted as a new ultimate parent company.

Scenario 2

In this scenario, two newly incorporated shell companies are inserted as intermediate parent companies within the group. However, the new companies here combine with multiple entities as opposed to one entity as in the case of scenario 1. In the case of New Company 1, it combines with Company O (and its subsidiaries) and Company P. In the case of New Company 2, it combines with Company R and Company S (and its subsidiaries). Both new companies issue their own shares to Company N in exchange for its investment in the multiple entities.

page 1176

From the perspective of the consolidated financial statements of New Company 1, as New Company does not meet the definition of a business, New Company 1 cannot be the acquirer. In view of this, the next consideration is that given that there is effectively a combination between Company O (and its subsidiaries) and Company P as they have been brought together to form a new reporting entity under New Company 1, can either Company O or Company P be identified as the acquirer that obtains control over the other company as either a business combination

or reverse acquisition under IFRS 3. This will in turn depend on whether there is any economic substance to the transaction from Company P or Company O's perspective. If there is, this may be accounted for using the acquisition method under IFRS 3.[11] Assume that in this case, there is no commercial substance. Accordingly, the transaction is not a business combination for which the acquisition method is applied.

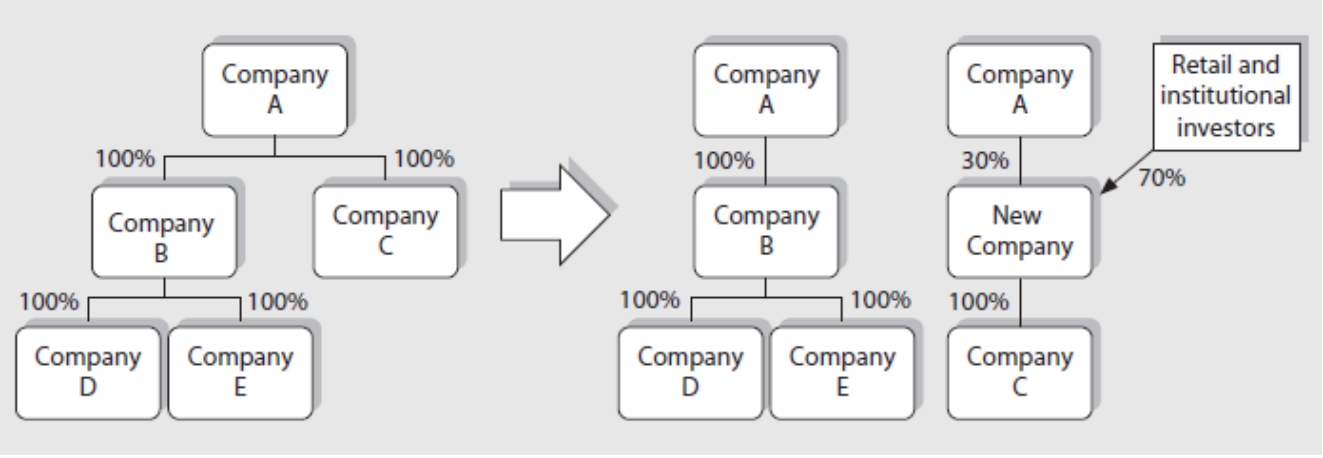
Next, we assess whether it is a business combination under common control. Again, disregarding New Company 1, there is effectively a combination of entities as discussed in the preceding paragraph. As Companies O and Company P were under the common control of Company N and assuming that control is not transitory, this type of group reorganization involving New Company 1 will qualify as business combination under common control in the consolidated financial statements of New Company 1. In this case, Company O and Company P will apply either the predecessor method of accounting or acquisition method for the combination, and continuation accounting will be applied in the consolidated financial statements of New Company 1. In a nutshell, the "pooled financial statements" of Company O and P will be subsumed within New Company 1. The same analysis will apply for New Company 2.

However, from the perspective of Company N, the ultimate parent company and its consolidated financial statements, the group reorganization has no economic substance and Company N will continue to account for its subsidiaries (that is, subgroup of Company O, Company P, Company R, and subgroup of Company S) in the same manner prior to the group reorganization. This means that if the acquisition method were to be applied at the consolidated financial statements in the new companies, any goodwill and/or fair value adjustments recorded at that level will be reversed when the consolidated financial statements of Company N are being prepared.

UTILIZATION OF NEW COMPANY FOR SPINNING OFF EXISTING BUSINESS

In some situations, a new company may be incorporated to facilitate a transfer of business with the ultimate aim of a planned divestment through a sale to a third party, a public listing, or other means. The same considerations discussed in the preceding sections above will also apply.

ILLUSTRATION 14.10 Formation of New Company for IPO



Company A incorporates a new shell company, New Company and transfers Company C, which meets the definition of a business under IFRS 3 in exchange for the shares in New Company. Shortly thereafter, New Company is listed on the stock exchange in the country. As part of the listing, New Company increases its share capital for the purpose of selling the shares to retail and institutional investors as part of the IPO. The successful listing results in a dilution of Company A's shareholdings from 100% previously to 30% after the IPO.

Analysis

In substance, this transaction is no different from the scenarios where a new company is inserted as an ultimate or intermediate holding company. The same set of considerations discussed above will also apply here.

From the perspective of the consolidated financial statements of New Company, the transaction is not a business combination. This is because New Company, being a new shell company, does not meet the definition of a business under IFRS 3. This is notwithstanding that Company C qualifies as a business. Similarly, it is not a reverse acquisition for the same reason.

As to whether the transaction constitutes a business combination under common control, excluding New Company, there is no combination per se as Company C did not combine with any entity under the transaction. Hence, the transaction is also not a business combination under common control.

Looking closely at the nature of the restructuring, there is essentially no economic substance as a new shell company has merely been inserted in between Company C and Company A. There is ultimately no change in control after the restructuring prior to the IPO. Accordingly, New Company will have to account for this transaction as a group reorganization in its consolidated financial statements where continuation accounting is applied. The consolidated financial statements will reflect the financials of Company C.

Upon the IPO, Company A will account for the dilution of shareholdings from 100% to 30% as a deemed disposal (resulting in a loss of control) in its consolidated financial statements.

ILLUSTRATION 14.11 Formation of New Company to facilitate disposal

Based on the fact pattern in Illustration 14.10, if the scenario were to change such that instead of divesting Company C via a subsequent public listing through New Company, Company A is now selling Company C to a third party company, Company X. As part of the sale and purchase agreement, Company A is required to incorporate a new company, New Company, upon which Company C is transferred over. Following that, Company X will proceed to acquire New Company. The consideration for the purchase of Company C will be paid for in cash by New Company through the funds injected by Company X. The establishment of New Company is contingent on the completion of the transaction. In the event that the transaction does not go through, New Company will not be set up.

Analysis

In this case, from the perspective of New Company, there is substance in the transaction as New Company is effectively an extension of the Company X, who is acquiring Company C. This is because New Company would not have been established but for the sale and purchase transaction. If the transaction does not take place, Company A would not have incorporated the New Company. Upon the completion of the transaction, there is a change in the control of the newly formed New Company group (that is, including Company C) to Company X and the consideration is paid for in cash to Company A via the funds injected into New Company by Company X.

Hence, in this scenario, New Company can be regarded as the acquirer for the purpose of application of the acquisition method of accounting under IFRS 3. Accordingly, the fair value of the identifiable assets acquired and liabilities assumed, including goodwill, will be recognized in the consolidated financial statements of New Company.

ACCOUNTING FOR GROUP RESTRUCTURING IN SEPARATE FINANCIAL STATEMENTS

Separate Financial Statements of the New Parent

As discussed above, one of the accounting options allowed by IAS 27 in the separate financial statements is for an entity to account for its investments in subsidiaries, joint ventures, and associates at cost. However, cost is neither defined in IAS 27 itself nor in other IFRS Standards.

Although it does not provide any definition of cost, IAS 27 provides detailed guidance on how cost is measured in a particular type of group reorganization.[12] A parent can apply this guidance only when all the criteria laid out in paragraph 13 of IAS 27 are met. Specifically, when a parent reorganizes the structure of its group by establishing a new entity as its parent in a manner that satisfies the following criteria:

(a) "The new parent obtains control of the original parent by issuing equity instruments in exchange for existing equity instruments of the original parent;"

(b) "The assets and liabilities of the new group and the original group are the same immediately before and after the reorganization; and"

(c) "The owners of the original parent before the reorganization have the same absolute and relative interests in the net assets of the original group and the new group immediately before and after the reorganization."

The new parent accounts for its investment in the original parent at cost in its separate financial statements. The new parent is required to measure cost at the carrying amount of its share of the equity items shown in the separate financial statements of the original parent at the date of the reorganization (Paragraph 13 IAS 27).

Paragraph 14 of IAS 27 further extends this requirement to an entity that is not a parent (that is, the entity has no subsidiaries) but establishes a new entity as its parent in a manner that satisfies the criteria listed above.

The rationale for measuring the cost of the new parent's investment[13] in the original parent in the manner set out above is explained in the Basis for Conclusion to IAS 27. In particular, as explained in the BC, "in this limited type of group reorganization, the assets and liabilities of the new group and the original group are the same immediately before and after the reorganization. Additionally, the owners of the original parent have the same relative and absolute interests in the net assets of the new group immediately after the reorganization as they had in the net assets of the original group before the reorganization. Finally, this type of group reorganization involves an existing entity and its shareholders agreeing to create a new parent between them, which is different from many other transactions initiated by a parent over an entity that will be positioned below it in the group structure, thereby resulting in a parent-subsidiary relationship" (BC 22 to IAS 27).

Hence, applying this requirement to the various scenarios explored above, the types of restructuring that would qualify for this would be when (1) a new company is established as the new ultimate parent company and when (2) an intermediate new parent is established within the group as shown in scenario 3 and scenario 4, respectively in Figure 14.5.

FIGURE 14.5 Group restructuring qualifying for measurement requirement in paragraph 13 of IAS 27

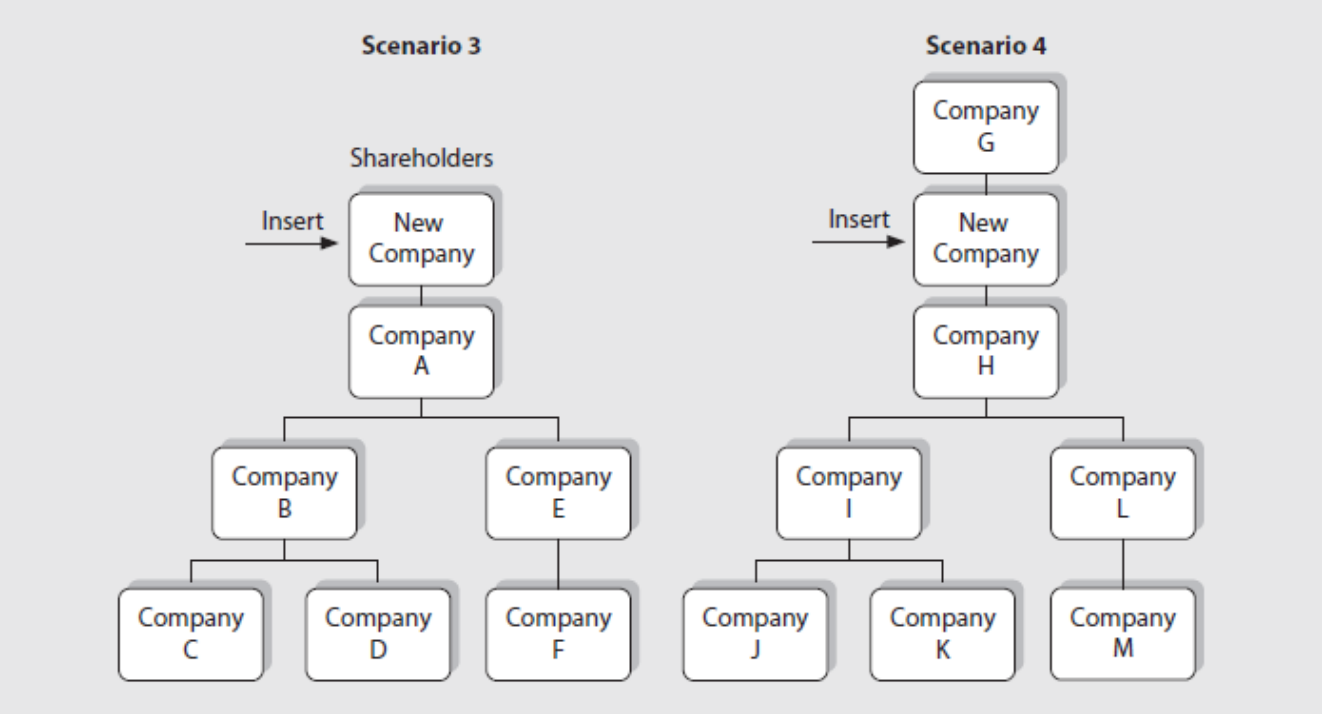


ILLUSTRATION 14.12 Accounting for cost of investment under paragraph 13 of IAS 27

The following fact pattern is assumed for Scenario 3 in Figure 14.5.

There are two shareholders, X and Y, who hold 80% and 20%, respectively in Company A. Shareholder X establishes a new company and transfers its shareholding interest in Company A into the New Company. In exchange for the investment in Company A, the new company issues its shares to Shareholder X such that it is wholly owned by Shareholder X. At the date of the group reorganization, the financial position of Company A is as follows:

	$'000	$'000 New Co's 80% share of Co A
Investment in Company B	200	
Investment in Company E	150	
Other assets	500	
Other liabilities	(150)	
Net assets	700	
Share capital	50	40
Retained earnings	470	376
Preference shares	150	120
Equity element of compound financial instrument	30	24
Total equity	700	560

Analysis

In the separate financial statements, New Company will record the following entries:

Dr Investment in Company A	560,000	
Cr Share capital		560,000
Being issuance of shares for investment in Company A		

Explanatory notes:

1. New Company (new parent) measures the cost of investment in Company A based on its share (that is, 80%) of the equity items in Company A.
2. It is assumed in this illustrative example that New Company acquires all the classes of equity instruments issued by Company A. This is not always the case as discussed next.

The International Accounting Standards Board (the Board) also clarified in the Basis for Conclusion that group reorganizations in which the new parent does not acquire all the equity instruments of the original parent may also qualify for this cost measurement basis if they satisfy the criteria set out above. For instance, the original parent may have issued both ordinary shares and preference shares that are classified as equity. The new parent issues equity instruments in exchange for only the original shares but not the preference shares. The other criteria is also met, that is, the assets and liabilities of the new group and the original group are the same immediately before and after the reorganization and the owners of the original parent before the reorganization have the same absolute and relative interests in the net assets of the original group and the new group immediately before and after the reorganization. Hence, in this case, the new parent can apply paragraph 13 of IAS 27 to measure the cost of investment in the old parent.

page 1181

As emphasized in the discussion above, the measurement guidance set out in paragraphs 13 and 14 of IAS 27 is an exception and it can only be applicable when the criteria set out in that paragraph are satisfied. In all other cases, the measurement guidance will not be available.

Generally, cost of investment in the separate financial statements for all other cases is measured based on the fair value of the consideration given up. In the event that the fair value of consideration cannot be reliably measured, the cost of investment is measured based on the fair value of the transaction, that is, the fair value of the investment acquired. The rationale for these bases is already discussed in the preceding sections.

This issue was also considered by the IFRIC in June and September 2011. The IFRIC received a request asking for clarification on whether paragraphs 13 and 14 of IAS 27 can be applied either directly or by analogy to reorganizations of groups that result in the new intermediate parent having more than one direct subsidiary in its separate financial statements.

The IFRIC concluded that the two paragraphs cannot be applied in cases where reorganizations of groups result in the new intermediate parent having more than one direct subsidiary. This is because the assets and liabilities of the new group and the original group (or original entity) are not the same before and after the reorganization. Hence, the normal basis (that is, fair value) for determining the cost of an investment in a subsidiary has to be applied to reorganizations that result in the new intermediate parent having more than one direct subsidiary. Additionally, the IFRIC also concluded that the guidance in paragraphs 13 and 14 of IAS 27 cannot be applied to reorganizations that result in the new intermediate parent having more than one direct subsidiary by analogy as the guidance is an exception to the normal basis for determining the cost of an investment in a subsidiary under paragraph 10(a) of IAS 27.

Separate Financial Statements of the Ultimate Parent Company

Generally, from the ultimate parent company's perspective (Company G in Scenario 4 of Figure 14.5 above), the group reorganization transaction has no commercial substance as there is typically no change in ownership structure before and after the transaction. For the ultimate parent company, it has merely swap its original investments for the new shares in the new parent and it still retains the same interests in absolute and relative terms after the group reorganization.

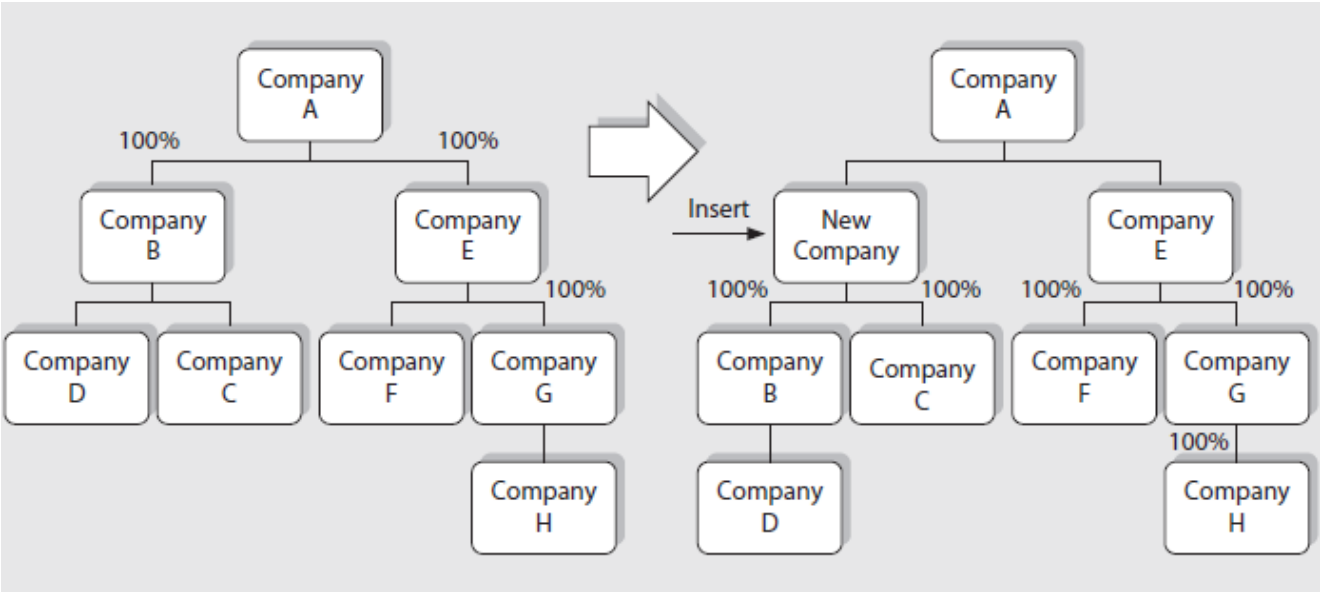
To the extent that there is no commercial substance in the transaction and the ultimate parent company retains the same absolute and relative interests after the transaction, the ultimate parent company should not account for the investment in the new parent based on the fair value of the consideration given (that is, fair value of the investments injected into the new parent). Instead, the ultimate parent company should account for the group reorganization as a share swap based on the carrying values of the investments injected into the new parent. Hence, in this instance, there would be no fair value uplift of the investments injected. In particular, the ultimate parent company will pass the following accounting entry in its separate financial statements:

Dr Investment in new parent

Cr Investments in company[14]

Being share swap – investment in new parent in exchange for investments injected in new parent

ILLUSTRATION 14.13 Accounting for reorganizations that result in the new intermediate parent having more than one direct subsidiary in its separate financial statements



Company A establishes a new company and inserts it as an intermediate holding company. In exchange for shares issued by New Company, Company A transfers its investments in Company B and Company C to New Company. As at the date of transfer, the relevant information is as follows:

	Carrying	Fair value

	values in Company A's books $'000	$'000
Investment in Company B	200	2,000
Investment in Company C	350	1,000

Analysis

In the separate financial statements of New Company, it will record the following accounting entries:

Dr Investment in Company B	2,000,000	
Dr Investment in Company C	1,000,000	
Cr Share capital		3,000,000

Being shares issued in exchange for investment in Company B and Company C

Explanatory notes:

1. The investments in Company B and C are measured based on the fair value of consideration given, that is, the shares of New Company. However, as New Company is newly established, the fair value of its shares may not be reliably measured. Consequently, New Company will measure in the investment in Company B and C based on the fair value of the two companies at the date of exchange.

In the separate financial statements of Company A, the following accounting entries will be recorded:

Dr Investment in New Company	550,000	
Cr Investment in Company B		200,000
Cr Investment in Company C		350,000

Being share swap of investments in Company B and Company C for investment in New Company

Explanatory notes:

1. As the accounting entries passed in the separate financial statements of Company A and New Company are not symmetrical, for the purposes of preparing the consolidated financial statements at Company A, these accounting entries should be reversed via consolidation entries before passing through the original consolidation entry on elimination of investment account and share capital.

CONCEPT QUESTIONS

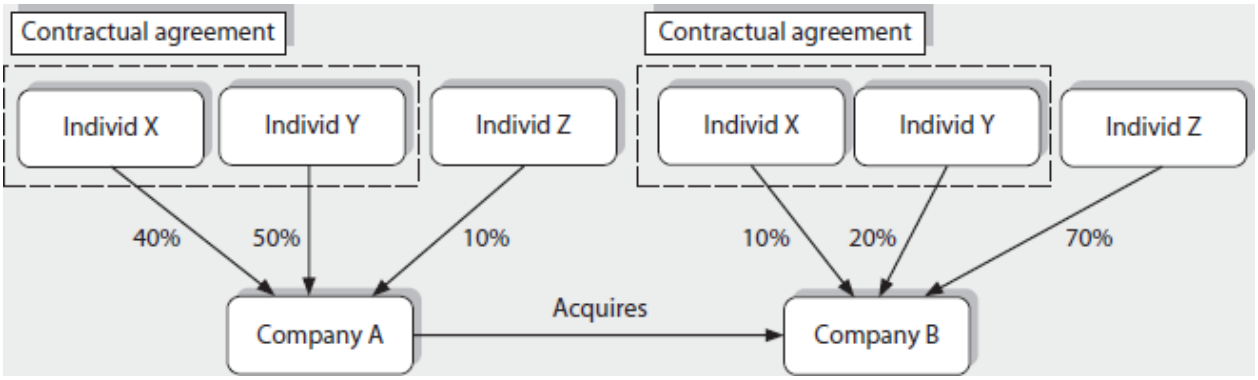
State True or False and the response for your response.

CQ14.1

If the nature of an acquisition takes the form of an asset acquisition, it will not qualify as a business acquisition under IFRS 3 or a business combination under common control.

CQ14.2

Assuming the other conditions are met, the following acquisition would qualify for business combination under common control.



CQ14.3

In analyzing whether a restructuring transaction qualifies as a business combination under common control, the intention to spin-off or dispose the restructured group post-combination in itself will result in the assessment that control is transitory.

CQ14.4

The extent of non-controlling interests in each of the combining entities before and after the business combination is not relevant to determining whether the combination involves entities under common control.

CQ14.5

In applying the predecessor method of accounting, the carrying values of the assets and liabilities of the acquiree reported in the consolidated financial statements of the ultimate parent company that has common control over the combining entities is used. Such carrying values will include the goodwill and fair value adjustments that relates to the acquiree that is recorded in the ultimate parent's consolidated financial statements.

CQ14.6

To the extent that there is no change in control arising from the corporate restructuring process, the corporate restructuring within the group should have an impact on the consolidated financial statements of the ultimate group.

CQ14.7

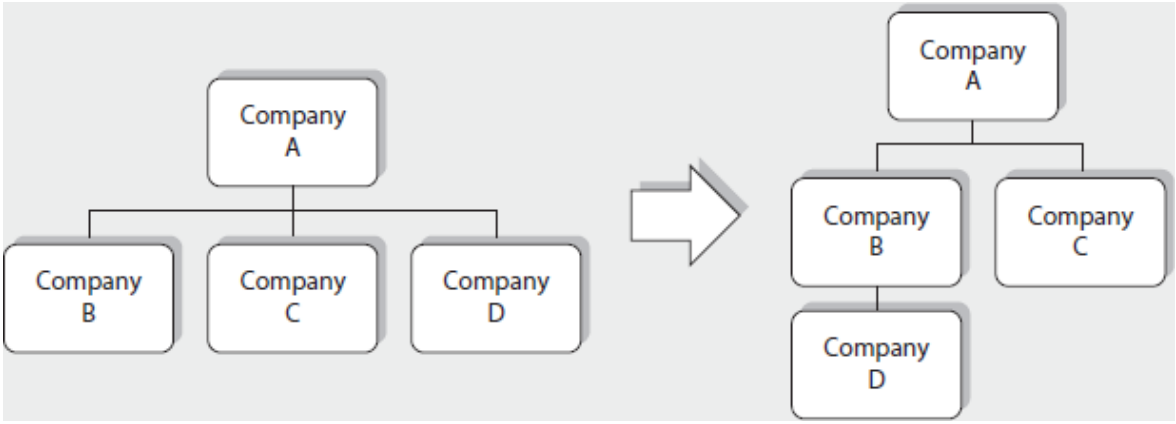
Generally, new shell entities inserted into existing group structures as part of the corporate reorganization process will meet the definition of business under IFRS 3.

CQ14.8

In the case of group organization when a new company is inserted within an existing group, in accounting for the transaction as a continuation of the existing group, the full year results of the new company and the existing group should be presented in the consolidated financial statements of the new company for both the current year and the previous financial year.

PROBLEMS

P14.1 Application of pooling of interest



Company B paid cash consideration amounting to $250,000 to Company A in exchange for 100% interests held by Company A in the paid up capital of Company D on 1 January 20x5. Company D was previously acquired by Company A three years ago and at the date of acquisition then, goodwill arising from acquisition amounted to $80,000. Intangible asset relating to customer relationship was also recognized in the consolidated financial statements of Company A. As at 1 January 20x5, the carrying value of the unamortized intangible asset amounted to $3,000 and customer relationship has remaining useful life of three years. Goodwill is not impaired as at 1 January and 31 December 20x5. All companies within the group meet the definition of business under IFRS 3. The financial year end of all the companies is 31 December and the extract of the financial statements of the combining entities stands is presented below.

page 1186

BALANCE SHEETS AS AT 31 DECEMBER 20×5

	Company B $'000	Company D $'000
Fixed assets	20,000	600
Intangible assets	35	–
Investment in Company D	250	–
Other assets	4,500	190
Other liabilities	(3,250)	(210)
Net assets	21,535	580
Share capital	200	80
Retained earnings	20,870	500
Equity component of convertible loan	15	–
Fair value reserve	450	–

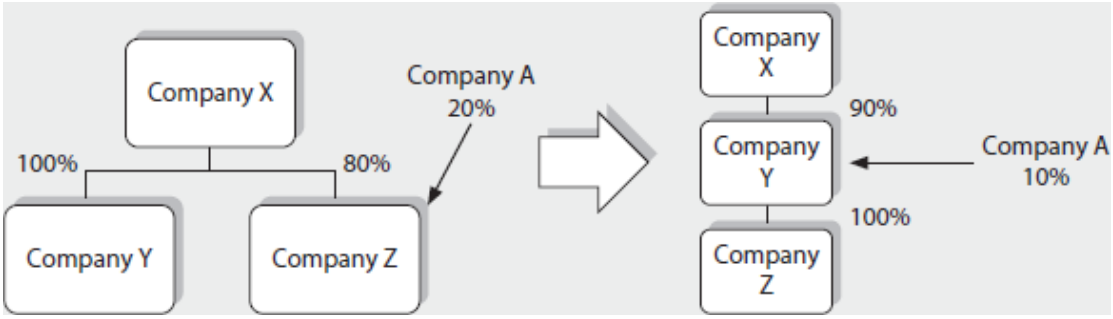
Total equity	21,535	580
PROFIT AND LOSS STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 20×5		
Revenue	3,000	200
Less: Cost of sales	(1,050)	(150)
Gross profit	1,950	50
Less:		
Selling and distribution expenses	(200)	(8)
General and administrative expenses	(350)	(3)
Other expenses	(10)	(1)
Profit for the year	1,390	38

Prepare the accounting entries and the consolidated financial statements for Company B, assuming that Company B elects to present the full year results for both the current year and prior year. Ignore the effects of taxes for this question.

page 1187

P14.2 Acquisition of NCI

Company X owns 100% of Company Y and 80% of Company Z. The remaining 20% are held by a third party, Company A. On 1 August 20x5, Company Y obtains 100% control of Company Z by issuing its shares to acquire Company X's 80% interest in Company C and Company A's 20% interest in Company Z as set out below. The amount of shares issued is based on Company Y's interest in the fair value of Company Z at the date of transfer. As a result of the issuance of shares by Company Y, Company A's interest in Company B is diluted to 90%.



As at the date of acquisition, the carrying and fair values of subsidiary Y and Z are as follows:

	Carrying values of net assets $'000	Fair value $'000
Subsidiary Y	800	2,000
Subsidiary Z	1,000	4,000

Before restructuring

	Company X's interest $'000	Company A's interest $'000

Carrying value of net assets of Subsidiary Y	800	–
Carrying value of net assets of Subsidiary Z	680	320

All companies within the group have December year ends and they meet the definition of a business.

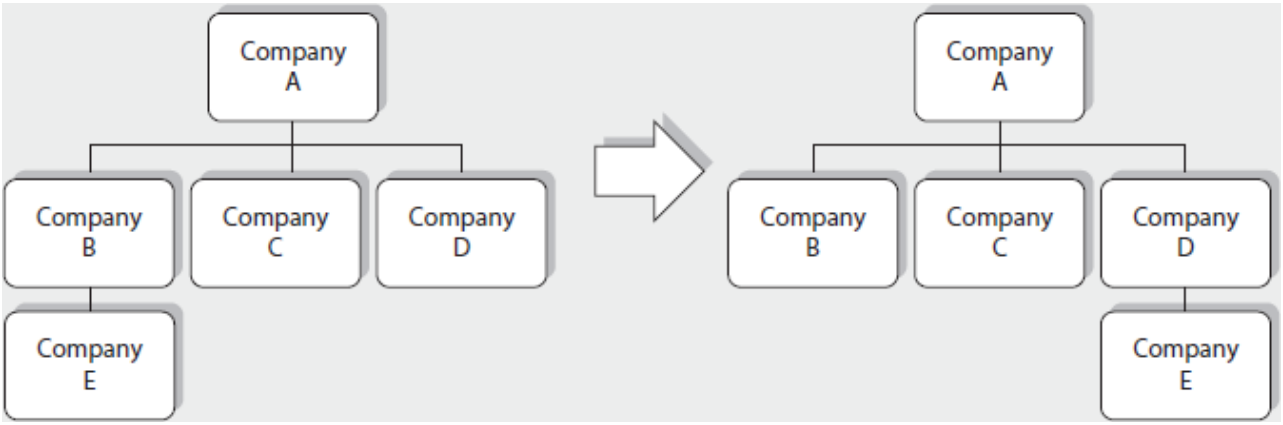
The carrying value of net assets of Company Z is represented by share capital and retained earnings of $300,000 and $700,000, respectively.

Assuming the Company Y restates its financial statements for the period before the common control transaction as if the transaction had occurred before 1 August 20x5, prepare the accounting entries for the transaction for both the separate and consolidated financial statements of Company Y.

P14.3 Group reorganizations

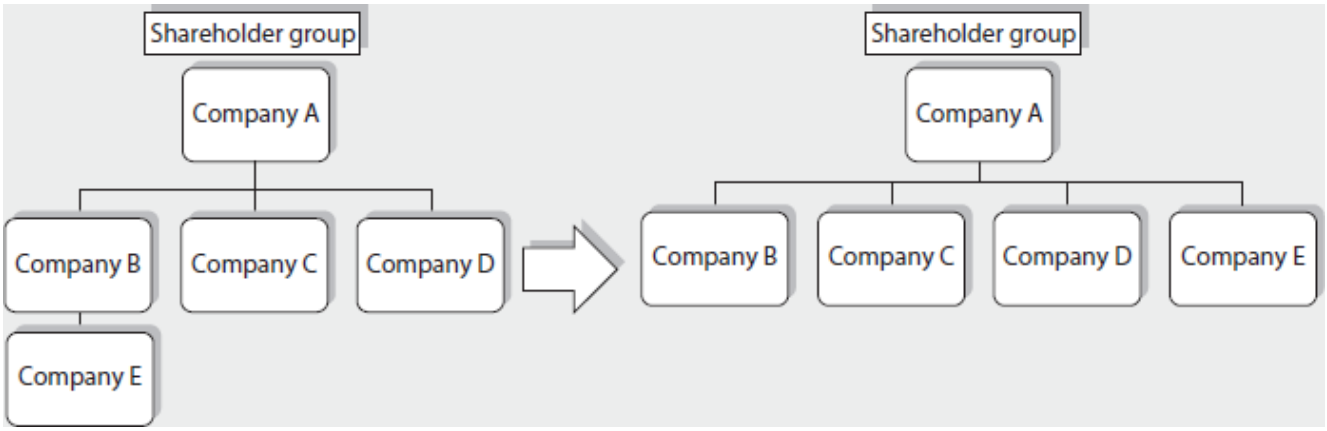
For the following scenarios below, discuss the appropriate accounting treatment. All companies are wholly owned by its immediate holding company.

Scenario 1



Discuss the appropriate accounting treatment from the perspective of Company A and Company D in both their consolidated and separate financial statements. In your discussion for Company D, explore if the accounting would have been different had Company D been (1) a new company that was incorporated and (2) an existing business.

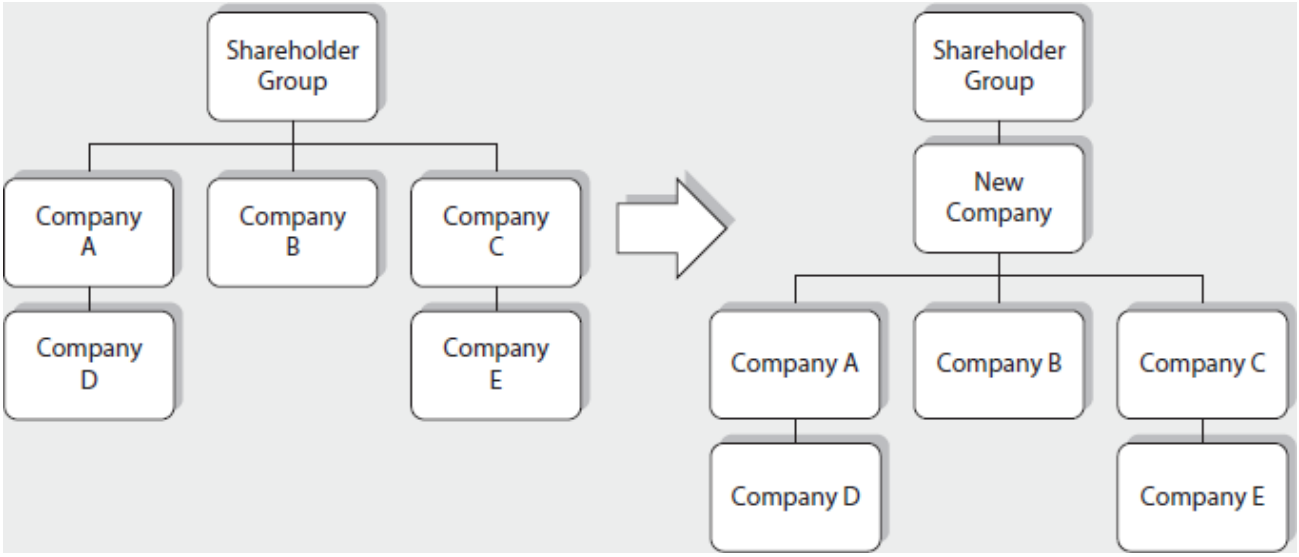
Scenario 2



Discuss the appropriate accounting treatment from the perspective of Company A and Company B in both their consolidated and separate financial statements.

page 1189

Scenario 3



Discuss the appropriate accounting treatment from the perspective of New Company in both its consolidated and separate financial statements.

page 1190

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[1] It is not necessary for the ultimate controlling party to be an entity. IFRS 3 clarifies that the ultimate controlling party may be an individual or a group of individuals.

[2] Predecessor method of accounting is also known as pooling of interests or merger accounting.

[3] In practice, the separate capital reserve is labeled as merger reserve.

[4] For the cost of investment to be measured for at fair value of the transaction, the fair value of the investment acquired must be reliably measurable.

[5] Refer to IASB® staff paper on agenda proposal for common control transactions. AP07-12-AP5C-Observers.

[6] IFRIC Update March 2006

[7] Paragraph B18 of IFRS 3 states that a "new entity formed to effect a business combination is not necessarily the acquirer" and "if a new entity is formed to issue equity interests to effect a business combination, one of the combining entities that existed before the business combination shall be identified as the acquirer".

[8] Conversely, if the criteria is met, it will qualify as a business combination under common control for which the choice of predecessor accounting or acquisition accounting is available. In this case, one of the combining entities excluding the new company will be adjudged to be the acquirer for the business combination.

[9] This is in contrast to the carrying values used in the predecessor method of accounting where the carrying values of the assets and liabilities of the acquiree used are based on the carrying values that are reported in the consolidated financial statements of the ultimate parent company, which has common control over the combining entities. This may be different from the carrying values recorded in a transferor company, which may not be the ultimate holding company.

[10] In practice, the separate capital reserve is labeled as merger or reorganization reserve.

[11] If Company O is identified to be the acquirer, acquisition accounting will be applied using the pre-combination numbers of Company O and the fair value of the identifiable assets acquired and liabilities assumed of Company P (including goodwill) at the date of acquisition. These numbers will be subsumed within the consolidated financial statements of New Company 1, which will be accounted for using continuation accounting. Essentially, the consolidated financials in New Company 1 is the consolidation numbers arising from acquisition accounting of Company O and Company P as New Company 1 is a shell company.

[12] The only two other scenarios in which IAS 27 provides guidance on how to measure cost is when a parent becomes an investment entity and when an investment entity ceases to become an investment entity.

[13] This measurement guidance does not apply to the measurement of any other assets or liabilities in the separate financial statements of either the original parent or the new parent or in the consolidated financial statements.

[14] Relates to investments injected into the new parent based on the carrying values recognized in original parent's books.

CHAPTER

15

DERIVATIVE CONTRACTS ON OWN EQUITY

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- **LO1** Understand the rationale for entering into derivative contracts on own equity;
- **LO2** Differentiate between the different types of derivative contracts that can be entered into and the effects of each type of derivative contracts;
- **LO3** Understand the accounting treatment in respect of these derivatives in both the separate and consolidated financial statements;
- **LO4** Appreciate the various factors to be considered to determining whether the derivatives accord the holder with ownership interests over the shares held by the non-controlling interests; and
- **LO5** Determine the accounting impact of derivatives written on own equity in complex group structures.

INTRODUCTION

Post-acquisition, a parent with a controlling stake in a subsidiary may wish to acquire the remaining shares held by the non-controlling interests such that the subsidiary becomes wholly-owned. In a separate scenario, a selling shareholder of a business may wish to retain some equity interest in the company but yet retain the right to sell that interest to the acquirer at a subsequent date when the selling shareholder wishes to exit the business.

There are a number of reasons why the parent and the selling shareholder may behave in this fashion. In the first scenario, the minority owners of the subsidiary may possess certain entity specific skills and/or knowledge which the parent lacks. By allowing them to retain an equity interest in the business, these minority owners will continue to run and participate in the future performance of the business. Consequently, they have a vested interest to ensure the continued success of the business. Once the parent has acquired the necessary skills set or knowledge, they may want to have the right to buy over the shares held by these minority owners.

In the second scenario, the selling shareholder may be the founder of the business. He or she may not wish to completely sell out the interests in the business immediately. The reasons for doing so could be commercial or even personal in nature. Notwithstanding this, the selling shareholder may still wish to preserve an exit route where the remaining interests can be sold to the parent eventually.

To achieve this, the parent and the minority owners may enter into contractual arrangements in which the parent may purchase or write derivatives over the shares held by the non-controlling interests. Different types of derivatives can be entered into and this will be explored in the next section.

TYPICAL CHARACTERISTICS AND TYPES OF DERIVATIVES ON SHARES HELD BY NON-CONTROLLING INTERESTS

In practice, different types of derivatives can be utilized. The derivative contracts entered into with the non-controlling interests may take place during the acquisition of the business by the acquirer (i.e. as part of the business combination) or it may be a separate standalone transaction entered into subsequent to the business combination (i.e.

it is not part of a business combination but a freestanding derivative contract entered into with non-controlling interest).

With regard to the terms of the derivative contracts, the exercise price could either be a fixed amount or fair value at the exercise date. In some instances, for the determination of the exercise price, the derivative contracts may include complex formula that is intended to calculate the fair value of the underlying shares at the exercise date (e.g. earnings multiple or EBITDA). Whether the exercise price is a fixed price or at fair value is significant as it assists in the determination of whether the risks and rewards associated with the underlying shares (which is the subject of the derivative) is transferred to the acquirer/parent. We will discuss this in more details below.

Generally, derivative contracts on the shares held by non-controlling interests tend to be gross settled. In other words, on the exercise date, the counterparties to the derivative contracts will undertake physical settlement in which the non-controlling interests will deliver the underlying shares and the parent will transfer cash or other financial assets in exchange for those shares. However, it is not uncommon for the derivative contract to be settled by transferring a fixed or variable number of the parent's own shares instead of cash and/or other financial assets. The implications of such settlement mode will be discussed in the subsequent section below.

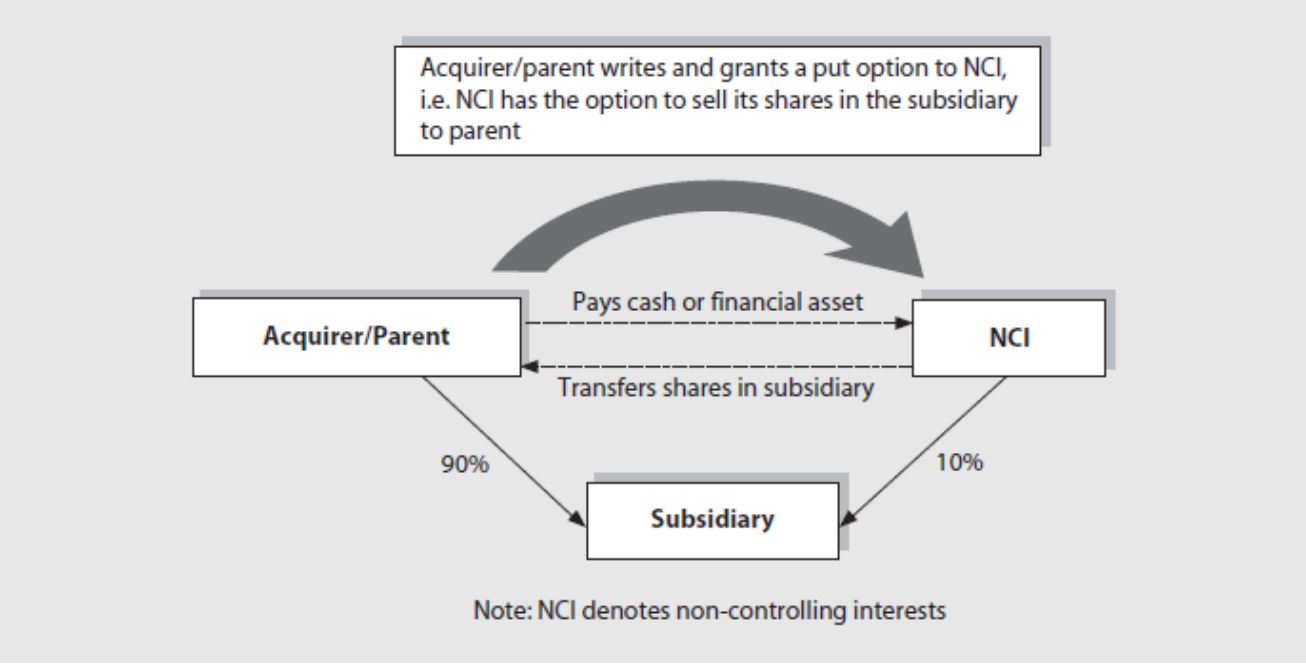
page 1193

Next, we will explore the different types of derivatives that can be purchased or written on the shares held by non-controlling interests in practice.

Put Options

In practice, one of the most common approach is for the acquirer/parent to write a put option on the shares held by the non-controlling interest in the subsidiary (see Figure 15.1). Non-controlling interest who hold the put option has the right but not the obligation to sell (i.e. put) its shares in the subsidiary to the parent at the exercise price stated in the option agreement. The acquirer/parent has the obligation to purchase the shares at the exercise price when the put option is exercised by the non-controlling interests.

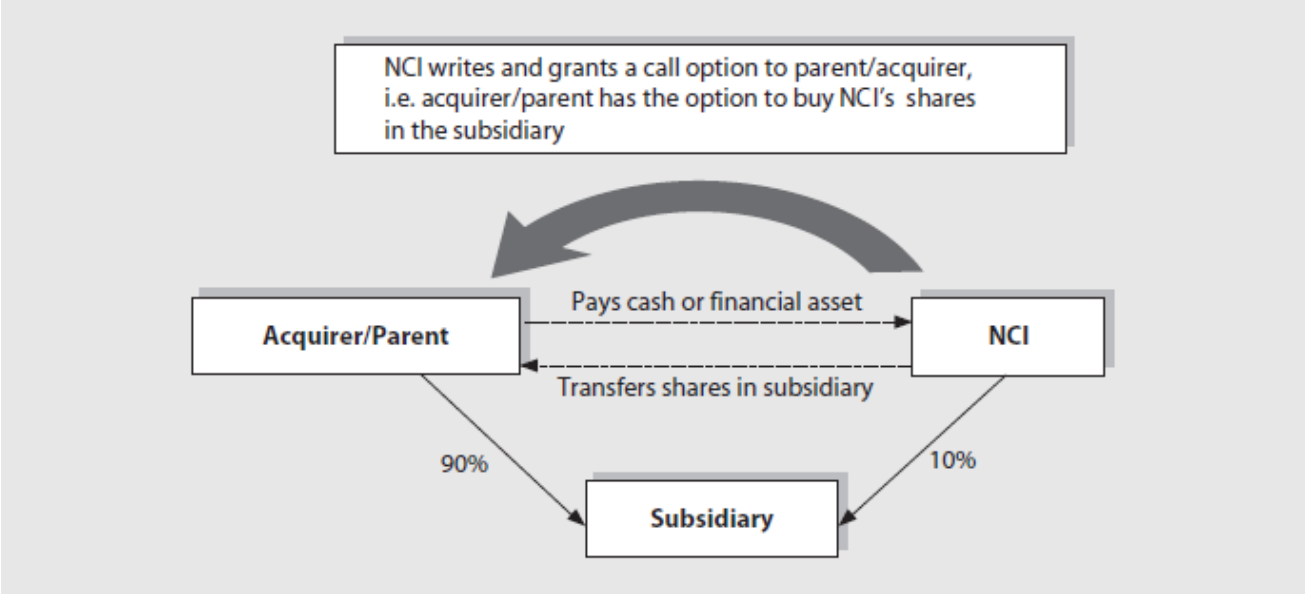
FIGURE 15.1 Put options on shares held by non-controlling interests



Call Options

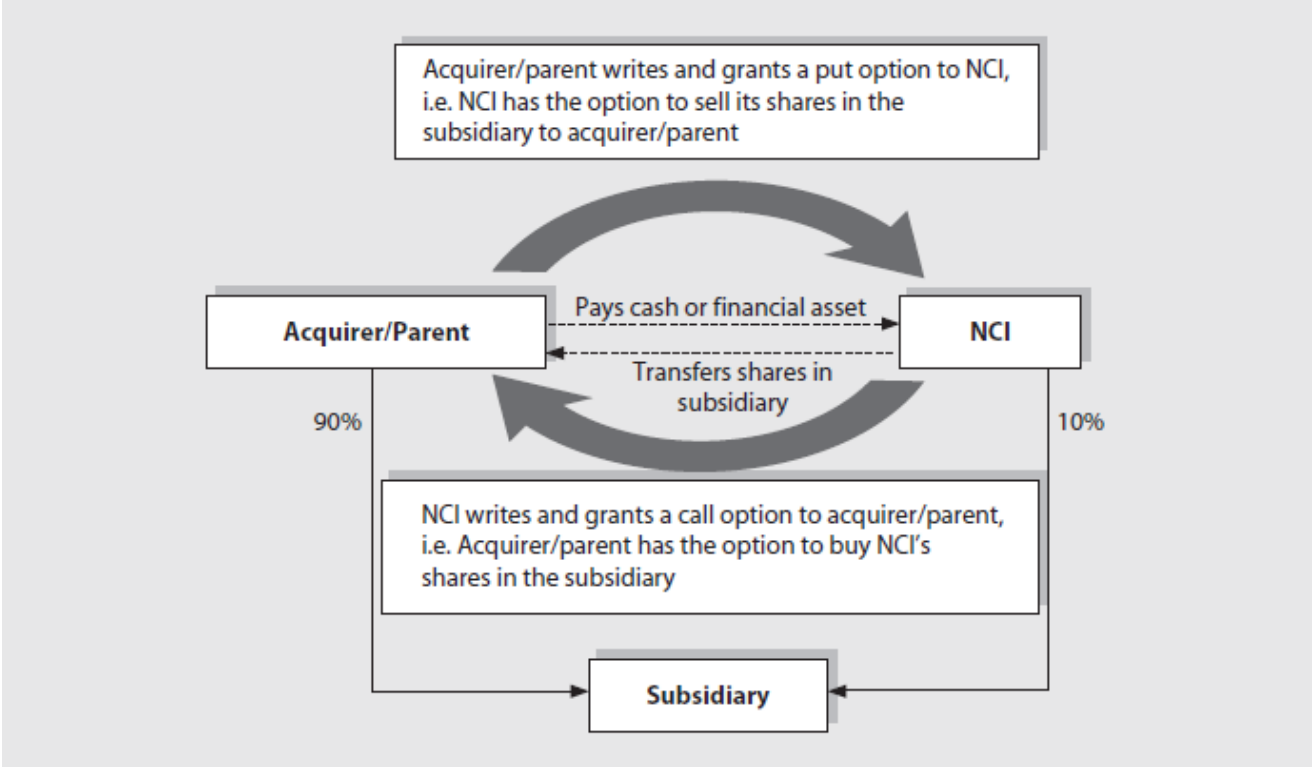
Alternatively, the non-controlling interest may write and grant the acquirer/parent a call option over the shares held by the non-controlling interest in the subsidiary (see Figure 15.2). From the perspective of the acquirer/parent, the acquirer/parent as a holder of the call option, has the right but not the obligation to buy the shares held by the non-controlling interests in the subsidiary. Upon exercise of the call option by the parent, the non-controlling interest has the obligation to sell the shares in the subsidiary at the exercise price stated in the option agreement.

FIGURE 15.2 Call options on shares held by non-controlling interests



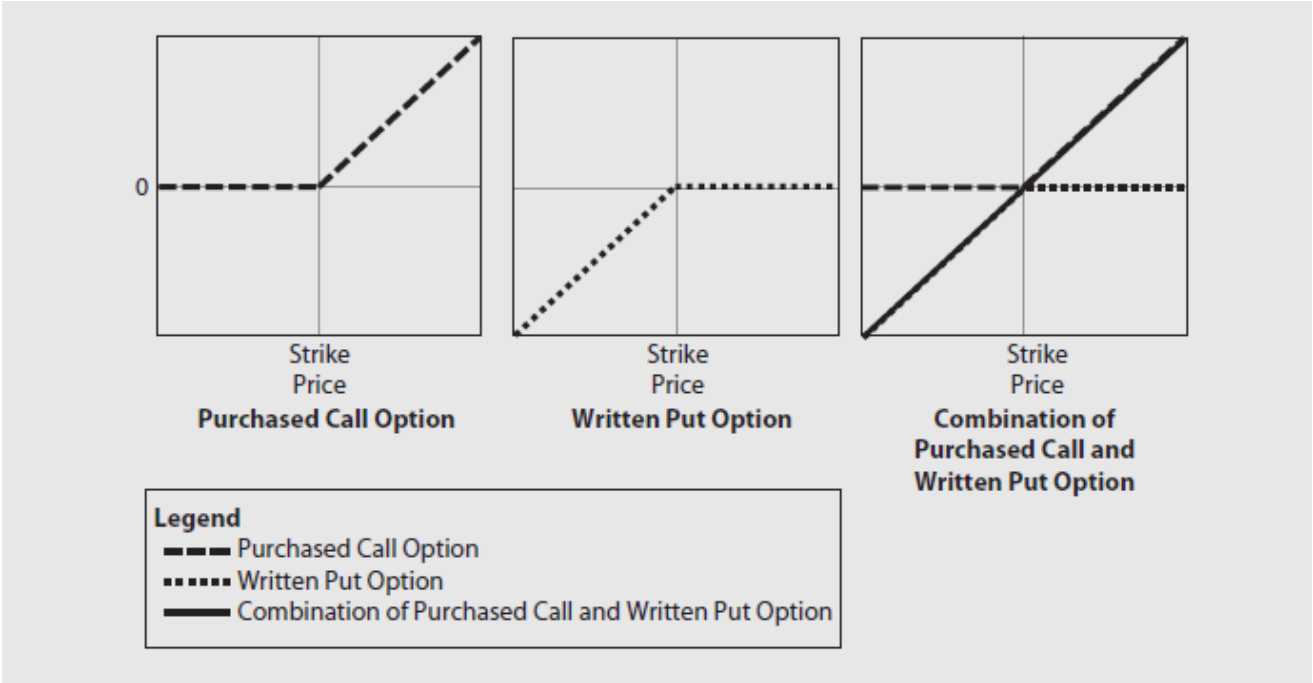
Another common approach in practice is for the acquirer/parent to simultaneously write a put option and purchase a call option over the shares held by the non-controlling interests in the subsidiary (see Figure 15.3). As both derivatives take the form of option contracts, the holder of the option (i.e. non-controlling interest for the put option and acquirer/parent for the call option) has the right but not the obligation to exercise the option. The terms to the written put and purchased call options such as the exercise price and exercise date may or may not be identical.

FIGURE 15.3 Combination of call and put options on shares held by non-controlling interests



If the terms are identical, the call and put option effectively mirrors each other. As a result of this, the combination of this set of derivatives is in substance economically similar to a forward contract. This can be seen from the payoffs diagrams for the derivatives in Figure 15.4. Assuming that these are a pair of European options and the exercise price is a fixed amount, if the fair value of the shares of the subsidiary at the exercise date is higher than the exercise price, the parent will have the incentive to exercise the call option. Conversely, when the fair value of the shares of the subsidiary is lower than the exercise price, the non-controlling interests will have the incentive to exercise the put option. Whilst similar economically, the combination of the call and put options does not represent a forward contract. This is because there remains a possibility that the fair value of the subsidiary at the exercise date may be equivalent to the exercise price. When this happens, from an economic perspective, both parties may not be motivated to exercise their options.

FIGURE 15.4 Payoff profiles for put and call options

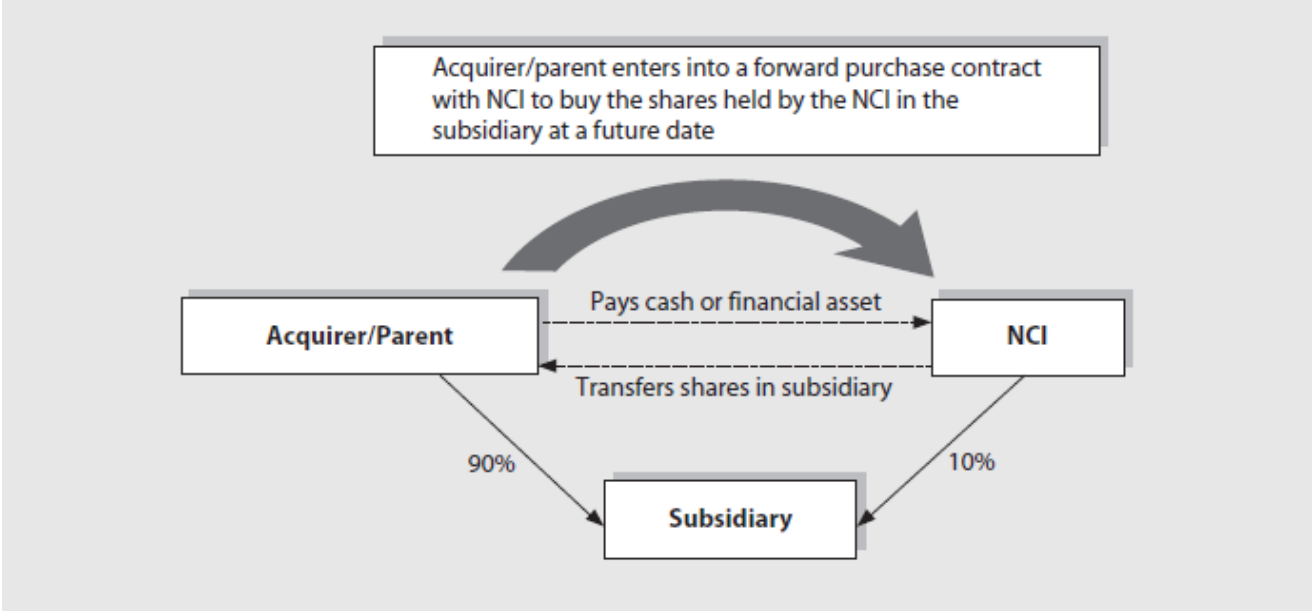


Typically, for identical call and put options, the option agreements are structured such that the other option lapses when one of the options in the agreement is exercised. For instance, if the parent/acquirer exercises the call option, the put option will lapse on the same date.

Forward Purchase Contracts

Under this approach, the acquirer/parent enters into a forward purchase contract with the non-controlling interest to purchase the shares held by the non-controlling interest in the subsidiary at the forward price on a future date (see Figure 15.5). In contrast to the options described above, given that this is a forward purchase contract, both the acquirer/parent and the non-controlling interest have the obligation to buy and sell the underlying shares in the subsidiary at the agreed price on the specified date as set out in the forward contract.

FIGURE 15.5 Forward purchase contracts on shares held by non-controlling interests



ACCOUNTING FOR DERIVATIVES WRITTEN ON SHARES HELD BY NON-CONTROLLING INTERESTS

IFRS 3 is silent on how such derivative contracts entered into as part of a business combination should be accounted for. Similarly, for standalone contracts that are entered into after control has been obtained, there is very limited or no guidance in other IFRS Standards. Consequently, entities will have to consider the interplay between the requirements in IFRS 10 *Consolidated Financial Statements*, IFRS 9 *Financial Instruments* and IAS 32 *Financial Instruments: Presentation* in developing an appropriate accounting policy.

In the separate financial statements

From the perspective of the parent/acquirer in the separate financial statements, these contracts either require the parent/acquirer to buy (in the case of forward purchase contracts, written put options and put option in a pair of identical purchased call and written put options) or provide the parent/acquirer with the right but not the obligation to buy (in the case of purchased call options and call option in a pair of identical purchased call and written put options) the shares held by the other minority shareholders in the subsidiary in exchange for cash or other financial assets at a future date. Generally, these contracts require little or no initial investment. As the subsidiary is a separate standalone entity, i.e. a third party in the separate financial statements of the parent, derivatives over the equity instruments of a third party will not qualify as contracts over own equity instruments in the parent's separate financial statements.

Instead, these contracts meet the definition of a derivative under IFRS 9. Although these contracts are typically gross-settled via physical delivery of the underlying items on the exercise date as discussed above, such contracts are included within the definition of a derivative.

Specifically, paragraph 2.1(a) of IFRS 9 requires entities to apply this IFRS Standard to derivatives on interests in a subsidiary unless the derivative meets the definition of an equity instrument[1] of the entity in IAS 32. Hence, the

acquirer/parent will account for these derivatives as financial assets or financial liabilities in its separate financial statements. The derivatives are measured at fair value on initial recognition and on subsequent measurement in accordance with paragraph 5.1.1 and 5.2.1 of IFRS 9 respectively.

In the consolidated financial statements

From the perspective of the group, non-controlling interests are considered equity and accordingly, they are presented within equity, separately from the equity of the owners of the parent in the consolidated financial statements (IFRS 10 paragraph 22).

Consequently, derivatives written on the shares held by non-controlling interests constitute contracts to purchase the group's own equity instruments in the consolidated financial statements. For derivative contracts that results in an obligation to buy own equity, paragraph 23 of IAS 32 requires the entity to recognize a financial liability based on the present value of the redemption amount at the group level[2]. The IFRS Standard states that this is the case even if the contract itself is an equity instrument[3] or when the obligation to purchase the own equity instruments is predicated on the counterparty exercising a right to redeem.

When the financial liability is recognized initially at the present value of the redemption amount, IAS 32 requires the amount to be reclassified from equity. However, the IFRS Standard is silent as to which component of equity that amount should be reclassified from, i.e. where the "debit" entry should be recorded. In addition, there is also the associated question of whether non-controlling interests, the shares of which are the subject of the derivatives should continue to be recognized or be de-recognized.

Generally, in practice, the accounting treatment is dependent on whether the derivative contracts accord the acquirer/parent with present access to the returns associated with an ownership interest of the underlying shares in the subsidiary held by the non-controlling interests. Further discussion will be devoted in the next section on the factors to be considered in the analysis. Current practice is generally consistent when the acquirer/parent has in-substance, present ownership of the shares held by the non-controlling interests. However, when the parent/acquirer does not in-substance has present ownership to the underlying shares, there is diversity in practice on how the debit entry is accounted for. This is primarily due to the fact that there are conflicts in existing IFRS Standards. We will further discuss the sources of the conflict and the acceptable accounting treatment in subsequent sections.

As discussed above, the financial liability (i.e. the credit entry) is measured initially at the present value of the redemption amount. In other words, it is measured on a gross basis based on the present value of the forward purchase price or option exercise price, depending on the type of derivative entered into as discussed above. This is in contrast to the measurement basis in the separate financial statements where the derivatives are measured on a net basis as a financial asset or financial liability in accordance with IFRS 9. The rationale for this is because the Board is of the view that when an entity has an obligation to purchase its own shares for cash, that obligation establishes a maturity date for the shares that are subject to the contract. Therefore, when the entity assumes the obligation, those shares cease to be equity instruments. This obligation in the form of a financial liability for the present value of the share redemption amount is consistent with the accounting treatment of shares that provide for mandatory redemption by the entity (BC 11 to IAS 32).

For purpose of subsequent measurement, paragraph 23 of IAS 32 requires the financial liability to be accounted for in accordance with IFRS 9. In other words, the financial liability is measured at amortized cost using the effective interest method. Paragraph 5.7.2 of IFRS 9 requires the changes in the measurement of the financial liability to be recognized in the profit or loss.

Analysis of the Risks and Rewards Associated with the Derivatives

When there are potential voting rights[4] arising from convertible instruments, options and forward contracts in an investee, when assessing control, paragraph B47 of IFRS 10 requires the investor to consider these potential voting rights as well as the potential voting rights held by other parties to determine if the investor has power to affect the variable returns from its investee.

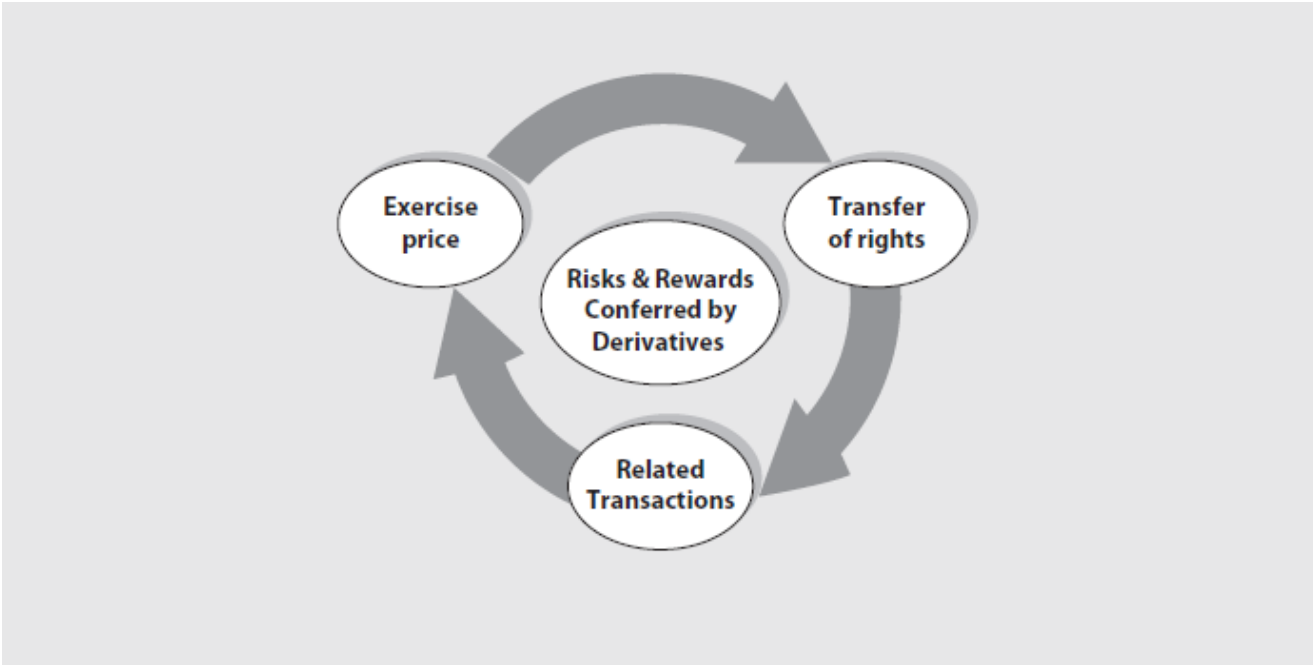
When such potential voting rights exist, in the preparation of consolidated financial statements, paragraphs B89 and B90 of IFRS 10 require the proportion of profit or loss and changes in equity allocated to the parent and non-controlling interests to be calculated solely on the basis of existing ownership interests. The exception to this principle

is when the entity has, in substance, an existing ownership interest in those shares which are the subject matter of the potential voting rights. This could be due to the result of a transaction that currently gives the entity access to the returns associated with an ownership interest. In such a case, the proportion allocated to the parent and non-controlling interests would include the eventual exercise of those potential voting rights that currently give the parent access to the returns. Paragraph B91 of IFRS 10 further emphasizes that IFRS 9 does not apply to instruments containing potential voting rights that in substance currently give access to the returns associated with an ownership interest in a subsidiary.

Hence, in cases where derivative contracts on the shares held by the non-controlling interests are entered into as part of a business combination transaction or outside a business combination transaction after control is obtained, the acquirer/parent should first assess if it has, in substance, present access to the returns associated with an ownership interest in the shares arising from the derivative contracts entered into with the non-controlling interests.

Significant judgement is involved in assessing whether the acquirer/parent obtains the risks and rewards of the ownership interest in the underlying shares during the contract period. This entails a detailed analysis of the terms and conditions in the derivative contracts on such shares. In assessing whether these derivative contracts provide the acquirer/parent with present access to the returns associated with an ownership interest of the underlying shares in the subsidiary, the factors[5] that should be considered are set out as shown in Figure 15.6.

FIGURE 15.6 Factors to consider whether derivatives accord parent with ownership interests over the underlying shares



1. **Exercise price in the derivative contract**

   In practice, the exercise price in the derivative contracts is typically either a fixed amount or at fair value at the date of exercise. Generally, when the exercise price is pegged at the fair value of the subsidiary at the date of exercise, the risks and rewards associated with the ownership of the underlying shares of the subsidiary remain with the non-controlling interests until the contract is settled. In other words, the risks and rewards of ownership of the underlying shares are not transferred to the acquirer/parent. This is because the non-controlling interest is exposed to future changes (both increase and decrease) in the fair value of the subsidiary up to the exercise date. Conversely, when the exercise price is a fixed amount, the risks and rewards associated with the ownership of the underlying shares is effectively transferred to the acquirer/parent. This is because since the

page 1199

amount that the acquirer/parent has to pay is fixed, the acquirer/parent gets full exposure to future changes in the fair value of the subsidiary in excess or below the fixed exercise price.

In some cases, the exercise price is calculated based on a formula (e.g. multiples of future periods EBITDA). This may or may not be a proxy for fair value at the exercise date. In addition, there could also be circumstances in which the exercise price in the call option and put option are not on identical terms (i.e. asymmetrical call and put options). In these scenarios, the analysis becomes more complex and proper care must be taken to assess if the risks and rewards of ownership of the underlying shares are transferred to the acquirer/parent.

2. **Transfer of rights associated with ownership of the shares**

Ownership of shares confer rights such as the right to receive dividends when declared and voting rights to their owners. In the assessment of whether the derivatives on the shares of subsidiary accord the acquirer/parent with present access to the returns associated with the ownership interest of those underlying shares, due consideration must be given whether the rights on the underlying shares are transferred to the acquirer/parent as a result of the derivative contracts.

If non-controlling interest continues to retain such rights, it means that the returns associated with the ownership of the subsidiary's shares held by the non-controlling interests are not transferred to the acquirer/parent. For instance, during the outstanding period of the derivative contract, the non-controlling interest's voting rights is not restricted in any way and there is no dividend payment restriction imposed on the shares held by the non-controlling interests during the contract period. Conversely, if the acquirer/parent and the non-controlling interests agreed contractually that dividends paid to the non-controlling interests are transferred to the parent, the rights on the underlying shares held by the non-controlling interests are effectively transferred to the acquirer/parent.

page 1200

3. **Related transactions**

Due consideration should also be given to whether related transactions are entered as part of the arrangement. For instance, when the acquirer/parent writes a put option on the shares held by the non-controlling interests, does it also simultaneously purchase/obtain a call option with identical terms? The intent of doing so could be to engineer the economic effects of a forward purchase contract.

As discussed above, given the effect of the combination of a symmetrical call and put option is economically similar to a forward contract, the probability that either the acquirer/parent or the non-controlling interests exercising the option is virtually certain as long as the fair value of the subsidiary is not equivalent to the exercise price at the date of exercise. This could be preferable to a standalone written put option where the right to exercise lies only with the non-controlling interests.

ACCOUNTING WHEN DERIVATIVES PROVIDE CURRENT ACCESS TO RETURNS ASSOCIATED WITH SHARES HELD BY NON-CONTROLLING INTERESTS

When the derivatives on the shares held by the non-controlling interests provide the acquirer/parent with, in substance, present ownership interest in those shares and thereby giving the acquirer/parent current access to the returns associated with an ownership interest, paragraph B90 of IFRS 10 requires the proportion allocated to the acquirer/parent and non-controlling interests to take into account the eventual exercise of those derivatives that currently give the acquirer/parent access to the returns in the consolidated financial statements.

What this essentially means is that if all the shares held by the non-controlling interests are the subject matter of the derivatives and the returns associated with ownership of those shares are transferred to the acquirer/parent in substance, the acquirer/parent has effectively acquired 100% in the acquiree/subsidiary when the derivative contracts were entered.

Initial Recognition

Hence, if these derivatives were entered into as part of a business combination transaction, the acquirer has in-substance acquired 100% of the acquiree at the date of acquisition. In other words, no non-controlling interests will be recognized in the consolidated financial statements. In accordance with paragraph 23 of IAS 32, the acquirer recognizes a financial liability measured at the present value of the redemption amount and that financial liability is reclassified from equity. In such cases, the reclassification of the financial liability (i.e. the debit entry) is considered to be from non-controlling interests, thereby resulting in non-controlling interests not being recognized at the date of acquisition. For the purpose of calculating the goodwill arising from the business combination, the financial liability is included as part of the consideration transferred by the acquirer. Any subsequent adjustment made to the redemption amount (for e.g. due to future anticipated increases in EBITDA upon which the exercise price is calculated) is accounted for in accordance with paragraph B5.4.6[6] of IFRS 9.

On the other hand, if the derivatives were entered into with the non-controlling interest after the parent has obtained control of the subsidiary, the transaction is one where the parent has effectively acquired the non-controlling interest at the date where the derivative contracts were entered into. In other words, it is an equity transaction with non-controlling interests. The carrying value of non-controlling interests will be de-recognized at the date of the transaction and the parent will recognize a financial liability based on the present value of the redemption amount. Similarly, the reclassification of the financial liability from equity is deemed to be from the non-controlling interest as discussed in the preceding paragraph. Any difference between the fair value of the consideration paid (which in this case is the present value of redemption price) and the carrying value of the non-controlling interest de-recognized is recognized directly in equity and attributed to the owners of the parent in accordance with paragraph B96 of IFRS 10.

Subsequent Measurement

For purposes of subsequent measurement, in both cases above, the financial liability is measured at amortized cost using the effective interest method in accordance with IFRS 9. Paragraph 5.7.2 of IFRS 9 requires the changes in the measurement of the financial liability to be recognized in the profit or loss.

In the preparation of the consolidated financial statements, the profit or loss and each component of other comprehensive income of the subsidiary are allocated to the acquirer/parent in full given that the acquirer/parent has effectively acquired 100% of the subsidiary. Dividends declared and paid by the subsidiary to the parent are eliminated. Given that non-controlling interests are no longer recognized, dividends declared and paid to this group of "other shareholders" is recognized as an expense in the consolidated financial statements. The exception to this is when the dividends paid to the "other shareholders" represent a repayment of the financial liability[7]. In this instance, the dividend payment will be eliminated against the financial liability.

Date of Settlement

On the date of settlement, the financial liability is de-recognized when cash or other financial asset is paid to the non-controlling interests in exchange for the underlying shares.

However, if the derivative takes the form of option contract (such as purchased call option, written put option or symmetrical purchased call and written put option) and that option remains unexercised and expires at the exercise date, effectively a partial disposal of interest in the subsidiary without loss of control has taken place from the perspective of the parent. The parent has, in substance, sold the shares back to the non-controlling interest, i.e. it is an equity transaction. The consideration received by the parent in exchange for the disposal of partial interest is effectively the extinguishment of the carrying value of the financial liability on the date when the option expires. Accordingly, non-controlling interest will be recognized based on its proportionate share of net assets in the subsidiary on the day when the options lapse. This would include the non-controlling interest's share of goodwill in the subsidiary at the date of its initial acquisition if the accounting policy of the entity is to recognize non-controlling

interests at its fair value at the date of acquisition. The carrying value of the financial liability will correspondingly be de-recognized. The difference, if any is recognized directly in equity and attributed to the owners of the parent in accordance with paragraph B96 of IFRS 10. No adjustment is made to the goodwill that was previously recognized as part of the business combination.

The accounting treatment discussed above will apply regardless of the type of derivatives entered into with non-controlling interests as long as the derivatives provide the acquirer/parent with current access to the returns associated with an ownership interest of the underlying shares held by non-controlling interests.

The following examples illustrate the accounting effects in 2 scenarios:

1. When the derivative contract provides current access to returns on shares held by non-controlling interests in a business combination; and
2. When the derivative contract is entered into after control has been obtained.

ILLUSTRATION 15.1A Accounting when derivatives entered into as part of the business combination transaction provide current access to returns

On 1 January 20x17, Company P acquires 80% of Company S for cash consideration amounting to $2.85 million. The fair value of the identifiable net assets of Company S as at 1 January 20x17 is $2.6 million. In connection with the acquisition of Company S, Company P and the non-controlling interests entered into an agreement in which Company P wrote a put option over the 20% shares held by the non-controlling interests. The put option can be exercised by the non-controlling interests at any point in time from 31 December 20x17 to 31 December 20x18 and it can only be settled via physical delivery. Upon exercise of the put option by the non-controlling interests, Company P is required to purchase the entire 20% shares held by the non-controlling interests for a fixed price of $750,000.

The following table sets out the other salient details in connection with the illustration.

	$
Fixed price to be paid upon exercise of put option	750,000
Present value of exercise price on 1 January 20x17	620,000
Present value of exercise price on 31 December 20x17	682,000
Present value of exercise price on 31 January 20x18	750,000
Fair value of put option on 1 January 20x17	(5,000)
Fair value of put option on 31 December 20x17	(4,000)
Fair value of put option on 31 December 20x18	(3,000)
Subsidiary S's profit after tax for the year ended 31 December 20x17	800,000
Subsidiary S's profit after tax for the year ended 31 December 20x18	1,200,000
Dividends paid by subsidiary S for the year ended 31 December	

20x17	
- Company P's share	64,000
- Non-controlling interests' share	16,000
Dividends paid by subsidiary S for the year ended 31 December 20x18	
- Company P's share	96,000
- Non-controlling interests' share	24,000

For the purpose of this illustration, the terms in the put option agreement do not allow any adjustment to be made to the exercise price when dividend is paid by Company S. The right to receive dividends and voting rights are also transferred to Company P under the put option agreement. It is further assumed that the excess of fair value over the net carrying value of the assets in Company S at the date of acquisition relates to an intangible asset with indefinite useful life. There is no impact on the post-acquisition profits for the group as the intangible asset with indefinite useful life remains unimpaired for both 20x17 and 20x18.

On 31 December 20x18, the non-controlling shareholders exercised the written put option. Taxes are ignored for the purpose of this illustration. Company P has determined the appropriate discount rate for the redemption liability to be 10%. The financial year of Company P and Company S is December.

Analysis

Evaluating whether Derivatives Provide Current Access to Returns on the Shares Held by Non-Controlling Interests

Based on an analysis of the terms and conditions on the written put option, Company P assessed that it has, in substance, an existing ownership interest over the shares held by the non-controlling shareholders as the written put option has a fixed exercise price. In other words, the risks and rewards associated with the shares are transferred from the non-controlling shareholders to Company P. This is because Company P, in writing a fixed price put option has exposed itself to the future changes in the fair value of the subsidiary up to the date where the options are exercised. In addition, Company P has obtained the right to receive dividends as well as voting rights in Company S under the put option agreement. Consequently, Company P has effectively acquired 100% of the subsidiary at the date of acquisition.

Calculate the goodwill arising from the transaction

	$
Fair value of consideration (Note 1)	3,470,000
Less: Fair value of net identifiable assets	(2,600,000)
Goodwill	870,000

Note 1: Fair value of consideration comprises of:

	$
Cash consideration	2,850,000
Present value of redemption liability on 1 January 20x17	620,000

Fair value of consideration		3,470,000

Fair value of consideration includes the present value of the redemption liability as at the date of acquisition as Company P has effectively acquired 100% of Company S at the date of acquisition through the cash consideration and written put option.

Prepare the accounting entries

In the separate financial statements of Company P

		$	$
1 Jan 20x17	Dr Investment in subsidiary – Company S	2,855,000	
	Cr Cash		2,850,000
	Cr Put option – derivative liability		5,000
	Being investment in Company S		page 1204
31 Dec 20x17	Dr Cash	64,000	
	Cr Dividend income		64,000
	Being dividend income received		
31 Dec 20x17	Dr Put option – derivative liability	1,000	
	Cr Fair value gain in put option (PL)		1,000
	Being fair value changes in derivative liability		
31 Dec 20x18	Dr Cash	96,000	
	Cr Dividend income		96,000
	Being dividend income received		
	Dr Put option – derivative liability	1,000	
	Cr Fair value gain in put option (PL)		1,000
	Being fair value changes in derivative liability		
	Upon exercise of put option		
	Dr Investment in subsidiary – Company S	747,000	
	Dr Put option – derivative liability	3,000	
	Cr Cash		750,000
	Being cash payment on exercise of put option by non-controlling interests		

	Alternatively if:		
31 Dec 20x18	Put option lapses unexercised		
	Dr Put option – derivative liability	3,000	
	Cr Fair value gain in put option (PL)		3,000
	Being lapsing of unexercised put option		

In the consolidated financial statements of Company P

		$	$
1 Jan 20x17	Dr Put option – derivative liability	5,000	
	Cr Investment in subsidiary – Company S		5,000
	Being reversal of derivative liability recognized in the separate financial statements		
	Dr Share capital and reserves– Company S }	2,600,000	
	Dr Intangible asset }		
	Dr Goodwill	870,000	
	Cr Investment in subsidiary – Company S		2,850,000
	Cr Redemption liability – financial liability		620,000
	Being elimination entries and recognition of redemption liability at group level		
31 Dec 20x17	Dr Dividend income	64,000	
	Dr Profit or loss – dividends paid to NCI	16,000	
	Cr Dividends paid		80,000
	Being elimination of interco dividends		

		$	$	
31 Dec 20x17	Dr Fair value gain in put option (PL)	1,000		(Note 1)
	Cr Put option – derivative liability.....		1,000	
	Being reversal of fair value changes in derivative liability in the separate financial statements			
	Dr Finance cost	62,000		(Note 2)
	Cr Redemption liability – financial liability.....		62,000	
	Being accretion of interest on redemption liability			
31 Dec 20x18	Dr Dividend income	96,000		
	Dr Profit or loss – Dividends paid to NCI.....	24,000		
	Cr Dividends paid		120,000	
	Being elimination of interco dividends			
	Dr Fair value gain in put option (PL)	1,000		(Note 1)
	Cr Put option – derivative liability.....		1,000	
	Being reversal of fair value changes in derivative liability in the separate financial statements			
	Dr Finance cost	68,000		(Note 3)
	Cr Redemption liability – financial liability.....		68,000	
	Being accretion of interest on redemption liability			
	Upon exercise of put option.....			
	Dr Redemption liability – financial liability.....	750,000		
	Cr Investment in subsidiary – Company S		747,000	
	Cr Put option – derivative liability.....		3,000	
	Being reversal of entries passed at the separate financial statements and derecognition of redemption liability upon cash payment			
	Alternatively if:			
31 Dec 20x18	Put option lapses unexercised			
	Dr Fair value gain in put option (PL).....	3,000		
	Cr Put option – derivative liability.....		3,000	
	Being reversal of entries passed in the separate financial statements			
	Dr Redemption liability – financial liability.....	750,000		
	Dr Other reserves – Parent's equity	170,000		
	Cr Non-controlling interests		920,000	(Note 4)
	Being partial disposal of subsidiary on written put option lapsing			

Note 1: The accounting entries pertaining to the fair value changes in the put option derivative in the separate financial statements are reversed at the group level. This is done to facilitate the recognition of a financial liability measured at the present value of the redemption amount in accordance with IAS 32 in the consolidated financial statements. Interest expense is accreted on this financial liability in accordance with IFRS 9.

Note 2: Finance cost for year ended 31 December 20x17 is derived as $620,000*10% = $62,000.

Note 3: Finance cost for year ended 31 December 20x18 is derived as ($620,000+$62,000)*10% = $68,000.

Note 4: Non-controlling interests' share in Company S as at 31 December 20x18 is derived as:

	$	
NCI's proportionate share of fair value of net identifiable assets at acquisition date	520,000	[20%*2,600,000]
NCI's share of profit after tax for FY20x17	160,000	[20%*800,000]
NCI's share of profit after tax for FY20x18	240,000	[20%*1,200,000]
	920,000	

ILLUSTRATION 15.1B Accounting when derivatives entered into outside a business combination transaction provide current access to returns

Assume the same fact pattern as Illustration 15.1A with the exception that the put option written by Company P is not in connection with the business combination transaction. Instead, Company P wrote the put option one year subsequent to the acquisition on 1 January 20x18. The fair value of the put option which the non-controlling interests paid for in cash is $4,000 on that date.

Assume further that the fair value of the non-controlling interests as at the date of acquisition on 1 January 20x17 is $650,000 and Company P's accounting policy for the non-controlling interests at fair value at the acquisition date.

Analysis

Evaluating whether the Derivatives Provide Current Access to Returns on the Shares Held by Non-Controlling Interests

As discussed above, Company P assessed that it has, in substance, an existing ownership interest over the shares held by the non-controlling shareholders as the written put option has a fixed exercise price. In addition, Company P has obtained the right to receive dividends as well as voting rights in Company S under the put option agreement. Consequently, Company P has effectively acquired the remaining 20% non-controlling interests in the subsidiary on the date where the put option is written, i.e. 1 January 20x18.

Calculate the goodwill arising from the transaction

	$
Fair value of consideration (Note 1)	2,850,000
Fair value of non-controlling interests	650,000
Less: Fair value of net identifiable assets	(2,600,000)
Goodwill	900,000

Note 1: The fair value of consideration in this case comprises only of cash consideration. This is because the put option is written subsequent to the business combination transaction and Company P has assessed that this subsequent transaction is not a linked transaction to the business combination transaction.

Prepare the accounting entries

In the separate financial statements of Company P

		$	$
1 Jan 20x17	Dr Investment in subsidiary – Company S	2,850,000	
	Cr Cash		2,850,000
	Being investment in Company S		
31 Dec 20x17	Dr Cash	64,000	
	Cr Dividend income		64,000
	Being dividend income received		
1 Jan 20x18	Dr Cash	4,000	
	Cr Put Option – derivative liability		4,000
	Being cash received on put option written		
31 Dec 20x18	Dr Cash	96,000	
	Cr Dividend income		96,000
	Being dividend income received		
	Dr Put option – derivative liability	1,000	
	Cr Fair value gain in put option (PL)		1,000
	Being fair value changes in derivative liability		
	Upon exercise of put option		
	Dr Investment in subsidiary – Company S	747,000	
	Dr Put option – derivative liability	3,000	
	Cr Cash		750,000
	Being cash payment on exercise of put option by non-controlling interests		

	Alternatively if:		
31 Dec 20x18	Put option lapses unexercised		
	Dr Put option – derivative liability	3,000	
	Cr Fair value gain in put option (PL)		3,000
	Being lapsing of unexercised put option		

In the consolidated financial statements of Company P

		$	$
1 Jan 20x17	Dr Share capital and reserves	2,600,000	
	Dr Intangible asset		
	Dr Goodwill	900,000	
	Cr Investment in subsidiary – Company S		2,850,000
	Cr Non-controlling interests		650,000
	Being elimination of cost of investment at group level		

		$	$	
31 Dec 20x17	Dr Non-controlling interests (PL)	160,000		
	Cr Non-controlling interests (BS)		160,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	64,000		
	Dr Non-controlling interests (BS)	16,000		
	Cr Dividends paid		80,000	
	Being elimination of interco dividends			
1 Jan 20x18	Dr Put Option – derivative liability	4,000		
	Cr Other reserves – Parent's equity		4,000	
	Being reclassification of premium paid on put option to equity			
	Dr Non-controlling interests	974,000		(Note 1)
	Cr Other reserves – Parent's equity		292,000	
	Cr Redemption liability – financial liability		682,000	
	Being recognition of redemption liability on put option written			
31 Dec 20x18	Dr Dividend income	96,000		
	Dr Profit or loss – Dividends paid to NCI	24,000		
	Cr Dividends paid		120,000	
	Being elimination of interco dividends			
	Dr Fair value gain in put option (PL)	1,000		
	Cr Put option – derivative liability		1,000	
	Being reversal of fair value changes in derivative liability in the separate financial statements			
	Dr Finance cost	68,000		
	Cr Redemption liability – financial liability		68,000	
	Being accretion of interest on redemption liability			
	Upon exercise of put option			
	Dr Redemption liability – financial liability	750,000		
	Cr Investment in subsidiary – Company S		747,000	
	Cr Put option – derivative liability		3,000	
	Being reversal of entries passed at the separate financial statements and derecognition of redemption liability upon cash payment			

		$	$	
	Alternatively if:			
31 Dec 20x18	Put option lapses unexercised			
	Dr Fair value gain in put option	3,000		
	Cr Put option – derivative liability.....		3,000	
	Being reversal of entries passed in the separate financial statements			
	Dr Redemption liability – financial liability.....	750,000		
	Dr Other reserves – Parent's equity	440,000		
	Cr Non-controlling interests		1,190,000	(Note 2)
	Being partial disposal of subsidiary on written put option lapsing			

Note 1: Non-controlling interests' share in Company S as at 1 January 20x18 is derived as:

	$	
NCI's share of fair value of net identifiable assets at acquisition date	650,000	
NCI's share of goodwill	180,000	[20%*900,000]
NCI's share of profit after tax for FY20x17	160,000	[20%*800,000]
NCI's share of dividends for FY20x17	(16,000)	[20%*80,000]
	974,000	

Note 2: Non-controlling interests' share in Company S as at 31 December 20x18 is derived as:

	$	
NCI's share of fair value of net identifiable assets at acquisition date	650,000	
NCI's share of goodwill	180,000	[20%*900,000]
NCI's share of profit after tax for FY20x17	160,000	[20%*800,000]
NCI's share of dividends for FY20x17	(16,000)	[20%*80,000]
NCI's share of profit after tax for FY20x18	240,000	[20%*1,200,000]
NCI's share of dividends for FY20x18	(24,000)	[20%*120,000]
	1,190,000	

ACCOUNTING WHEN DERIVATIVES DO NOT PROVIDE PRESENT ACCESS TO RETURNS ON THE SHARES HELD BY NON-CONTROLLING INTERESTS

The acquirer/parent may, upon assessment of the terms and conditions of the derivative contracts conclude that the derivatives on the underlying shares held by the non-controlling interests do not provide the acquirer/parent with, in-substance ownership interests and accordingly, current access to returns associated ownership of the underlying shares. In other words, the ownership interests and the present access to the returns from the underlying shares remains with the non-controlling interests.

In these circumstances, there is diversity in practice on how such derivatives are accounted for. The diversity stems from the different schools of thought which emerged as a result of conflict in the existing IFRS Standards. The key question here is whether non-controlling interests is recognized.

Paragraph 22 of IFRS 10 requires a parent to present non-controlling interests within equity, separately from the equity of the owners of the parent in the consolidated statement of financial position. Accordingly, proponents of this school of thought takes the view that non-controlling interests must be recognized given that the ownership and the returns arising from the underlying shares in the subsidiary remains with the non-controlling interests. IFRS 10, therefore applies to the recognition and measurement of the non-controlling interests.

On the other hand, paragraph B91 of IFRS 10 states that instruments containing potential voting rights that in substance currently give access to the returns associated with an ownership interest in a subsidiary are not subject to the requirements of IFRS 9. In all other cases (i.e. where the instruments do not in substance give current access to the returns), the instruments are accounted for in accordance with IFRS 9. Paragraph AG29 of the Application Guidance to IAS 32 further requires an entity to consider all terms and conditions agreed between the members of the group and the holders of the instrument when classifying a financial instrument (or a component of it) in the consolidated financial statements to determine if the group as a whole has an obligation to deliver cash or another financial asset in respect of the instrument or to settle it in a manner that results in liability classification. If there is such an obligation or settlement provision, the instrument (or the component of it that is subject to the obligation) is classified as a financial liability in consolidated financial statements. Hence, in this case, the instrument, which is the shares held by the non-controlling interests (on which the derivative contracts is entered into) is reclassified as a financial liability. Consequently, subscribers to this school of thought argues that non-controlling interests is no longer recognized after the reclassification and accordingly, IFRS 10 does not apply to the recognition and measurement of the non-controlling interests.

Apparent from the discussion above, for the conflict to be an issue, the derivative contracts with the non-controlling interests must result in the group (as a whole) assuming an obligation to deliver cash or another financial asset for the underlying shares held by the non-controlling interests. This would be the case if the derivatives contracts entered take the form of written put options, symmetrical call and put options or forward contracts. However, if the derivatives entered do not result in the group having the obligation to transfer cash or other financial asset that results in a financial liability classification, the conflict ceases to be a problem. That would be the case in call options. This is because the group being the holder of the call option has the right but not the obligation to exercise the option to buy the shares held by the non-controlling interests. In these cases, there is no conflict and paragraph 22 of IFRS 10 applies, i.e. non-controlling interests are recognized.

Insofar as the derivatives that accord the group with an obligation to transfer cash or other financial assets are concerned, different approaches in accounting have emerged in practice as a result of this conflict in the requirement within the IFRS Standards. We will discuss and explain some of the acceptable accounting approaches in practice by the type of instrument used below.

Put Options on Shares Held by Non-Controlling Interests

When the acquirer/parent writes put options on the shares in the subsidiary held by the non-controlling interest, this results in the group having an obligation to transfer cash or other financial assets to the non-controlling interests in the consolidated financial statements. This is because as writer of the put option, the group has the obligation to pay the exercise price in exchange for the underlying shares (i.e. own equity) when the put option is exercised by the non-controlling interests.

As discussed above, due to the conflicts within existing IFRS Standards, there is diversity in practice in terms of the accounting treatment. We will discuss two of the acceptable accounting treatments adopted in practice below.

Approach A

The conceptual underpinning under Approach A is predicated on the school of thought that takes the view that notwithstanding that the written put option on the shares held by non-controlling interests does not provide the acquirer/parent with the present ownership rights of the underlying shares held by the non-controlling interests, the requirements in IAS 32 should take precedence over IFRS 10. Specifically, the application of paragraph B91 of IFRS 10 requires these derivatives to be accounted for under IFRS 9.

Therefore, as stipulated in paragraph AG29 of the Application Guidance to IAS 32, the shares held by the non-controlling interests are reclassified from equity to financial liability in the consolidated financial statements, i.e. non-controlling interests is no longer recognized. Essentially, the non-controlling interests is acquired through the deemed exercise of the written put option on initial recognition of the put option in the consolidated financial statements.

Consequently, the financial effects of accounting under Approach A for both initial recognition and subsequent measurement is the same as the approach discussed above when the derivatives accord the acquirer/parent with an existing ownership interest on the shares held by the non-controlling interests.

Please refer to Illustrations 15.1A and 15.1B for the accounting effects of Approach A.

Approach B

The accounting principles in Approach B is couched on the requirement in paragraph 22 of IFRS 10 which requires non-controlling interests to be recognized and presented within equity, separately from the equity of the owners of the parent in the consolidated financial statements. This is because non-controlling interests continues to retain the ownership and returns associated with the underlying shares in the subsidiary. In other words, Approach B adopts the view that the requirements in IFRS 10 takes precedence over IAS 32.

Initial recognition

Hence, regardless of whether the put option was written as part of a business combination transaction or after the parent has obtained control, non-controlling interest will be recognized. At the date of acquisition by the parent, non-controlling interests will be measured at either fair value or at their proportionate share of the recognized fair value of the acquiree's identifiable net assets in accordance with IFRS 3.

Paragraph 23 of IAS 32 requires the financial liability which is recognized initially at the present value of the redemption amount to be reclassified from equity. Given that non-controlling interest continues to be recognized in accordance with IFRS 10, the amount is reclassified from another component of the parent's equity[8] in the consolidated financial statements to create the financial liability.

Subsequent measurement

For purposes of subsequent measurement, the non-controlling interests continue to be attributed with their share of the profit or loss and each component of other comprehensive income in the subsidiary in accordance with paragraph B94 of IFRS 10. Dividends declared and paid by the subsidiary to the parent are eliminated. Dividends paid to the non-controlling interest are eliminated against the carrying value of the non-controlling interests as discussed in Chapter 4.

The financial liability is measured at amortized cost using the effective interest method in accordance with IFRS 9. Paragraph 5.7.2 of IFRS 9 requires the changes in the measurement of the financial liability to be recognized in the profit or loss. However, such changes are adjusted against the parent's profit or loss via consolidation adjustment, i.e. these changes are not included in the computation of the share of profit or loss attributed to the non-controlling interests. The rationale is because the financial liability belongs to the owners of the parent and accordingly, changes in the value of this financial liability should be attributed solely to the parent.

Date of settlement

When the put option is exercised, the financial liability is de-recognized when cash or other financial asset is paid to the non-controlling interests. The carrying value of the non-controlling interests is also simultaneously de-recognized against that component of the parent's equity from which the financial liability was initially reclassified from.

However, if the put option remains unexercised by the non-controlling interests and lapses at the exercise date, paragraph 23 of IAS 32 requires the carrying value of the financial liability to be reclassified back to equity. In particular, the reclassification is made against that component of the parent's equity from which the financial liability was first reclassified from.

In both cases above, any remaining balance in the component of the parent's equity remains in equity, attributable to the parent. However, the parent is not precluded from reclassifying the remaining balance to other reserves within equity.

The following examples illustrate the accounting effects of a written put option under Approach B in (1) a business combination transaction and (2) when the put option is written after control has been obtained.

ILLUSTRATION 15.2A Accounting when put options entered into as part of the business combination transaction do not provide current access to returns on the shares held by non-controlling interests

Assume the same fact pattern as Illustration 15.1A with the exception that the exercise price in the put option written by Company P is not fixed. Instead, the exercise price is based on the formulae as follows:

Put option exercise price = [Net tangible assets at date of exercise + (Profit after tax at date of exercise*8)]/Number of issued and paid up ordinary shares as at the date of acquisition of Company S

Further, the right to receive dividends and voting rights are not transferred to Company P but remains with non-controlling interests. The rest of the terms of the put option remains unchanged, i.e. the put option can be exercised by the non-controlling interests at any point in time from 31 December 20x17 to 31 December 20x18 and it can only be settled via physical delivery. In addition, the terms in the put option agreement do not allow any adjustment to be made to the exercise price when dividend is paid by Company S.

The table from Illustration 15.1A is replicated below for ease of reference.

	$
Estimated price to be paid upon exercise of put option	750,000
Present value of exercise price on 1 January 20x17	620,000
Present value of exercise price on 31 December 20x17	682,000
Present value of exercise price on 31 January 20x18	750,000
Fair value of put option on 1 January 20x17	(5,000)
Fair value of put option on 31 December 20x17	(4,000)
Fair value of put option on 31 December 20x18	(3,000)
Subsidiary S's profit after tax for the year ended 31 December 20x17	800,000
Subsidiary S's profit after tax for the year ended 31 December 20x18	1,200,000
Dividends paid by subsidiary S for the year ended 31 December 20x17	

- Company P's share	64,000
- Non-controlling interests' share	16,000
Dividends paid by subsidiary S for the year ended 31 December 20x18	
- Company P's share	96,000
- Non-controlling interests' share	24,000

The fair value of the non-controlling interests at the date of acquisition is $650,000 and Company P measures the carrying value of the non-controlling interests at fair value at the acquisition date. On 31 December 20x18, the non-controlling shareholders exercised the written put option. Taxes are ignored for the purpose of this illustration.

Analysis

Evaluating whether the Derivatives Provide Current Access to Returns on the Shares Held by Non-Controlling Interests

Based on an analysis of the terms and conditions on the put options written, Company P assessed that it does not have, in substance, an existing ownership interest over the shares held by the non-controlling shareholders. This is because the exercise price in the written put option is based on formulae as opposed to a fixed and determinable price. In addition, the rights of ownership such as right to dividend and right to vote remains with the non-controlling interests. Therefore, the risks and rewards associated with the shares remains with the non-controlling shareholders. Consequently, as at the date of acquisition, Company P has gained control via acquisition of 80% of the subsidiary.

Calculate the goodwill arising from the transaction

	$
Fair value of consideration (Note 1)	2,850,000
Fair value of non-controlling interests	650,000
Less: Fair value of net identifiable assets	(2,600,000)
Goodwill	900,000

Note 1: The fair value of consideration in this case comprises solely of cash consideration as Company P has only acquired 80% of Company S. Non-controlling interests is recognized. The present value of the redemption liability is separately reclassified from the parent's equity in accordance with paragraph 23 of IAS 32.

Prepare the accounting entries

In the separate financial statements of Company P

		$	$
1 Jan 20x17	Dr Investment in subsidiary – Company S	2,855,000	
	Cr Cash		2,850,000
	Cr Put option – derivative liability		5,000

	Being investment in Company S		
31 Dec 20x17	Dr Cash	64,000	
	Cr Dividend income		64,000
	Being dividend income received		
	Dr Put option – derivative liability	1,000	
	Cr Fair value gain in put option (PL)		1,000
	Being fair value changes in derivative liability		
31 Dec 20x18	Dr Cash	96,000	
	Cr Dividend income		96,000
	Being dividend income received		
31 Dec 20x18	Dr Put option – derivative liability (PL)	1,000	
	Cr Fair value gain in put option		1,000
	Being fair value changes in derivative liability		
	Upon exercise of put option		
	Dr Investment in subsidiary – Company S	747,000	
	Dr Put option – derivative liability	3,000	
	Cr Cash		750,000
	Being cash payment on exercise of put option by non-controlling interests		

	Alternatively if:		
31 Dec 20x18	Put option lapses unexercised		
	Dr Put option – derivative liability	3,000	
	Cr Fair value gain in put option (PL)		3,000
	Being lapsing of unexercised put option		

In the consolidated financial statements of Company P

		$	$	
1 Jan 20x17	Dr Put option – derivative liability	5,000		(Note 1)
	Cr Investment in subsidiary – Company S		5,000	
	Being reversal of derivative liability recognized in the separate financial statements			

		$	$	
1 Jan 20x17	Dr Share capital and reserves	} 2,600,000		
	Dr Intangible asset			
	Dr Goodwill	900,000		
	Dr Other reserves – Parent's equity	620,000		(Note 1)
	Cr Investment in subsidiary – Company S		2,850,000	
	Cr Non-controlling interests		650,000	
	Cr Redemption liability – financial liability		620,000	
	Being elimination of cost of investment at group level and recognition of redemption liability at group level			
31 Dec 20x17	Dr Non-controlling interests (PL)	160,000		
	Cr Non-controlling interests (BS)		160,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	64,000		
	Dr Non-controlling interests (BS)	16,000		
	Cr Dividends paid		80,000	
	Being elimination of interco dividends			
	Dr Fair value gain in put option	1,000		
	Cr Put option – derivative liability		1,000	
	Being reversal of fair value changes in derivative liability in the separate financial statements			
	Dr Finance cost	62,000		
	Cr Redemption liability – financial liability		62,000	
	Being accretion of interest on redemption liability			
31 Dec 20x18	Dr Non-controlling interests (PL)	240,000		
	Cr Non-controlling interests (BS)		240,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	96,000		
	Dr Non-controlling interests (BS)	24,000		
	Cr Dividends paid		120,000	
	Being elimination of interco dividends			
	Dr Fair value gain in put option (PL)	1,000		
	Cr Put option – derivative liability		1,000	
	Being reversal of fair value changes in derivative liability in the separate financial statements			
	Dr Finance cost	68,000		
	Cr Redemption liability – financial liability		68,000	
	Being accretion of interest on redemption liability			

		$	$	
31 Dec 2018	Upon exercise of put option			
	Dr Redemption liability – financial liability	750,000		
	Cr Investment in subsidiary – Company S		747,000	
	Cr Put option – derivative liability		3,000	
	Being reversal of entries passed at the separate financial statements and derecognition of redemption liability upon cash payment			
	Dr Non-controlling interests (BS)	1,190,000		(Note 2)
	Cr Other reserves – Parent's equity		1,190,000	
	Being acquisition of non-controlling interests on exercise of put option			
	Alternatively if:			
31 Dec 20x18	Put option lapses unexercised			
	Dr Fair value gain in put option	3,000		
	Cr Put option – derivative liability		3,000	
	Being reversal of entries passed in the separate financial statements			
	Dr Redemption liability – financial liability	750,000		
	Cr Other reserves – Parent's equity		750,000	
	Being derecognition of redemption liability			

Note 1: Accounting entries relating to the derivative liability for the put option in the separate financial statements is reversed to facilitate the recognition of the redemption liability in the consolidated financial statements.

Note 2: Non-controlling interests' share in Company S as at 31 December 20x18 is derived as:

	$	
NCI's share of fair value of net identifiable assets at acquisition date	650,000	
NCI's share of goodwill	180,000	[20%*900,000]
NCI's share of profit after tax for FY20x17	160,000	[20%*800,000]
NCI's share of dividends for FY20x17	(16,000)	[20%*80,000]
NCI's share of profit after tax for FY20x18	240,000	[20%*1,200,000]
NCI's share of dividends for FY20x18	(24,000)	[20%*120,000]
	1,190,000	

ILLUSTRATION 15.2B **Accounting when put options entered outside a business combination transaction do not provide current access to returns on the shares held by non-controlling interests**

Assume the same fact pattern as Illustration 15.1A with the exception that the put option written by Company P is not in connection with the business combination transaction. Company P wrote the put option one year subsequent to the acquisition on 1 January 20x18. The fair value of the put option is $4,000 which the non-controlling interests paid in cash.

Analysis

Evaluating whether the Derivatives Provide Current Access to Returns on the Shares Held by Non-Controlling Interests

As discussed above, Company P assessed that it does not have, in substance, an existing ownership interest over the shares held by the non-controlling shareholders as the written put option as the exercise price in the written put option is based on formulae as opposed to a fixed and determinable price. In addition, the rights of ownership such as right to dividend and right to vote remains with the non-controlling interests. Therefore, the risks and rewards associated with the shares remains with the non-controlling shareholders. Consequently, the remaining 20% non-controlling interests in the subsidiary is not acquired by Company P on the date where the put option is written, i.e. 1 January 20x18.

Calculate the goodwill arising from the transaction

	$	
Fair value of consideration	2,850,000	(Note 1)
Fair value of non-controlling interests	650,000	
Less: Fair value of net identifiable assets	(2,600,000)	
Goodwill	900,000	

Note 1: The fair value of consideration comprises only of cash consideration as the put option was written subsequent to the business combination transaction and Company P has assessed that the subsequent transaction of writing the put option is not a linked transaction to the business combination transaction.

Prepare the accounting entries

In the separate financial statements of Company P

		$	$
1 Jan 20x17	Dr Investment in subsidiary – Company S	2,850,000	
	Cr Cash		2,850,000
	Being investment in Company S		
31 Dec 20x17	Dr Cash	64,000	
	Cr Dividend income		64,000
	Being dividend income received		
1 Jan 20x18	Dr Cash	4,000	
	Cr Put Option – derivative liability		4,000
	Being cash received on put option written		

31 Dec 20x18	Dr Cash	96,000	
	Cr Dividend income		96,000
	Being dividend income received		
31 Dec 20x18	Dr Put option – derivative liability	1,000	
	Cr Fair value gain in put option (PL)		1,000
	Being fair value changes in derivative liability		
31 Dec 20x18	Upon exercise of put option		
	Dr Investment in subsidiary – Company S	747,000	
	Dr Put option – derivative liability	3,000	
	Cr Cash		750,000
	Being cash payment on exercise of put option by non-controlling interests		

	Alternatively if:		
31 Dec 20x18	Put option lapses unexercised		
	Dr Put option – derivative liability	3,000	
	Cr Fair value gain in put option (PL)		3,000
	Being lapsing of unexercised put option		

In the consolidated financial statements of Company P

		$	$
1 Jan 20x17	Dr Share capital and reserves	2,600,000	
	Dr Intangible asset		
	Dr Goodwill	900,000	
	Cr Investment in subsidiary – Company S		2,850,000
	Cr Non-controlling interests		650,000
	Being elimination of cost of investment at group level		
31 Dec 20x17	Dr Non-controlling interests (PL)	160,000	
	Cr Non-controlling interests (BS)		160,000
	Being allocation of profit for the year to non-controlling interests		
	Dr Dividend income	64,000	
	Dr Non-controlling interests (BS)	16,000	
	Cr Dividends paid		80,000
	Being elimination of interco dividends		
1 Jan 20x18	Dr Put option – derivative liability	4,000	
	Cr Other reserves – Parent's equity		4,000
	Being reclassification of premium paid on put option to equity		

		$	$
1 Jan 20x18	Dr Other reserves – Parent's equity	682,000	
	Cr Redemption liability		682,000
	Being recognition of redemption liability on put option written		
31 Dec 20x18	Dr Non-controlling interests (PL)	240,000	
	Cr Non-controlling interests (BS)		240,000
	Being allocation of profit for the year to non-controlling interests		
31 Dec 20x18	Dr Dividend income	96,000	
	Dr Non-controlling interests (BS)	24,000	
	Cr Dividends paid		120,000
	Being elimination of interco dividends		
	Dr Fair value gain in put option	1,000	
	Cr Put option – derivative liability		1,000
	Being reversal of fair value changes in derivative liability in the separate financial statements		
	Dr Finance cost	68,000	
	Cr Redemption liability – financial liability		68,000
	Being accretion of interest on redemption liability		
	Upon exercise of put option		
	Dr Redemption liability – financial liability	750,000	
	Cr Investment in subsidiary – Company S		747,000
	Cr Put option – derivative liability		3,000
	Being reversal of entries passed at the separate financial statements and derecognition of redemption liability upon cash payment		
	Dr Non-controlling interests (BS)	1,190,000	
	Cr Other reserves – Parent's equity		1,190,000
	Being acquisition of non-controlling interests on exercise of put option		
	Alternatively if:		
31 Dec 20x18	Put option lapses unexercised		
	Dr Fair value gain in put option (PL)	3,000	
	Cr Put option – derivative liability		3,000
	Being reversal of entries passed in the separate financial statements		
	Dr Redemption liability – financial liability	750,000	
	Cr Other reserves – Parent's equity		750,000
	Being derecognition of redemption liability		

For the purposes of the discussion of the accounting treatment for the various types of derivatives below, we will assume that Approach B is adopted, i.e. non-controlling interests is recognized.

Call Options on Shares Held by Non-Controlling Interests

When the acquirer/parent holds a call option on the shares held by the non-controlling interests, from the perspective of the group, there is no obligation for the group to transfer cash or other financial assets to the non-controlling interests in the consolidated financial statements. This is because the group in this case is the holder of the call option, i.e. it has the right but not the obligation to buy the underlying shares held by the non-controlling interests. Accordingly, no financial liability is recognized in the consolidated financial statements.

Notwithstanding this, when the call option does not provide the acquirer/parent with the current access to the returns associated with ownership interest on the shares held by the non-controlling interests in the subsidiary, paragraph B91 of IFRS 10 requires the acquirer/parent to apply the requirements of IFRS 9 to such instruments. Specifically, paragraph 2.1 of IFRS 9 requires such derivatives on an interest in subsidiary to be accounted for as financial assets or liabilities unless the derivative meets the definition of an equity instrument of the entity (i.e. the issuer which is the group in this case) in accordance with IAS 32.

What this essentially means is that the accounting treatment in the consolidated financial statements will differ depending on whether the call option meets the definition of an equity instrument.

Equity instrument

For the purchased call option to meet the definition of an equity instrument, paragraph 16 of IAS 32 sets out two criteria that must be met.

Firstly, paragraph 16(a) of IAS 32 stipulates that the instrument must not include any contractual obligation to either deliver cash or another financial asset to another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavorable to the issuer. In this instance, the entity's own shares are not considered to be financial assets of the entity itself.

Secondly, paragraph 16(b)(ii) states that if this instrument is a derivative and it will be settled in the issuer's own equity instruments, the derivative will be settled only by the issuer exchanging a fixed amount of cash or another financial asset for a fixed number of its own equity instruments[9].

Hence, if the call option written by the non-controlling interests meets the two criteria above, it would qualify as an equity instrument of the group in the consolidated financial statements. It is unlikely that call options written by third parties other than non-controlling interests of the group would meet the definition of equity instrument. This is because paragraph 16(b)(ii) of IAS 32 will not be met as the underlying shares on which the call option is written would not be the third party's (who is the issuer) own equity.

On initial recognition, paragraph 22 of IAS 32 requires any consideration paid (i.e. the premium paid for a purchased option) to be deducted against the parent's equity. Hence, if the call option written by the non-controlling interests was granted as part of a business combination transaction, the fair value[10] of the call option on initial recognition would be deducted against the parent's equity. The same accounting treatment would apply if the call option was purchased after the parent has obtained control of the subsidiary. Non-controlling interest is measured at either fair value or at their proportionate share of the recognized fair value of the acquiree's identifiable assets at the date of acquisition in accordance with IFRS 3.

For purposes of subsequent measurement, as the call options qualify as equity instruments in the consolidated financial statements, paragraph 22 of IAS 32 states that changes in fair value of an equity instrument are not recognized in the financial statements. In other words, the call options are not re-measured after initial recognition. Non-controlling interests will continue to be attributed with their share of the profit or loss and each component of other comprehensive income in the subsidiary in accordance with paragraph B94 of IFRS 10. Dividends declared and

paid by the subsidiary to the parent are eliminated. Dividends paid to the non-controlling interests are eliminated against the carrying value of the controlling interests as discussed in Chapter 4.

At the date where the parent/acquirer exercises the call option, non-controlling interest is de-recognized. This is because the shares held by non-controlling interests are being acquired. The purchase consideration for the acquisition of the non-controlling interests comprised of both the initial fair value of the call option that was recognized in the parent's equity and the amount paid by the acquirer/parent in exchange for the shares in the subsidiary. Any difference between the carrying value of non-controlling interests de-recognized and the consideration paid is recognized in equity and attributed to the owners of the parent (Paragraph B96 of IFRS 10).

Conversely, if the call option lapses unexercised, no entry is required. The fair value of the call option that was initially recognized in the parent's equity remains within equity.

ILLUSTRATION 15.3A Accounting when a call option entered into as part of the business combination transaction does not provide current access to returns on the shares held by non-controlling interests and meets the definition of an equity instrument

On 1 July 20x18, Company Mars acquires 70% of Company Snickers for cash consideration amounting to $8.2 million. The fair value of the identifiable net assets of Company Snickers as at the date of acquisition is $7.2 million. As part of the acquisition of Company Snickers, Company Mars and the non-controlling interests entered into an agreement in which the non-controlling interests wrote and granted Company Mars a call option over the remaining 30% shares held by the non-controlling interests. The call option can only be exercised by Company Mars at 30 June 20x20 and it can only be settled via physical delivery. Upon exercise of the call option, Company Mars will pay for the 30% shares held by the non-controlling interests at $4 million.

The following table sets out the other salient details in connection with the illustration.

	$
Fixed price to be paid upon exercise of call option	4,000,000
Fair value of call option on 30 June 20x18	8,000
Fair value of call option on 30 June 20x19	6,000
Fair value of call option on 30 June 20x20	3,000
Subsidiary Snickers's profit after tax for the year ended 30 June 20x19	1,200,000
Subsidiary Snickers's profit after tax for the year ended 30 June 20x20	2,000,000
Dividends paid by subsidiary Snickers for the year ended 30 June 20x19	36,000
Dividends paid by subsidiary Snickers for the year ended 30 June 20x20	60,000

For the purpose of this illustration, the terms in the call option agreement do not allow any adjustment to be made to the exercise price when dividends are paid by Company Snickers. Rights associated with the underlying shares such as voting rights and the right to receive dividends remain with the non-controlling shareholders. It is further assumed that the excess of fair value over the net carrying value of the assets in Company Snickers at the date of acquisition relates to an intangible asset with indefinite useful life. There is no impact on the post-acquisition profits on the group as the intangible asset with indefinite useful life remains unimpaired for FY20x19 and FY20x20.

page 1222

On 30 June 20x20, Company Mars exercised the call option. Taxes are ignored for the purpose of this illustration. Company Mars' accounting policy for non-controlling interests is to measure them at their proportionate

share of the recognized fair value of the acquiree's identifiable net assets at the date of acquisition in accordance with IFRS 3. The financial year end for both Company Snickers and Company Mars is June.

Analysis

Evaluating whether the Derivatives Provide Current Access to Returns on the Shares Held by Non-Controlling Interests

Company Mars assessed that it does not have, in substance, an existing ownership interest over the shares held by the non-controlling shareholders as the call option is currently not exercisable and the rights associated with the ownership of the shares such as voting rights and right to dividends remain with the non-controlling interests. This is notwithstanding that the exercise price of the call option is fixed. Consequently, the remaining 30% non-controlling interests in the subsidiary is not effectively acquired on the acquisition date. In addition, Company Mars assessed that the call option written by the non-controlling interests qualifies as an equity instrument of the group in the consolidated financial statements as it meets the fixed-for-fixed criteria in IAS 32. Specifically, Company Mars will have to pay the non-controlling interests a fixed amount of $4 million for a fixed number of shares (i.e. representing the 30% interest in the subsidiary) when the call option is exercised.

Calculate the goodwill arising from the transaction

	$	
Fair value of consideration	8,192,000	(Note 1)
Non-controlling interests	2,160,000	(Note 2)
Less: Fair value of net identifiable assets	(7,200,000)	
Goodwill	3,152,000	

Note 1: Fair value of the consideration for the business combination is derived as the excess of the consideration paid over the fair value of the call option, i.e. $8.2 million less $8,000. Essentially, Company Mars has received two items namely control through 70% of Company Snickers and the call option in exchange for the consideration paid of $8.2 million.

Note 2: The carrying value of non-controlling interests is derived as 30%*$7.2 million.

Prepare the accounting entries

In the separate financial statements of Company Mars

		$	$
1 Jul 20x18	Dr Investment in subsidiary	8,192,000	
	Dr Call option – derivative asset	8,000	
	Cr Cash		8,200,000
	Being investment in Company Snickers and purchase of call option		

page 1223

30 Jun 20x19	Dr Cash	25,200	
	Cr Dividend income		25,200
	Being dividend income received		

	Dr Fair value loss on call option (PL)	2,000	
	Cr Call option – derivative asset		2,000
	Being fair value changes on call option asset		
30 Jun 20x20	Dr Cash	42,000	
	Cr Dividend income		42,000
	Being dividend income received		
	Dr Fair value loss on call option (PL)	3,000	
	Cr Call option – derivative asset		3,000
	Being fair value changes on call option asset		
	Upon exercise of call option		
	Dr Investment in subsidiary	4,003,000	
	Cr Call option – derivative asset		3,000
	Cr Cash		4,000,000
	Being cash payment on exercise of call option by Company Mars		

	Alternatively if:		
	Call option lapses unexercised		
30 Jun 20x20	No accounting entry required if call option is not exercised.		
30 Jun 20x21	Dr Fair value loss on call option (PL)	3,000	
	Cr Call option – derivative asset		3,000
	Being derecognition of call option asset		

In the consolidated financial statements of Company Mars

		$	$	
1 Jul 20x18	Dr Share capital and reserves Dr Intangible asset	7,200,000		Note 1
	Dr Goodwill	3,152,000		
	Dr Equity – call option	8,000		
	Cr Investment in subsidiary		8,192,000	
	Cr Non-controlling interests		2,160,000	
	Cr Call option – derivative asset		8,000	
	Being elimination of cost of investment at group level and reclassification of call option derivative asset to equity			

		$	$	
30 Jun 20x19	Dr Call option – derivative asset	2,000		
	Cr Fair value loss on call option (PL)		2,000	
	Being reversal of fair value changes of call option in the separate financial statements			
	Dr Non-controlling interests (PL)	360,000		
	Cr Non-controlling interests (BS)		360,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	25,200		
	Dr Non-controlling interests (BS)	10,800		
	Cr Dividends paid		36,000	
	Being elimination of interco dividends			
	No further entry required for equity instrument in accordance with IAS 32.			
30 Jun 20x20	Dr Call option – derivative asset	3,000		
	Cr Fair value loss on call option (PL)		3,000	
	Being reversal of fair value changes of call option in the separate financial statements			
	Dr Non-controlling interests (PL)	600,000		
	Cr Non-controlling interests (BS)		600,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	42,000		
	Dr Non-controlling interests (BS)	18,000		
	Cr Dividends paid		60,000	
	Being elimination of interco dividends			
	No further entry required for equity instrument in accordance with IAS 32.			
	Upon exercise of call option			
	Dr Call option – derivative asset	3,000		
	Cr Investment in subsidiary		3,000	
	Being reversal of entries relating to derivative asset recorded in the separate financial statements			
	Dr Non-controlling interests (BS)	3,091,200		Note 2
	Dr Other reserves – Parent's equity	916,800		
	Cr Investment in subsidiary		4,000,000	
	Cr Equity – call option		8,000	
	Being acquisition of non-controlling interests on exercise of call option			

		$	$
	Alternatively if: Call option lapses unexercised		
30 Jun 20x20	No accounting entry required of premium on call option recognized in equity if call option is not exercised.		
30 Jun 20x21	Dr Fair value gain in call option	3,000	
	Cr Call option – derivative asset.....		3,000
	Being reversal of entries passed in the separate financial statements		

Note 1: No financial liability measured at the present value of the redemption amount is recognized in the consolidated financial statements as the group is the holder of the call option, i.e. it has the right but not the obligation to buy the underlying shares held by the non-controlling interests.

Note 2: Non-controlling interests' share in Company Snickers as at 30 June 20x20 is derived as:

	$	
NCI's proportionate share of fair value of net identifiable assets at acquisition date	2,160,000	
NCI's share of profit after tax for FY20x19	360,000	[30%*1,200,000]
NCI's share of dividends for FY20x19	(10,800)	[30%*36,000]
NCI's share of profit after tax for FY20x20	600,000	[30%*2,000,000]
NCI's share of dividends for FY20x20	(18,000)	[30%*60,000]
	3,091,200	

Financial asset

If the call option does not meet the definition of an equity instrument of the entity as defined in IAS 32, it is accounted for as a financial instrument. Given that the group is the holder of the call option, the derivative would take the form of a financial asset in the consolidated financial statements.

On initial recognition, IFRS 9 requires the call option to be measured at its fair value. Hence, if the call option was written and granted as part of the business combination by the non-controlling interests, the excess of the fair value of the consideration paid over the fair value of the call option at the date of acquisition is attributed to the purchase consideration for the business combination transaction. Goodwill will be calculated based on this purchase consideration. Non-controlling interest is measured at either fair value or at their proportionate share of the recognized fair value of the acquiree's identifiable net assets at the date of acquisition in accordance with IFRS 3.

However, if the call option was purchased from a third party at the same time as the acquisition, it is a separate transaction from the business combination transaction. The fair value of the call option on initial recognition will generally be the fair value of the consideration paid to the third party. This is also the case if the call option was bought after the parent has obtained control of the subsidiary.

For subsequent measurement, the call option is measured at fair value in accordance with IFRS 9 with changes in the fair value of the financial asset recognized in profit or loss[11]. Non-controlling interests will continue to be attributed with their share of the profit or loss and each component of other comprehensive income in the subsidiary in accordance with paragraph B94 of IFRS 10. Dividends declared and paid by the

page 1226

subsidiary to the parent are eliminated. Dividends paid to the non-controlling interest are eliminated against the carrying value of the controlling interests as discussed in Chapter 4.

When the call option is exercised, the carrying value of non-controlling interests on that date is de-recognized. The purchase consideration for the acquisition of the non-controlling interests comprise both the fair value of the call option at the exercise date as well as the amount paid by the acquirer/parent in exchange for the shares held by the non-controlling interests. Any difference between the carrying value of non-controlling interests de-recognized and the consideration paid is recognized in equity and attributed to the owners of the parent in accordance with paragraph B96 of IFRS 10.

Conversely, if the call option lapses unexercised, the remaining carrying value of the derivative is de-recognized and expensed in the profit or loss.

ILLUSTRATION 15.3B Accounting when a call option entered into with non-controlling interests as part of the business combination transaction does not provide current access to returns on the shares held by non-controlling interests and meets the definition of a financial instrument

Assume the same facts as Illustration 15.3A with the exception that the exercise price of the call option is based on the fair value as at the date of exercise of the option.

The following table with salient details is replicated for ease of reference.

	$
Estimated price to be paid upon exercise of call option	4,000,000
Fair value of call option on 30 June 20x18	8,000
Fair value of call option on 30 June 20x19	6,000
Fair value of call option on 30 June 20x20	3,000
Subsidiary Snickers's profit after tax for the year ended 30 June 20x19	1,200,000
Subsidiary Snickers's profit after tax for the year ended 30 June 20x20	2,000,000
Dividends paid by subsidiary Snickers for the year ended 30 June 20x19	36,000
Dividends paid by subsidiary Snickers for the year ended 30 June 20x20	60,000

Analysis

Evaluating whether the Derivatives Provide Current Access to Returns on the Shares Held by Non-Controlling Interests

As discussed above, Company Mars assessed that it does not have, in substance, an existing ownership interest over the shares held by the non-controlling shareholders as the call option is currently not exercisable and the rights associated with the ownership of the shares such as voting rights and right to dividends remain with the non-controlling interests. This is in addition to the fact that the exercise price of the call option is not fixed as it is based on the fair value at the date of exercise. Consequently, the remaining 30% non-controlling interests in the subsidiary is not effectively acquired on the acquisition date. Furthermore, by virtue of the fact that the exercise price is variable (i.e. based on the fair value at the date of exercise), Company Mars assessed that the call option written by the non-controlling interests does not qualify as an equity instrument of the group in the consolidated financial statements as it does not meet the fixed-for-fixed criteria in IAS 32.

Accordingly, Company Mars will account for the call option as a financial asset in the consolidated financial statements.

Calculate the goodwill arising from the transaction

	$	
Fair value of consideration	8,192,000	(Note 1)
Non-controlling interests	2,160,000	As calculated above
Less: Fair value of net identifiable assets	(7,200,000)	
Goodwill	3,152,000	

Note 1: Fair value of the consideration for the business combination transaction is derived as the excess of the consideration paid over the fair value of the call option, i.e. $8.2 million less $8,000. Essentially, Company Mars has received two items namely control via having 70% of Company Snickers and the call option in exchange for the consideration paid of $8.2 million.

Prepare the accounting entries

In the separate financial statements of Company Mars

		$	$
1 Jul 20x18	Dr Investment in subsidiary	8,192,000	
	Dr Call option – derivative asset	8,000	
	Cr Cash		8,200,000
	Being investment in Company Snickers and purchase of call option		
30 Jun 20x19	Dr Cash	25,200	
	Cr Dividend income		25,200
	Being dividend income received		
	Dr Fair value loss on call option (PL)	2,000	
	Cr Call option – derivative asset		2,000
	Being fair value changes on call option asset		
30 Jun 20x20	Dr Cash	42,000	
	Cr Dividend income		42,000
	Being dividend income received		
	Dr Fair value loss on call option (PL)	3,000	
	Cr Call option – derivative asset		3,000
	Being fair value changes on call option asset		
	Upon exercise of call option		

	Dr Investment in subsidiary	4,003,000	
	Cr call option – derivative asset		3,000
	Cr Cash		4,000,000
	Being cash payment on exercise of call option by Company Mars		page 1228

	Alternatively if:		
	Call option lapses unexercised		
30 Jun 20x20	No accounting entry required if call option is not exercised		
30 Jun 20x21	Dr Fair value loss on call option (PL)	3,000	
	Cr call option – derivative asset		3,000
	Being derecognition of call option asset		

In the consolidated financial statements of Company Mars

		$	$	
1 Jul 20x18	Dr Share capital and reserves	7,200,000		Note 2
	Dr Intangible asset			
	Dr Goodwill	3,152,000		
	Cr Investment in subsidiary		8,192,000	
	Cr Non-controlling interests		2,160,000	
	Being elimination of cost of investment at group level			
30 Jun 20x19	Dr Non-controlling interests (PL)	360,000		Note 3
	Cr Non-controlling interests (BS)		360,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	25,200		
	Dr Non-controlling interests (BS)	10,800		
	Cr Dividends paid		36,000	
	Being elimination of interco dividends			
30 Jun 20x20	Dr Non-controlling interests (PL)	600,000		
	Cr Non-controlling interests (BS)		600,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	42,000		
	Dr Non-controlling interests (BS)	18,000		
	Cr Dividends paid		60,000	
	Being elimination of interco dividends			
	Upon exercise of call option			
	Dr Non-controlling interests (BS)	3,091,200		As calculated
	Dr Other reserves – Parent's equity	911,800		above
	Cr Investment in subsidiary		4,003,000	
	Being acquisition of non-controlling interests on exercise of call option			

		$	$	
	Alternatively if:			
	Call option lapses unexercised			
30 Jun 20x20 30 Jun 20x21	No accounting entry is required to reverse accounting entry as the call option is accounted for as a financial instrument in the consolidated financial statements			

Note 2: No financial liability measured at the present value of the redemption amount is recognized in the consolidated financial statements as the group is the holder of the call option, i.e. it has the right but not the obligation to buy the underlying shares held by the non-controlling interests.

Note 3: No accounting entry is required to either reclassify the fair value of option to equity on initial recognition or to reverse the accounting entries recorded in the separate financial statements in respect of the fair value changes of

the call option. This is because the call option is accounted for as a financial instrument, i.e. a derivative asset in the consolidated financial statements of Company Mars.

Combination of Call and Put Options

Symmetrical call and put options (synthetic forward)

The acquirer/parent can also opt to enter into a pair of call and put options with identical terms with the non-controlling interests. As discussed above, the combination of symmetrical call and put options economically mirrors that of a forward contract as it is virtually certain that either the acquirer/parent or the non-controlling interests would exercise the option they hold. In such scenarios, the option agreements are typically structured such that the other option will lapse when one of the options is exercised. In terms of valuation, the symmetrical call and put option are valued as if it is a forward contract.

Given the economic payoff of the symmetrical call and put options, the effect is reminiscent of the scenario where the acquirer/parent writes a put option over the shares held by the non-controlling interests. Effectively, the parent is obliged to buy the shares of the underlying subsidiary when either the call or put option is exercised.

Therefore, from the perspective of the consolidated financial statements, the accounting impact is the same as the scenario for the written put options. In a nutshell, a financial liability measured at the present value of the redemption value will be reclassified from the parent's equity on initial recognition. For subsequent measurement, it will be measured at amortized cost using the effective interest method in accordance with IFRS 9.

Non-controlling interests is measured at either fair value or proportionate share of the subsidiary's net identifiable assets at the date of acquisition. For subsequent measurement, profit or loss in the subsidiary will continue to be attributed to them. Dividends declared and paid by the subsidiary to the parent are eliminated. Dividends paid to the non-controlling interest are eliminated against the carrying value of the controlling interests.

At the settlement date, both parties will execute the transaction at the agreed strike price. Non-controlling interests will be de-recognized against the component of parent's equity from which the financial liability was first reclassified from. The financial liability will be de-recognized with the payment of cash or other financial asset by the parent.

Refer to Illustrations 15.2A and 15.3B for the accounting effects.

Asymmetrical call and put options

The section above deals with situations where the terms of the call and put options are identical. There could be circumstances in which the terms of the purchased call and written put options are not identical. When the terms are not the same, it is generally unlikely for the economic effects of the asymmetrical options to mirror that of a forward contract. In such situations, assessing whether the risks and rewards of the underlying shares in the subsidiary are transferred to the parent can be complex. Proper care must be taken to properly evaluate if the derivatives, in substance accord the parent with the ownership rights of the underlying shares.

In terms of accounting in consolidated financial statements, the call and put options are accounted for separately as that described above[12].

In a nutshell, on initial recognition, a financial liability measured at the present value of the redemption amount will be recognized with respect to the put option. This financial liability is reclassified from the acquirer/parent's equity in accordance with paragraph 23 of IAS 32. For subsequent measurement, that financial liability is measured at amortized cost using the effective interest method.

With regard to the call option, it will be measured at fair value on initial recognition pursuant to the requirements of IFRS 9. For purposes of subsequent measurement, it will be accounted for either as a financial asset or equity instrument depending on the terms of the call option. If it is the former, the financial asset is measured at fair value with changes in the fair value taken to profit or loss. Conversely, if the call option meets the definition of an equity instrument, changes in fair value are not recognized in the consolidated financial statements.

Non-controlling interests is recognized and measured at either fair value or proportionate share of the recognized fair value of the acquiree's identifiable net assets at the date of acquisition[13]. For subsequent measurement, non-controlling interests will continue to be attributed with their share of the profit or loss and each component of other comprehensive income in the subsidiary in accordance with paragraph B94 of IFRS 10. Similarly, dividends declared and paid by the subsidiary to the parent are eliminated and dividends paid to the non-controlling interest are eliminated against the carrying value of the controlling interests.

At the date when either the call or put option is exercised[14], the carrying value of non-controlling interests at that date is de-recognized against the component of the parent's equity for which the financial liability was initially reclassified from.

If the put option is exercised, the financial liability is also de-recognized when cash or other financial asset is paid in exchange for the shares of the subsidiary. If the call option lapses when the put option is exercised, the carrying value of the call option on the date where the put option is exercised is de-recognized.

Conversely, if the call option is exercised, the accounting treatment will differ slightly depending on whether the call option is accounted for as a financial asset or as an equity instrument. If it is the former, the fair value of the call option at the date of exercise will be de-recognized and that amount is included as part of the purchase consideration for the acquisition of the non-controlling interests. However, if the call option was accounted for as an equity instrument, the fair value on initial recognition that was recognized in the parent's equity will be included as part of the purchase consideration. Any difference between the carrying value of non-controlling interests de-recognized and the consideration paid is recognized in equity and attributed to the owners of the parent in accordance with paragraph B96 of IFRS 10. If the put option lapses upon the exercise of the call option, the redemption liability will be de-recognized against that component of the parent's equity from which the redemption liability was previously reclassified.

page 1231

The following examples illustrate the accounting when the asymmetrical call and put options in (1) a business combination setting and (2) outside a business combination setting.

ILLUSTRATION 15.4A Accounting when a pair of asymmetrical call and put option entered into as part of the business combination transaction do not provide current access to returns on the shares held by non-controlling interests

On 1 April 20x14, Company Caramel acquires 80% of Company Seasalt for cash consideration amounting to $28 million. The fair value of the identifiable net assets of Company Seasalt as at the date of acquisition is $26.5 million. In connection the acquisition, Company Caramel and the non-controlling interests entered into a pair of asymmetrical call and put options over the remaining 20% shares held by the non-controlling interests. Specifically, Company Caramel grants the non-controlling interests a put option to require Company Caramel to purchase the 20% in Company Seasalt based on the terms and conditions set out in the put option agreement when the put option is exercised. The non-controlling interests on the other hand, grants Company Caramel a call option to require the non-controlling interests to sell their 20% in Company Seasalt to Company Caramel at the exercise price and terms and conditions as agreed in the call option agreement.

The call option can only be exercised by Company Caramel on 1 April 20x14 until the expiry date of the call option which is on 31 March 20x16. The put option, on the other hand can only be exercised from 1 April 20x14 to the date of expiry which is 30 June 20x16. Both options can only be settled via physical delivery. Upon the exercise of the option by either party, the other option will lapse. The exercise price is determined by the following formula:

Put option

Exercise price = [8.5*EBITA at the date of exercise] Less External debt and Carrying value of non-controlling interests

Call option

Exercise price = [5*Profit after tax at the date of exercise + Profit after tax for the last 5 years]

The following table sets out the other salient details in connection with the illustration.

	$
Estimated exercise price of put option on 30 June 20x16	7,500,000
Present value of exercise price of put option on 1 April 20x14	5,785,124
Present value of exercise price of put option on 31 March 20x15	6,421,488
Present value of exercise price of put option on 31 March 20x16	7,000,000
Fair value of call option on 1 April 20x14	16,000
Fair value of call option on 31 March 20x15	20,000
Fair value of call option on 31 March 20x16	23,000
	page 1232
Fair value of put option on 1 April 20x14	(14,000)
Fair value of put option on 31 March 20x15	(10,000)
Fair value of put option on 31 March 20x16	(8,000)
Subsidiary Seasalt's profit after tax for the year ended 31 March 20x15	3,500,000
Subsidiary Seasalt's profit after tax for the year ended 31 March 20x16	4,000,000
Dividends paid by subsidiary Seasalt for the year ended 31 March 20x15	105,000
Dividends paid by subsidiary Seasalt for the year ended 31 March 20x16	120,000

The terms in the call and put option agreements do not allow any adjustment to be made to the exercise price when dividend is paid by Company Seasalt. The rights associated with the underlying shares such as voting rights and the right to receive dividends remain with the non-controlling interest. The excess of fair value over the net carrying value of the assets in Company Seasalt at the date of acquisition relates to an intangible asset with indefinite useful life. There is no impact on the post-acquisition profits on the group as the intangible asset with indefinite useful life remains unimpaired for FY20x15 and FY20x16.

On 31 March 20x16, Company Caramel exercised the call option and paid $5,400,000 based on the exercise price computed on the date of exercise. Taxes are ignored for the purpose of this illustration. Company Caramel's accounting policy for non-controlling interests is to measure them at their proportionate share of the recognized fair value of the acquiree's identifiable net assets at the date of acquisition in accordance with IFRS 3. It is also further assumed that Company Caramel has concluded based on an assessment of the terms and conditions of the options that it does not have, in substance, an existing ownership interest over the shares held by the non-controlling shareholders. The financial year end for both Company Caramel and Seasalt is March.

Analysis

Calculate the goodwill arising from the transaction

$

Fair value of consideration	27,984,000	(Note 1)
Non-controlling interests	5,300,000	(Note 2)
Less: Fair value of net identifiable assets	(26,500,000)	
Goodwill	6,784,000	

Note 1: Fair value of the consideration for the business combination transaction is derived as the excess of the cash consideration paid over the fair value of the call option, i.e. $28 million less $16,000. Essentially, Company Caramel has received two items namely control via 80% of Company Seasalt and the call option in exchange for the consideration of $28 million.

Note 2: The carrying value of non-controlling interests is derived as 30%*$26.5 million.

Prepare the accounting entries

In the separate financial statements of Company Caramel

		$	$
1 Apr 20x14	Dr Investment in subsidiary	27,998,000	
	Dr Call option – derivative asset	16,000	
	Cr Put option – derivative liability		14,000
	Cr Cash		28,000,000
	Being investment in Company Seasalt with call and put options		
31 Mar 20x15	Dr Cash	84,000	
	Cr Dividend income		84,000
	Being dividend income received		
	Dr Put option – derivative liability	4,000	
	Dr Call option – derivative asset	4,000	
	Cr Fair value changes on derivatives (PL)		8,000
	Being fair value changes on call and put options		
31 Mar 20x16	Dr Cash	96,000	
	Cr Dividend income		96,000
	Being dividend income received		
	Dr Put option – derivative liability	2,000	
	Dr Call option – derivative asset	3,000	
	Cr Fair value changes on derivatives (PL)		5,000
	Being fair value changes on call and put options		

Upon exercise of call option (i.e. put option will lapse)

Dr Investment in subsidiary	5,423,000	
Cr call option – derivative asset		23,000
Cr Cash		5,400,000

Being cash payment on exercise of call option by Company Caramel

Dr Put option – derivative liability	2,000	
Cr Fair value changes on derivative		2,000

Being de-recognition of put option liability

In the consolidated financial statements of Company Caramel

		$	$	
1 Apr 20x14	Dr Put option – derivative liability	14,000		Note 1
	Cr Investment in subsidiary		14,000	
	Being reversal of derivative liability in the separate financial statements			

		$	$	
1 Apr 20x14	Dr Share capital and reserves Dr Intangible asset	} 26,500,000		
	Dr Goodwill	6,784,000		
	Dr Other reserves – Parent's equity	5,785,124		
	Cr Redemption liability		5,785,124	Note 1
	Cr Non-controlling interests		5,300,000	
	Cr Investment in subsidiary		27,984,000	
	Being elimination of cost of investment at group level and recognition of redemption liability			
31 Mar 20x15	Dr Fair value changes on derivatives (PL)	4,000		Note 2
	Cr Put option – derivative liability		4,000	
	Being reversal of fair value changes on put option in the separate financial statements			
	Dr Finance cost	578,512		
	Cr Redemption liability – financial liability		578,512	
	Being accretion of interest on redemption liability			
	Dr Non-controlling interests (PL)	700,000		
	Cr Non-controlling interests (BS)		700,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	84,000		
	Dr Non-controlling interests (BS)	21,000		
	Cr Dividends paid		105,000	
	Being elimination of interco dividends			
31 Mar 20x16	Dr Fair value changes on derivatives (PL)	2,000		
	Cr Put option – derivative liability		2,000	
	Being reversal of fair value changes on put option in the separate financial statements			
	Dr Finance cost	636,364		
	Cr Redemption liability – financial liability		636,364	
	Being accretion of interest on redemption liability			
31 Mar 20x16	Dr Non-controlling interests (PL)	800,000		
	Cr Non-controlling interests (BS)		800,000	
	Being allocation of profit for the year to non-controlling interests			
	Dr Dividend income	96,000		
	Dr Non-controlling interests (BS)	24,000		
	Cr Dividends paid		120,000	
	Being elimination of interco dividends			

		$	$	
	Upon exercise of call option (i.e. put option will lapse)			
	Dr Fair value changes in derivative (PL)	2,000		
	Cr Put option – derivative liability		2,000	
	Being reversal of fair value changes on put option recorded in the separate financial statements			
	Dr Redemption liability	7,000,000		
	Cr Other reserves – Parent's equity		7,000,000	
	Being derecognition of redemption liability upon exercise of call option			
	Dr Non-controlling interests (BS)	6,755,000		Note 3
	Cr Other reserves – Parent's equity		1,332,000	
	Cr Investment in subsidiary		5,423,000	
	Being acquisition of non-controlling interests on exercise of call option			

Note 1: Accounting entries relating to the recognition of derivative liability for the put option in the separate financial statements is reversed to facilitate the recognition of the redemption liability at group level. The accounting entries relating to derivate asset for the call option is not reversed as it continues to be recognized as a derivative asset at the group level.

Note 2: Fair value changes on put option recorded in the separate financial statements are reversed for the purpose of accreting the interest on the redemption liability in the consolidated financial statements.

Note 3: Non-controlling interests' share in Company Seasalt as at 31 March 20x16 is derived as:

	$	
NCI's proportionate share of fair value of net identifiable assets at acquisition date	5,300,000	
NCI's share of profit after tax for FY20x15	700,000	[20%*3,500,000]
NCI's share of dividends for FY20x15	(21,000)	[20%*105,000]
NCI's share of profit after tax for FY20x16	800,000	[20%*4,000,000]
NCI's share of dividends for FY20x16	(24,000)	[20%*120,000]
	6,755,000	

ILLUSTRATION 15.4B Accounting when a pair of asymmetrical purchased call option and written put option entered into outside a business combination transaction do not provide current access to returns on the shares held by non-controlling interests

Assume the same facts as Illustration 15.4A with the exception that Company Caramel and the non-controlling interests entered into the call and put options over the 20% shares held by the non-controlling interests separately for cash at 30 September 20x14 and Company Caramel has assessed that the derivatives and the business combination

transaction are not linked transactions. The fair value of the call option asset and put option liability are $16,000 and $14,000 on 30 September 20x14 respectively. The rest of the details in Illustration 15.4A remains unchanged.

Analysis

Similarly, Company Caramel assessed that it does not have, in substance, an existing ownership interest over the shares held by the non-controlling shareholders for reasons discussed above. In this scenario, the computation of the goodwill will be different as the two transactions are not linked transactions. This is calculated as follows:

	$	
Fair value of consideration	28,000,000	
Non-controlling interests	5,300,000	As computed above
Less: Fair value of net identifiable assets	(26,500,000)	
Goodwill	6,800,000	

Accordingly, the accounting entries for the separate and consolidated financial statements will differ by:

In the separate financial statements of Company Caramel

		$	$
1 Apr 20x14	Dr Investment in subsidiary	28,000,000	
	Cr Cash		28,000,000
	Being investment in Company Seasalt		
30 Sep 20x14	Dr Call option – derivative asset	16,000	
	Cr Put option – derivative liability		14,000
	Cr Cash		2,000
	Being purchase of call option and receipt of premium on put option written		

In the consolidated financial statements of Company Caramel

		$	$
1 Apr 20x14	Dr Share capital and reserves	26,500,000	
	Dr Intangible asset		
	Dr Goodwill	6,800,000	
	Cr Investment in subsidiary		28,000,000
	Cr Non-controlling interests		5,300,000
	Being elimination of cost of investment at group level		
30 Sep 20x14	Dr Put option – derivative liability	14,000	
	Cr Other reserves – Parent's equity		14,000
	Being reclassification of premium paid on put option to equity		
	Dr Other reserves – Parent's equity	5,785,124	
	Cr Redemption liability		5,785,124
	Being recognition of redemption liability at group level		

The rest of the accounting entries as shown in Illustration 15.4A remains unchanged.

Forward Contracts

Instead of using options, an acquirer/parent may enter into a forward purchase contract with the non-controlling interests over the shares of the subsidiary. In this case, both the acquirer/parent and the non-controlling interests have the obligation to consummate the transaction, i.e. the acquirer/parent must buy and correspondingly, the non-controlling interest must sell the underlying shares in the subsidiary at the agreed price (strike price) at the settlement date. This is unlike the case for options where the holder of the option (either the call or put option), has the right but not the obligation to exercise the option. The writer of the option, on the other hand is obliged to fulfill the terms of the derivative when the option is exercised by the holder.

From the perspective of the consolidated financial statements, the accounting impact is identical to the scenario for symmetrical call and put options as described above. Please refer to the section above for a detailed discussion of the accounting effects.

OTHER ISSUES

Settlement of Derivatives Using Shares of Parent

The discussion so far has been devoted to circumstances in which the derivatives are settled gross by the parent transferring cash or other financial assets on the date of settlement itself in exchange for the underlying shares.

It is also possible for the parent to enter into contracts that require the settlement to be in the form of a fixed or variable number of the parent's own shares instead of cash or other financial assets. For instance, the parent may write a gross-settled put option over the shares held by the non-controlling interests that provides for the parent to transfer either a fixed or variable number of its own shares upon the exercise of the option by the holder of the put option (i.e. the non-controlling interests).

In this situation, paragraph 23 of IAS 32 does not apply given that the contract does not contain an obligation for the parent to purchase its own equity instruments (i.e. the shares held by the non-controlling interests) for cash or another financial asset. The parent's own shares to be used for the settlement does not fall within the definition of a

financial asset. However, it is our view that paragraph 23 of IAS 32 can be applied by analogy. This is because paragraph 21 of IAS 32 is clear to state that an obligation to deliver a variable number of its own equity instruments such that the fair value of the equity instruments to be delivered equals the amount of the contractual obligation is a financial liability. Essentially, the parent is using its own shares as "cash" in the settlement of the liability in this case. This view would also be consistent with the rationale articulated in paragraph 11 of the Basis to Conclusion to IAS 32. In particular, the Board is of the view that "without the requirement to recognize a financial liability for the present value of the share redemption amount, entities with an identical obligation to deliver cash in exchange for their own equity instruments could report different information in their financial statements depending on whether the redemption clause is embedded in the equity instrument or is a free-standing derivative contract". This demonstrates the Board's intention to achieve similar accounting treatment for similar obligations.

Accordingly, the parent recognizes a financial liability at the present value of the redemption amount in the consolidated financial statements. The exception is when the contract entered into is a call option for which there is no obligation on the part of the parent as the holder of the option. If the call option meets the "fixed-for-fixed" criteria in IAS 32, it is accounted for as an equity instrument in accordance with IAS 32 in the consolidated financial statements.

As discussed above, paragraph 16(a) and (b) of IAS 32 sets out the criteria for determining if the contract meets the definition of an equity instrument. Paragraph 16(a) is satisfied as the contract described above generally does not include any contractual obligation to either deliver cash or another financial asset to the non-controlling interests. Neither are they required to exchange financial assets or financial liabilities with the non-controlling interests under conditions that are potentially unfavorable to the parent. Therefore, whether the contract will be classified as an equity instrument will then be dependent on whether it satisfies paragraph 16(b) of IAS 32. In particular, the contract is an equity instrument if it can be settled only by the parent receiving or delivering a fixed amount of cash or another financial asset for a fixed number of its own equity instruments.

page 1238

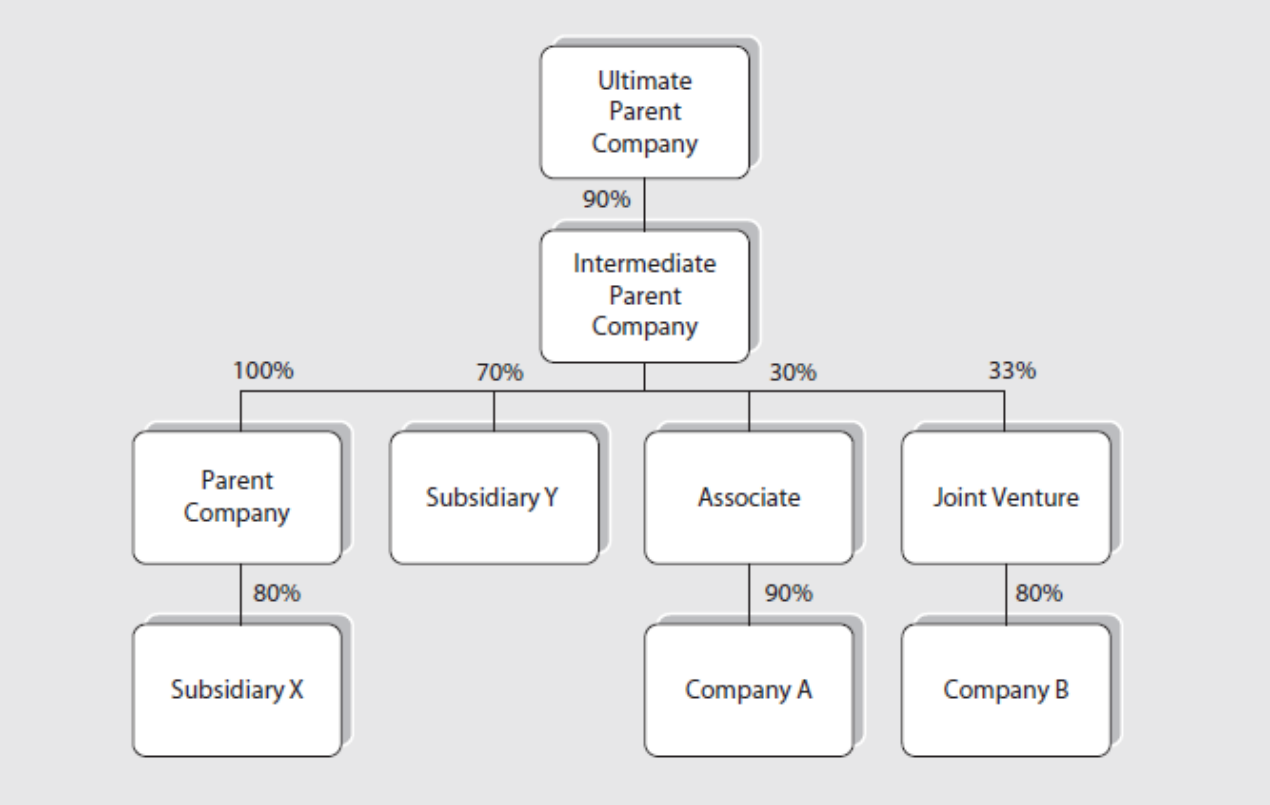
However, this paragraph does not address the situation where the contract is settled using the parent's own equity instruments. Similarly, it is our view that this paragraph can be applied by analogy to contracts which provide for an exchange of a fixed number of a particular category of equity instruments for a fixed number of another category of equity instruments. Hence, if the call option contract can only be settled by the parent delivering a fixed amount of its own shares in exchange for a fixed number of shares in the subsidiary held by the non-controlling interests, this contract should be accounted for as an equity instrument in the consolidated financial statements.

However, if the contract is not classified as an equity instrument, it would be accounted for as a financial liability in accordance with paragraph 23 of IAS 32.

Derivatives Written on Own Equity in Complex Group Structures

Up to this juncture, the discussion above has centered on the scenario in which the acquirer/parent has entered into derivative contracts over the shares held by the non-controlling interests in a simple group structure. Invariably, the question arises whether the principles articulated in the preceding discussion will apply in a complex group structure such as the one set out in Figure 15.7.

FIGURE 15.7 Derivative contracts over own equity in a complex group structure



Generally, in the consolidated financial statements of the parent, the principles articulated above would apply to the derivative contracts that either obligates the parent or any other entity within the group (as defined in IFRS 10) or provide any entity within the group with the option to purchase the shares in a subsidiary within the group that are held by the non-controlling interests.

Applying the principles to the complex group structure above, what this effectively means is that the accounting principles described in the preceding sections would apply to the following scenarios in the consolidated financial statements of the ultimate parent company:

(a) Ultimate parent company enters into a derivative contract on the shares held by the non-controlling shareholders in the intermediate parent company (i.e. 10%)

(b) Ultimate parent company enters into a derivative contract on the shares held by the non-controlling shareholders in subsidiary X (i.e. 20%)

(c) Ultimate parent company enters into a derivative contract on the shares held by the non-controlling shareholders in subsidiary Y (i.e. 30%)

(d) Intermediate parent company enters into a derivative contract on the shares held by the non-controlling shareholders in subsidiary X (i.e. 20%)

(e) Intermediate parent company enters into a derivative contract on the shares held by the non-controlling shareholders in subsidiary Y (i.e. 30%)

(f) Parent company enters into a derivative contract on the shares held by the non-controlling shareholders in subsidiary X (i.e. 20%)

(g) Parent company enters into a derivative contract on the shares held by the non-controlling shareholders in subsidiary Y (i.e. 30%)

However, the same accounting treatment will not apply to the following transactions:

(h) Ultimate parent company enters into a derivative contract over the shares held by the other minority shareholders in Company A (i.e. 10%)

(i) Intermediate parent company enters into a derivative contract over the shares held by the other minority shareholders in Company A (i.e. 10%)

(j) Ultimate parent company enters into a derivative contract over the shares held by the other minority shareholders in Company B (i.e. 20%)

(k) Intermediate parent company enters into a derivative contract over the shares held by the other minority shareholders in Company B (i.e. 20%)

The rationale is because Company A and B are subsidiaries of ultimate parent company's associate and the joint venture. Associates and joint ventures do not form part of the group as the group does not have a controlling interests over them. Hence, the shares held by other minority shareholders in Company A and B are accordingly not non-controlling interests and therefore "own equity" of the ultimate parent company in the consolidated financial statements[15].

The analysis above is focused at the ultimate parent company's level where consolidated financial statements is assumed to be prepared. If consolidated financial statements are prepared at other levels in addition to those at the ultimate parent company level, a separate evaluation of the derivative contracts entered over the shares held by the non-controlling interest in the other entities is required to be done at that level where the additional consolidated financial statements is presented. For instance, if the intermediate parent company above prepares consolidated financial statements and the ultimate holding company writes a put option over the shares held by the non-controlling shareholders in subsidiary X or subsidiary Y, there would be no accounting implications in the consolidated financial statements of the intermediate parent company as the obligation to purchase the shares does not rest with the intermediate parent company.

NEXT STEP FORWARD

Accounting for derivatives on own equity has been an area that is complex and controversial. In May 2012, the IFRS Interpretations Committee issued a draft interpretation DI/2012/2: *Put Options Written on Non-controlling Interests* which proposed that all changes in the measurement of the put option written on non-controlling interests ("NCI puts") are recognized in profit or loss in accordance with IAS 39/IFRS 9. The proposals in the draft interpretation were subsequently affirmed as the correct interpretation of existing standards in January 2013 after an analysis of the comment letters received.

However, the Interpretations Committee was of the view that NCI puts measured on a net basis at fair value provides better information to users of financial statements as opposed to measurement on a gross basis as required by IAS 32. This is consistent with the accounting for other derivatives within the scope of IAS 39/IFRS 9. Furthermore, respondents had urged the Board or the Interpretations Committee to address the accounting for NCI puts on a more comprehensive basis.

Consequently, the Interpretations Committee prior to finalising the draft interpretation in January 2013, recommended the Board to reconsider the requirements in paragraph 23 of IAS 32. It also recommended that the analysis to be extended to deliberate whether NCI puts and NCI forwards should be accounted for differently as compared to other derivatives written on an entity's own equity.

In March 2013, the Board discussed the issue and tentatively decided to reconsider the requirements in paragraph 23 of IAS 32 as well as whether all or particular put options and forward contracts written on an entity's own equity should be measured on a net basis at fair value. In June 2013, the Board further considered and decided that this issue should be considered as part of the broader project of Financial Instruments with Characteristics of Equity.

CONCEPT QUESTIONS

CQ15.1 Explore the reasons as to why a parent may choose not to acquire 100% of the shares in an acquiree at the date of acquisition and how it can safeguard the remaining interests by entering in derivative contracts.

CQ15.2 Discuss how a put option, call option or a combination of call and put option may be utilized by a parent to safeguard the shareholdings held by non-controlling interests.

CQ15.3 Explain the rationale as to why the combination of a symmetrical call and put option will effectively result in a forward contract being entered into when such transactions are entered as part of a business combination transaction.

CQ15.4 Discuss the accounting treatment of put option entered into as part of a business combination transaction in both the separate and consolidated financial statements

CQ15.5 Discuss the factors to consider in the assessment of whether the derivatives contracts entered into by the parent accord itself with ownership interests over the underlying shares.

PROBLEMS

P15.1 Accounting for derivatives entered into as part of business combination when the derivatives provide current access to returns

On 30 June 20x8, Company P acquires 90% of Company S for cash consideration amounting to $3 million. The fair value of the identifiable net assets of Company S as at the date of acquisition is $2.8 million. In connection with the acquisition of Company S, Company P and the non-controlling interests entered into an agreement in which Company P wrote a put option over the 10% shares held by the non-controlling interests. The put option can be exercised by the non-controlling interests at any point in time from 30 June 20x8 to 30 June 20x9 and it can only be settled via physical delivery. Upon exercise of the put option by the non-controlling interests, Company P is required to purchase the entire 10% shares held by the non-controlling interests for a fixed price of $800,000.

The following table sets out the other salient details in connection with the illustration.

	$
Fixed price to be paid upon exercise of put option	800,000
Present value of exercise price on 30 June 20x8	683,000
Present value of exercise price on 31 December 20x8	710,000
Present value of exercise price on 30 June 20x9	800,000
Fair value of put option on 30 June 20x8	(6,000)

Fair value of put option on 31 December 20x8	(5,000)
Fair value of put option on 30 June 20x9	(4,000)

page 1242

Subsidiary S's profit after tax for the year ended 30 June 20x8	950,000
Subsidiary S's profit after tax for the year ended 30 June 20x9	2,200,000
Dividends paid by subsidiary S for the year ended 30 June 20x8	
- Company P's share	81,000
- Non-controlling interests' share	9,000
Dividends paid by subsidiary S for the year ended 30 June 20x9	
- Company P's share	96,000
- Non-controlling interests' share	24,000

For the purpose of this question, the terms in the put option agreement do not allow any adjustment to be made to the exercise price when dividend is paid by Company S. It is further assumed that the excess of fair value over the net carrying value of the assets in Company S at the date of acquisition relates to an intangible asset with indefinite useful life. There is no impact on the post-acquisition profits for the group as the intangible asset with indefinite useful life remains unimpaired for both years ended 30 June 20x8 and 20x9.

On 30 June 20x9, the non-controlling shareholders exercised the written put option. Taxes are ignored for the purpose of this illustration. Company P has determined the appropriate discount rate for the redemption liability to be 10%. The financial year of Company P and Company S is June.

Analyze if the put option entered into provide Company P with current access to returns on the 10% held by non-controlling interests and work out the accounting entries for the transaction for both 30 June 20x8 and 30 June 20x9 in both the separate and consolidated financial statements of Company P.

P15.2 Accounting for derivatives entered into as part of business combination when the derivatives do not provide current access to returns

Assume the same fact pattern as P15.1, assuming that the put option does not provide Company P with present ownership with current access to returns on the 10% held by non-controlling interests, work out the accounting entries for the transaction for both 30 June 20x8 and 30 June 20x9 in both the separate and consolidated financial statements of Company P.

P15.3 Accounting for non-symmetrical call and put options entered into as part of business combination

On 1 January 20x4, Company P acquires 70% of Company S for cash consideration amounting to $35 million. The fair value of the identifiable net assets of Company S as at the date of acquisition is $28 million. In connection the acquisition, Company P and the non-controlling interests entered into a pair of asymmetrical call and put options over the remaining 30% shares held by the non-controlling interests. In particular, Company P grants the non-controlling interests a put option to require itself to purchase the 30% in Company S based on the terms and conditions set out in the put option agreement when the put option is exercised. The non-controlling interests on the other hand, grants Company P a call option to require the non-controlling interests to sell their 30% in Company S at the exercise price and terms and conditions as agreed in the call option agreement.

The terms in the call and put option do not mirror each other. The call option can only be exercised by Company P on 1 January 20x4 until the expiry date of the call option which is on 31 December 20x6. The put option, on the other hand can only be exercised from 1 April 20x4 to the date of expiry which is 30

page 1243

June 20x7. Both options can only be settled via physical delivery. Upon the exercise of the option by either party, the other option will lapse. The exercise price is determined by the following formula:

Put option

Exercise price = [8*Profit after tax at the date of exercise + Profit after tax for the last 3 years]

Call option

Exercise price = [10.2*EBIT at the date of exercise] Less External debt and Carrying value of non-controlling interests

The following table sets out the other salient details in connection with the illustration.

	$
Estimated exercise price of put option on 31 December 20x6	8,200,000
Present value of exercise price of put option on 1 January 20x4	6,544,488
Present value of exercise price of put option on 31 December 20x4	7,231,123
Fair value of call option on 1 January 20x4	18,000
Fair value of call option on 31 December 20x4	22,000
Fair value of call option on 31 December 20x5	25,000
Fair value of put option on 1 April 20x4	(16,000)
Fair value of put option on 31 December 20x4	(12,000)
Fair value of put option on 31 December 20x5	(9,000)
Subsidiary S's profit after tax for the year ended 31 December 20x4	4,500,000
Dividends paid by subsidiary S for the year ended 31 December 20x4	200,000

The terms in the call and put option agreements do not allow any adjustment to be made to the exercise price when dividend is paid by Company S. The rights associated with the underlying shares such as voting rights and the right to receive dividends remain with the non-controlling interest. The excess of fair value over the net carrying value of the assets in Company S at the date of acquisition relates to an intangible asset with indefinite useful life. There is no impact on the post-acquisition profits on the group as the intangible asset with indefinite useful life remains unimpaired for FY20x5.

On 31 December 20x14, Company P exercised the call option and paid $6,500,000 based on the exercise price computed on the date of exercise. Taxes are ignored for the purpose of this problem. Company P's accounting policy for non-controlling interests is to measure them at their proportionate share of the recognized fair value of the acquiree's identifiable net assets at the date of acquisition in accordance with IFRS 3. It is also further assumed that Company P has concluded based on an assessment of the terms and conditions of the options that it does not have, in substance, an existing ownership interest over the shares held by the non-controlling shareholders. The financial year end for both Company P and S is December. Prepare the accounting entries for 20x14.

[1] Paragraph 16(b)(ii) of IAS 32 states that the derivative will meet the definition of an equity instrument if the derivative will be settled only by the issuer exchanging a fixed amount of cash or another financial asset for a fixed number of its own equity instruments.

[2] An example where the derivative contract does not result in an obligation to buy own equity entity is when the acquirer/parent purchases a call option on the shares held by the non-controlling interests and the call option does not provide the acquirer/parent with ownership interests of the underlying shares and the associated returns. The rationale is because there is no obligation on the part of the acquirer/parent to transfer cash or other financial asset as the acquirer/parent in this case is the holder of the call option, i.e. it has the right but not the obligation to buy the underlying shares held by the non-controlling interests.

[3] An example provided by IAS 32 is an entity's obligation under a forward contract to purchase its own equity instruments for cash.

[4] IFRS 10 defines potential voting rights as rights to obtain voting rights of an investee.

[5] July 2010 Staff Paper to the IFRS Interpretations Committee Meeting.

[6] Paragraph B5.4.6 of IFRS 9 requires an entity to adjust the carrying amount of the financial asset or financial liability to reflect actual and revised estimated cash flows if it revises its estimates of payments or receipts. The carrying amount is recalculated by computing the present value of estimated future cash flows at the financial instrument's original effective interest rate. The adjustment is recognized in profit or loss as income or expense.

[7] An example for this is when the terms of the written put option with a fixed exercise price includes an adjustment clause that allows the fixed exercise price to be reduced if dividends is paid to the non-controlling interests.

[8] This separate component of the parent's equity can be retained earnings, share premium or any other reserves.

[9] In this case, the call option would not meet the definition of an equity instrument if it is settled by the non-controlling interests transferring a fixed number of shares in the subsidiary in exchange for the cash payment by the parent equivalent to the fair value of those shares at the exercise date.

[10] The initial fair value of the call option will be measured using an option-pricing model as it is generally not common for a separate amount to be paid for the call option when it is part of a business combination transaction.

[11] The fair value of the call option in the consolidated financial statements would be identical to the fair value in the separate financial statements given that the derivative is measured as a financial asset in accordance with the requirements of IFRS 9.

[12] For purpose of accounting in the separate financial statements, the asymmetrical call and put options are accounted for separately as well.

[13] This is assuming that Approach B is adopted for the accounting of the written put option.

[14] At the date of exercise, if the fair value of the shares of the subsidiary is higher than the exercise price, the parent will have the incentive to exercise the call option. Conversely, when the fair value of the shares of the subsidiary is lower than the exercise price, the non-controlling interest will have the incentive to exercise the put option. Hence, in either case, one party is likely to exercise the option.

[15] Similarly, if derivatives contracts over shares held by the other shareholders in an associate or joint venture of the group will not be accorded the same accounting treatment as described above in the consolidated financial statements of the group as they do not constitute "own equity". These derivatives are accounted for as derivative financial instruments in the consolidated financial statements in accordance with IAS 39/IFRS 9.

INDEX

A

Ability, 43–46
- currently exercisable, 44
- delegated power, 45
- principal or agent, 45
- protective rights, 44
- substantive rights, 43–44
- unilateral ability, 44
- variability of returns from involvement with investee, 46

Accounting
- based information, 5

based measures of risk, 7–14
IAS 37 *Provisions, Contingent Liabilities, and Contingent Assets*, 13
IFRS 8 *Operating Segments*, 7–11, *See also* Operating segments
IAS 24 *Related Party Disclosures*, 12–13, *See also* Related parties
IFRS 7 *Financial Instruments: Disclosures*, 13–14
for business combinations, 159–237
exposure, 679
for investments in associates, 329
Accounting for taxes on income, 979–1060, *See also* IAS 12 *Income Taxes*
assets carried at fair value, 1016–1019
assets partially deductible or deductible in excess, 1031–1034
cumulative deductible temporary differences
of liabilities, determining, 996–1002
cumulative taxable temporary differences of assets, determining, 988–996
deferred tax as a liability and an asset, 982–983
initial recognition of assets and liabilities
temporary differences arising from, 1014–1015
presentation and disclosures, 1025–1028
special issues, 1029–1034
income taxes on intercompany transactions, 1029
tax as an expense, 983–987
tax base of a liability, 997–1000
tax base of an asset, 989–996
tax expense in the income statement, 1003–1013
unused tax losses and unused tax credits, 1016–1024
taxable future profit less than probable, 1020–1024

Acquisition method, 77–80
amount of consideration transferred, determining, 80–84
fair values of equity exchanged, 83
application of, 78
costs payment, transaction for, 143–145
reverse acquisition, exchange of shares in, 79
under IFRS 3, application of, 69–158
Actual rate, 687
After-tax basis, 171
Amalgamation, 76
Amortization, effects of, 164–165
Amortized cost, 820
Annual report disclosures, extracts of, 1041–1045
deferred taxes, 1044
finance costs, 1042

income tax, 1041
tax expense, 1043
taxation, 1042
Anti-dilution
sequencing, 1083–1086
shares, 1075
Arbitrage Pricing Theory (APT) model, 22
Asset and liability approach, 987–988
Asset substitution, 160–161, 206
Asset transfers in more complex settings, 508–514
between a subsidiary and an associate, 509–515
between fellow subsidiaries, 509
between parent and indirect subsidiaries, 508
Assets carried at fair value, 1016–1019
Associate, 50

B

Balance sheet liability approach, 988, 1002
Bargain purchase, gain from, 106
Basic EPS, 1062–1063
numerator in, 1063–1064
Binomial model (open-form), 1133–1134
Black-Scholes (BS) model (closed-form), 1132
Bonus issues, 1067–1068
Borrowing cost, 950–951
Bottom-up approach, 202
Business combination, 73–77, 1149–1150
accounting for, 51–52
achieved in stages, 489–494
goodwill determination in, 490–494
previously held equity interest, remeasurement of, 489–490
businesses become subsidiaries of acquirer, 75
modes of, 74
net assets of acquired businesses, 74–75
purchase of net assets versus purchase of equity, 52
by selling entity, accounting for, 1165
IFRS 3 *Business Combinations*, 52–53
IFRS 10 *Consolidated Financial Statements*, 51
in separate financial statements, 1166–1169
accounting for the acquirer, 1166–1167
accounting for the selling company, 1167
share based payments in, 1128
transactions, determining, 121–145
pre-existing relationships, settlement of, 123–129, *See also individual entry*

reasons for transaction, 122
separability of transactions, indicators of, 122
separate transactions, 121
transaction initiation, 122–123
transaction timing, 123
transfer of net assets to a newly formed entity, 76–77
under common control, accounting for, 1149–1150
Business firms, risk measurement and reporting by, 5–7
accounting-based information, 5
descriptive information, 5
financial ratios, 5
modes of, 7
sensitivity analysis, 5
summary metrics, 5
uncertainty, risk, information, and value, interactions between, 6
value at risk (VaR), 5
Business model test, 812–813
determination, 812–813

C

Call option, 890, 892
Capital Asset Pricing Model (CAPM), 22
Capital structure and EPS, 1063
complex, 1063
simple, 1063
Carry forward losses, 1004
Carrying amounts of assets, 249–255
adjustments to eliminate profit or loss in, tax effects on, 249–255
Cash flow hedge accounting, 929–936
highly probable forecasted transaction, 932–936
period-to-period basis and cumulative, 930

Cash-settled share-based transactions, 1112–1116
settlement method, 1117–1119
choice of, 1120–1124
with the employee, 1120–1121
with no obligation to settle in cash, 1118
share-based payment arrangements, 1117–1124
Closed-form model, 1132
Co-insurance effect, 33
Common control, 1143–1189
accounting for business combinations under, 1149–1150

business combination under common control
accounting for acquirer, 1166–1167
accounting for selling company, 1167
by selling entity, 1165
in separate financial statements, 1166–1169
exemption under IFRS 3, 1143–1149
combining entities or businesses, 1145
common control by same parties, 1145–1146
control not transitory, 1145
nature of acquisition, business versus assets, 1145
transitory control, 1145–1149
financial statement presentation, 1160–1165
non-restatement of, 1163–1164
restatement of comparative financial statements, 1160–1162
restatement of current financial statements, 1160–1162
group reorganizations, 1169–1170, 1173–1176, *See also individual entry*
group restructuring in separate financial statements, 1178–1183
new company for corporate restructurings, utilization of, 1171–1172
multiple acquisitions, 1172
single acquisition, 1172
new company for spinning off existing business, utilization, 1176–1178
non-controlling interests
in business combination of entities under, 1180
under, acquisition of, 1155–1160
predecessor method of accounting, application of, 1151–1155
Complex consolidation issues, 441–673, *See also* Indirect ownership interests
asset transfers in more complex settings, 508–514
no change in significant influence, 507–508
profit upon disposal of subsidiaries, 515–516
self-study illustrations on, 525–573
Complex intra-group transactions, 295–300
Compound financial instruments, 795–808
accounting from holder's perspective, 796
accounting from issuer's perspective, 797
adjustment provisions, 807
common adjustment clauses in, 807
controversies relating to accounting of, 797–800
incremental method of allocation, 798
measurement of interest expense, 799–800
early redemption option, 803–806
inducing early conversion of a bond, 802
partial conversion of bond before maturity, 800–801
redemption of, 801–802
separation effect of debt and equity elements in, 808

special considerations for, 1039–1040
Consolidated cash flow statements, 516–524, 642–673
involving a foreign subsidiary, 642–673
involving foreign operations, 521–524
Consolidated financial statements, 332
Consolidated information preparation, 32–34
economic incentives for, 32–34
efficient contracting, 33
information perspective, 32–33
opportunism, 34
Consolidated profit or loss, 249
Consolidated retained earnings, 467–468
analytical check on, 275–287, 467–478
components of, 278
with fair value adjustments, 470
goodwill arising from acquisition date, 276–278
legal entities' retained earnings, 276
upstream or downstream transfers, 277
with subsidiaries and associates, 349–374
analytical check of, 336–337
components of, 337
comprehensive problem, 357, 365
Consolidated tax expense, 249
Consolidation equation, 206
Consolidation process/theories, 31, 52–60, 71–73
consolidation elimination entries and adjustments, 71
consolidation equation, 73
consolidation worksheets, 71
entity (economic unit) theory, 55
equity method versus, 332–334
implicit consolidation theory underlying IFRS 3, 57–60
non-controlling interests in, 53
parent theory, 55, 56
partially-owned subsidiary, 52, 54
proprietary theory, 56
wholly owned subsidiary, 53

Consolidation under IFRS 10, 239–294, *See also* Consolidated retained earnings; Intercompany transfers of fixed assets; Intragroup transfers
intragroup transactions and balances, elimination of, 240–241
principles governing elimination, 241
realized intragroup transactions, elimination of, 242–246, *See also individual entry*

Contingency settlement provisions, 795
Contingent liabilities and provisions, 89–91
Contingently issuable shares, 1071–1072, 1080–1082
Contract accounting, 296
Contractor and customer
  contract revenue, costs and gross profit, 297–298
  journal entries, 298, 299
  statement of financial position, 299
Contractual cash flow characteristics test, 813–816
  contractually-linked financial instrument, 815–816
    flowchart, 816
Control, 38–39, 328, *See also* Common control
  attributes of, 39–51
    ability, 43–46, *See also separate entry*
    assessing control versus allocation of profit, 48
    continuous assessment of control, 46
    control over another entity, 42
    currently exercisable, 44
    potential voting rights, 41
    power, 40–41
    power over key management personnel, 42
    protective rights, 44
    special relationships, 43
    statutory and contractual provisions, 42–43
    substantive rights, 43–44
    unilateral ability, 44
    voting rights, 41
  determination of control, 39
  direct control, 47
  economic boundaries as defined by IFRS 10, 38–39
  indirect control, 47
Corporate restructurings, new company for, utilization of, 1171–1172
  multiple acquisitions, 1172
  single acquisition, 1172
Corporate veil, 77
Cost method, 330, 574, 607–608
  equity method
    fair valuation and, comparison, 331
    versus, 328–331
  FVTPL and, comparison, 331
Credit exposure at FVTPL, 955
Credit risk, 14, 18, 844–845, 903
Credit valuation adjustment (CVA), 895
Cross-currency swap, 887

Cumulative net taxable temporary differences (CTD), 1020
Cumulative taxable temporary differences of assets, determining, 988–996
Currency board system, 677
Current tax expense, 1002
Current tax liabilities, 982
Current tax payable, 1002
Current temporary differences, 987
Currently exercisable ability, 44

D

Date of settlement, 1212–1213
Debit valuation adjustment (DVA), 895
Debt for equity swaps, 835
Debt instrument, 826–829
Debt versus equity, 793–795
Deductible temporary differences, 981, 988, 1001–1002
  special considerations for, 1001–1002
Deemed acquisitions, 593–602
  participation of rights issue by investor, 598–602
  share-buyback by associate, 594–598
Deemed disposals, 602–606
  non-participation of associate's rights issue, 602–606
Deferred tax, 980
  expense, 1002
  as a liability and an asset, 982–983
Deferred tax asset (DTA), 94–95, 249–250, 981, 996, 1020–1024
Deferred tax liabilities, 94–95, 982, 987, 1002
  determination, asset and liability approach for, 987–988
Delegated power, 45
  decision-making authority, 45
  remuneration, 46
  rights held by other parties, 46
Depreciation, effects of, 164–165
Derecognition, 832–835
  of financial assets, 834–835
  of financial liability, 835
Derivative contracts on own equity
  accounting for acquirer/parent current access to the returns
    analysis, 1203–1029
    date of settlement, 1201–1202
    initial recognition, 1200–1201
    subsequent measurement, 1201

accounting, for shares held
consolidated financial statements, 1197–1198
risks and reward analysis, 1198–1200
separate financial statements, 1196–1197
characteristics and types, on shares
call options, 1193–1195
forward purchase contracts, 1195–1196
put options, 1193
complex group structures, 1238–1240
non-controlling interests do not provide present access to returns on the shares held
analysis, 1213–1220
call options, 1220–1229
combination of call and put options, 1229–1236
forward contracts, 1237
put options, 1210–1213
settlement using shares of parent, 1237–1238
Derivative financial instruments, 819, 880–894
accounting for derivatives, 895–900
closing of position or at expiration of contract, 896
during life of contract, 896
'hedge accounting' rules, 895
at inception, 895
fair value of option contracts, determining, 894
financial asset, 832–835
common situations for, 834
financial liability, 835
situations that do not qualify for, 834
forward contracts, 881–889
forward rate agreement (FRA), 888
forward-type derivatives, 881
futures contracts, 889–890
non-deliverable forwards (NDF), 885–888
option contracts, 890–894
option-type derivatives, 881
statement of financial position, 894
strike price and the underlying, relationship between, 893
types of, 881
uses of, 881
Descriptive information, 5
Diluted EPS, 1062–1063, 1074–1087
anti-dilution sequencing, 1083–1084
assumptions, 1077
computation of, adjustments to, 1006–1007
denominator of, 1077

numerator of, 1076
contingently issuable shares, 1080–1082
ordinary shares or cash, 1082–1083
when potential ordinary shares
are convertible instruments, 1079–1080
are options and warrants, 1077
presentation and disclosures, 1086–1087
treasury method, 1078–1079
Direct acquisition of net assets of acquired businesses, 74–75
Direct non-controlling interests, 443, 450
re-enactment of, 444
Direct quote of foreign exchange rate, 677
Direct significant influence, 50–51
Discount, 678
Disposal of associates, 593
Dividends to non-controlling interests, allocation of, 174
Dividends treatment, for investment in associate, 348–349
Downside risk, 3
Downstream sale, 255
Downstream transactions, 343–345
Downstream transfer, 375
Dynamic loan loss provisioning, 865

E

Earnings per incremental share (EPIS), 1083
Earnings per share (EPS), 1061–1095, *See also* Weighted average number of shares
basic, 1062–1063
capital structure and, 1063–1064
complex, 1063
simple, 1063
diluted EPS, 1062–1063, *See also individual entry*
preference dividends, adjusting for, 1064
Effective interest rate (EIR) calculation, 821–826
financial assets modifications, 825–826
floating rate EIR, 822–823
revisions to estimated cash flows, 823–825
Efficient contracting, 33
Employee share options, 1127–1128
accounting issues relating to, 1127–1128
in business combination, 1128
Employees remuneration for future services, 129–143
contingent payment to key employees, 135–136
determining indicators, 132
employee compensation arrangements, 131

remuneration versus consideration transferred, 133–135
replacement awards, 138–140
post-combination services, 139
pre-combination services, 139
replacement share awards in business combination, 140–143
share-based payment transactions, 137–138

Entity theory, 55, 168
application to non-controlling interests, 169
Entity's functional currency
determining factors, 684–685
exposure, 680–682
factors to indicate, 683–684
Equity accounting
entries, 337
of foreign associates, 708–711
methodology of, 334–335
special issues relating to, 375–376
transfers at a loss, 290–294
under IAS 28, 327–440
equity method versus cost method, 328–331
significant influence, 328–330
Equity method, 49, 330–331, 608
conditions for recognition as, 794–795
consolidation versus, 332–334
differences in presentation, rationale for, 332
financial statement differences between, 333–334
cost method to equity method conversion, 337–338
fair valuation and cost method, comparison, 331
FVTPL and, comparison, 331
procedures relating to, 337–349
in its separate financial statements, 342
Equity securities, 830
Equity-settled share-based transactions, 1100–1112
cancellations of, 1110–1111
fair value at grant date, 1101
fair value determination in, 1102
forfeiture rate, 1101
grant date, 1101
intrinsic value, 1101–1102
measurement date, 1101
modifications to, 1107

occurred at vesting date, 1110
that increase total fair value, 1107–1109
that reduce the total fair value, 1110
non-vesting condition, 1101
performance share option plans, 1105–1107
reload feature, 1101
replacement equity instruments, 1111
settlements of, 1110–1111
share options exercised after vesting date, 1107
variable share option plans, 1105–1107
vesting condition, 1101
vesting date, 1101
Exchange rate
linked to a basket of currencies, 677
linked to a key currency, 676–677
Executive share option plans (ESOPs), 1098
Expected loan loss method, 867
Expense, definition, 1128
Ex-post, 31

F

Fair value, 580–582
accounting methodology, 866
adjustments of identifiable net assets, amortization, 338–340
determination in equity-settled share-based transactions, 1102
differentials, amortization of, 174
of foreign currency non-monetary items, 718–723
at grant date, 1101
of share options estimation, 1132–1134
Fair value hedge accounting, 913–915
exposed monetary asset, 920–921
firm commitment, 926–929
FVOCI investment with a put option, 924–926
hedge of inventory (fair value hedge), 922–923
Fair value measurement, 112, 859–864
active versus inactive markets, 859–860
in financial instruments measurement, 858
framework, 860–862
Level 1 assets (most liquid), 861
Level 2 assets, 861–862
Level 3 assets (least liquid), 862
valuation techniques, 860
Fair value through other comprehensive income (FVOCI), 342, 826
measurement at, 826–830

debt instrument, 826–829
equity securities, 830
Fair value through profit or loss (FVTPL), 331, 342, 826
measurement at, 831–832
Finance costs, 1043
Finance theory, 3
Financial Accounting Standards Board (FASB), 168
Financial assets, 811–812, 818, 1225–1229
classification of, 811–812
impairment of, 839–841
Financial instruments, 789–877, *See also* Compound financial instruments
allocation of transaction costs, 809
classification of, 792–793
equity, 793
financial assets, 793
financial liabilities, 793
classification, recognition and measurement, 789–877

compound financial instruments, 795–808
contingency settlement provisions, 795
disclosures, 856–857
classification, 856–857
measurements, 856–857
expected credit losses for categories, 840
financial assets and financial liabilities, offsetting, 855–856
general approach, 841–842
loss allowance, 762
significant increase in credit risk, 844–845
IAS 32 and IFRS 9, scope of, 792
impairment of financial assets, 858
interest revenue and expected credit losses recognition, 847–854
liability and equity instruments, classification of, 795
measurement, 817–819
fair value evaluation as basis for, 858
financial asset, 818
financial liability, 818–819
initial recognition, 817–818
subsequent measurement, 818–819
recognition, 810–811
share repurchase, 809–810
simplified approach, 855
trade receivables, 855

standards pertaining to, 791–792
Financial instruments, accounting for
derecognition of financial assets, situations for, 834
securitization and structured vehicles, 814–815
Financial liability, 818–819
Financial ratios, 5
Financial statement presentation, 1160–1165, *See also under* Common control
Firm-specific risks, *See* Unsystematic (unique) risks
Floating rate notes (FRN), 819
Floating rate system, 676
Forecasted transaction, 932–936
Foreign associates
equity accounting of, 708–711
partial disposals of, 746–751
Foreign currency financial statements, 691–700
translation of, 691–700
currency versus functional currency, presentation, 691
Foreign currency non-monetary items
fair values of, 718–720
fixed asset, 720
investment properties, 719
net realizable value rule, 718
Foreign currency to functional currency, 726–731
remeasurement from, 662–667
Foreign currency transactions of stand-alone entity, 679, 687–691
IAS 21:20–26, 687–691
monetary items, 687
net investment in foreign operation, 689–691
non-monetary items, 687
reporting at subsequent reporting dates (IAS 21:23), 688
transaction exposure, 688
treatment of transaction gains and losses, 689
on the date of settlement, 689
at reporting date, 689
Foreign Currency Translation Reserve (FCTR), 694
Foreign exchange rate exposures, 679–682
types of, 679–682
Foreign exchange rate management regimes, 676–677
currency board system, 677
exchange rate linked to a basket of currencies, 677
exchange rate linked to a key currency, 676–677
floating rate system, 676
managed floating rate system, 676
types, 676–677

Foreign exchange rates changes, 675–788
accounting exposure, 682
accounting for effects of, 675–788
affecting entity's exposure, 680
arising from intercompany transactions, 715–718
determining factors, 684–685
exchange rates used for translations, 685–687
forward rate market, 677–679
operating exposure, 680–682
quoting, 677
direct quote, 677
indirect quote, 677
special issues, 712–723
change of functional currency, 712–715
impact of change on consolidation, 712
spot rate market, 677–679
translation approaches, evaluation of, 724–725
Foreign exchange risk, 902
Foreign operations
as an autonomous entity, 693
consolidated cash flow statements in, 521–524
disposal of, 734–751
accounting for, 734–739
in a hyperinflationary environment, 723–724
integrated with parent, 693–694
partial disposal of, 743–746
translation exposure, 694–700

Foreign subsidiaries, 642–673, 700–708
consolidated cash flow statement involving, 642–648
goodwill arising from acquisition of, 700–708
Forfeiture rate, 1101
Forward contracts, 881–888
pay-off diagrams for, 883
Forward element of forwards, accounting for, 919–929
Forward rate agreements (FRA), 888, 937
Forward rate market, 677–679
Forward-type derivatives, 881
Fresh start approach, 95
Full disposal of associate, 592–593
Functional currency
concept, 682–687

parent–subsidiary interdependencies, 685
presentation currency versus, presentation, 691
to presentation currency, translation from, 692
and translation process, 692
Futures contracts, 889–890

G

Goodwill, 97–106
bargain purchase, gain from, 106
determination, 97, 101
in business combination, 490–494
fair value of consideration transferred, determination, 101
fair value of contingent consideration, determination, 100–101
journal entries in 20x1, 101–102
journal entries in 20x2, 102–103
Goodwill impairment, 340–342
measurement basis of, 203
tests, 202–205
Grant date, 1101
Group, 31
Group reorganizations, 1169–1170, 1173–1176
of new company inserted, 1174–1176
as new intermediate parent company, 1175–1176
as new ultimate parent company, 1174
Group reporting I, 29–67, *See also* Business combination; Consolidated information preparation; Consolidation process/theories; Intercorporate arrangements; Significant influence
cases, 65–67
concept of control, 38–39, *See also* Control
concepts and context, 29–67
consolidation, 31
group, 31
operating segment information, 31
parent company, 31
process of assessing control, 39–40
subsidiaries, 31
Group reporting II, 69–158, *See also* Goodwill; Identifiable assets, liabilities, and goodwill
acquisition method, 77–80, *See also separate entry*
under IFRS 3, application of, 69–158, *See also individual entry*
business combinations, 73–77
businesses become subsidiaries of acquirer, 75
modes of, 74
net assets of acquired businesses, 74–75
transfer of net assets to a newly formed entity, 76–77
consolidation process, 71–73

consolidation elimination entries and adjustments, 71
consolidation equation, 73
consolidation worksheets, 71
levels of reporting, 71
investment in a subsidiary, 71
investment in an associate, 71
Group reporting III, 159–237, *See also* Accounting: for business combinations; Goodwill impairment: tests; Non-controlling interests (NCI) under IFRS 3
Group reporting IV, 239–326, *See also* Consolidation under IFRS 10
Group reporting V, 327–440, *See also* Equity accounting: under IAS 28; Joint arrangements: under IFRS 11
Group reporting VI, 441–673, *See also* Complex consolidation issues; Consolidated retained earnings
Group restructuring in separate financial statements, accounting for, 1178–1183
new parent, 1178–1181
ultimate parent company, 1181–1183

H

Hedge accounting, 956
discontinuation or termination of, 956
evaluation of, 959–960
hedges where hedge accounting is not required, 959
rules, 895
Hedge of net investment in foreign entity, 951–955
Hedging against interest rate risk, 936–951
fair value of a swap, determining, 942
short-cut method for accounting, 942–950
cash flow hedge, 943
fair value hedge, 946–947
types of derivatives for, 937
forward rate agreements, 937
interest rate caps, 937
interest rate collars, 937

interest rate floors, 937
interest rate futures, 937
interest rate swaps, 937, 940–941
options on interest rate futures, 937
using swaps for hedging, 941
using swaps to reduce borrowing cost, 950–951
Hedging/Hedge accounting, 901–902
classification, 913–929, *See also* Cash flow hedge accounting; Fair value hedge accounting; Hedging against interest rate risk
criteria for, 908–911
qualifying hedged items, 903–904

group of items, 905
instruments, 903–904
rationale for, 901–902
rebalancing, 911–913
risks that qualify for, 902–903
credit risk, 904
foreign exchange risk, 902
interest rate risk, 902
market price risk, 902–903
Hierarchical consolidation, *See* Sequential consolidation
Highly probable forecasted transaction, 932–936
Historical rate, 687
Hyperinflationary environment, foreign operations in, 723–724

I

IAS 8 *Accounting policies, changes in Accounting Estimates and Errors*, 574
IAS 12 *Income Taxes*, 979–1060, *See also* Accounting for taxes on income
application of, 1002–1003
main principle in, 980–981
requirements, 1025–1023
IAS 21 *The Effects of Changes in Foreign Exchange Rates*, 682
IAS 24 *Related Party Disclosures*, 12–13, *See also* Related parties
IAS 27 *Separate Financial Statements*, 606–608
IAS 28 *Investment in Associates and Joint Ventures*, 329, 442, 488, *See also* Equity accounting: under IAS 28
IAS 29 *Financial Reporting in Hyperinflationary Economies*, 723
IAS 33 *Earnings per Share*, 1062–1095, *See also* Earnings per share (EPS)
IAS 36 *Impairment of Assets*, 202–205, 335, *See also* Goodwill impairment: tests
IAS 37 *Provisions, Contingent Liabilities, and Contingent Assets*, 13
Identifiable assets, liabilities, and goodwill, recognition and measurement of, 84–109
contingent liabilities and provisions, 89–91
classification or designation of, 95
fresh start approach, 95
deferred tax assets, 94–95
deferred tax liabilities, 94–95
indemnification assets, 91–94
intangible assets, 87–89
measurement period, 107–108
non-controlling interests, 95–97
purchase of assets that do not constitute a business, 108–109
Identifiable net assets, fair value adjustments of, amortization, 338–340
Idiosyncratic risks, *See* Unsystematic (unique) risks
If-converted method, 1079
IFRIC 16 *Hedges of a Net Investment in a Foreign Operation*, 952–954
IFRS 3 *Business Combinations*, 51–52, 1144–1149, *See also under* Common control

IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*, 332
IFRS 7 *Financial Instruments: Disclosures*, 13–14
qualitative information, 13
quantitative information, 14
IFRS 8 *Operating Segments*, 7–12, *See also* Operating segments
IFRS 9 *Financial Instruments*, 489
IFRS 10 *Consolidated Financial Statements*, 51, 488, *See also* Consolidation under IFRS 10
IFRS 11 *Joint Arrangements*, 376
IFRS 13 *Classifications and Measurements*, 862–864
IFRS 15 *Revenue from Contracts with Customers*, 817
Impairment of financial assets, 839–841
Implicit consolidation theory underlying IFRS 3, 57–60
Income statement effects, 1002
Income taxes on intercompany transactions, 1029
Incremental method, 797
Incurred loan loss method, 866–867
Indemnification assets, 91–94
Indirect holding of associates, 481–488
held through a subsidiary, 483–488
Indirect non-controlling interests, 442–443, 450
adjustments impact of unrealized profit on, 467
analytical checks on multi-tier group hierarchy, 467
components of, 445
fair value adjustments impact on, 467
re-enactment of, 444

in subsidiaries, dual approach to consolidation of, 448–480
sequential or hierarchical consolidation, 448
simultaneous or multiple consolidation, 449–460
Indirect ownership interests, 442–448, *See also* Non-controlling interests
acquisition of indirect subsidiary, 444–446
Indirect quote of foreign exchange rate, 677
Indirect significant influence, 50–51
Indirect subsidiary, 443
sequence of acquisition of, 460–466
Initial recognition of assets and liabilities
temporary differences arising from, 1014–1015
Intangible assets, 87–89
Intercompany transactions, income taxes on, 1029
Intercompany transfers of fixed assets, 264–287
non-controlling interests impact on, 266–267
special considerations for, 264–287

'upstream' transfer of fixed assets, 270
Intercorporate arrangements, 34–38
accounting for, 36
continuum of intercorporate ownership, 37
economic motives for entering into, 34–38
group reporting, 35
impact on financial reporting, 36–38
investment strategies, 36–38
ownership levels, 36–38
Interest rate caps, 937
Interest rate collars, 937
Interest rate floors, 937
Interest rate futures, 937
Interest rate risk, 937
Interest rate swaps, 937, 940–941
Intermediate parent company, 442
sequence of acquisition of, 460–466
In-the-money option, 1082
Intragroup balances, 240
elimination of, 240–247
Intragroup transactions and balances, elimination of, 240–241
Intragroup transfers
of inventory and fixed assets, 248–249
made at a loss, accounting, 287–294
Intraperiod tax allocation, 1026
Intrinsic value, 1101
Investment account, elimination, 161
Investment at fair value in separate financial statements, 342–343
Investment entities, 71, 111–115
accounting by, 113–114
consolidated financial statements, 114–115
investment entity parent, 115
non-investment entity parent, 114
reassessment and change of status, 115
characteristics of, 113
definition of, 112
business purpose, 112
fair value measurement, 112
exception to consolidation, 111
qualification, criteria for, 111
Investment in associate, 71, 329, 336–337
accounting policy for, 329
analytical check on, 336–337
balance, 336–337

components of, 336
be a negative balance, question of, 376
treatment of dividends, 348–349
Investment in a subsidiary, 71
elimination of, 71, 160–164
reason for, 161
re-enactment of, 161–164
Investor and associate, transfer of assets between, 343–348

J

Joint arrangements, 376–386
accounting for, 376–386
joint ventures and joint operations, 377–380
partial disposals of 746–751
separate vehicles in, 379
types of, 378
under IFRS 11, 327–440
Joint control, 328
Joint operators, 377
accounting for, 383–386
Joint venturers, 377
accounting for, 380–383

L

Lattice model, 1132
Leases, 855
Legal consolidation, 76
Liabilities, 84–109
and equity instruments, classification of, 795
Liquidity risk, 14, 18
Loan loss accounting, 865–867
dynamic loan loss provisioning, 865
expected loan loss method, 867
incurred loan loss method, 866–867
Loss of control, 495–500

M

Managed floating rate system, 676
Margin deposit, 890
Market forward rate, 882
Market price risk, 902–903
Market risks, *See* Systematic (market) risks

Matching principle, 983
Measurement date, 1101
Mergers, 76
Minority interests, 165
Monetary items, 687, 688
Multiple consolidation, *See* Simultaneous consolidation
Multiple discriminant analysis, 18
Multivariate models, 18–19

N

Negative asset, 106
Negative goodwill, 106
Net investment in foreign operation, 689–691
New company for spinning off existing business, utilization, 1176–1178
Non-accounting measures, 5
Non-controlling interests (NCI), 52, 274, 442
  accounting for derivatives
    derivatives provide current access to returns on share held, 1200–1209
    do not provide present access to returns on the shares, 1209–1237
    typical characteristics and types of derivatives on shares held, 1192–1196
    written on shares held, 1196–1200
  analytical check on, 274–275, 447
  in business combination, 1144
  components of, 274, 445
  direct, 442–443
  indirect, 442, *See also individual entry*
  re-enactment of, 444
  sub-group acquisition, 446–448
  timing of allocation of share, 443–444
  types of, 442
  under common control, 1155–1160
Non-controlling interests (NCI) under IFRS 3, accounting for, 165–202
  allocation of changes in equity, 171
  allocation of current profit after tax to, 171–172
  analysis of, 166
  balance, analytical check on, 175–177
  components of, 175–176, 201–202
  for other components of, 214–237
    analysis for, 214–216
    employee share option, analysis for, 215
    equity conversion option, analysis, 215–216
    preference shares, analysis for, 215
  comprehensive example of, 178–183
  consolidated profit and loss account, 172

consolidated statement of comprehensive income, 173
as debit balance, question of, 177–178
dividends to, allocation of, 174
entity theory application to, 169
fair value differentials, amortization of, 174
at fair value on acquisition date, recognizing, 169–170
in post-acquisition periods, 159–237
as proportion of acquisition-date identifiable net assets, illustrations, 207–213
analytical check, 208, 209
consolidated adjustments, 207–213
measurement basis of, 203
non-controlling interests' goodwill, 167–168
presentation of, 183–200
analytical check on balance of, 188
consideration transferred, determination of, 185–190
reconstructing, 166
Non-current liabilities, 982
Non-deliverable forwards (NDF), 885
Non-depreciable asset, 1016
Non-investment entity parent, accounting for, 114
Non-monetary items, 687, 688
Non-restatement
of comparative financial statements, 1163–1164
of current financial statements, 1163–1164
Non-vesting condition, 1101

O

Off-balance-sheet, 895
Offsetting
financial assets, 855–856
financial liabilities, 855–856
Open-form model, 1132
Operating exposure, 680–682
Operating segments, 7–12
description, 8
information, 31
reportable operating segment, 8–9
disclosures, 9
practical limit to number of, 9
for reporting purposes, aggregation of, 8

Option contracts, 890–894

Option valuation models, 1132–1141
binomial model (open-form), 1133–1134
Black-Scholes model (closed-form), 1132
closed-form model, 1132
open-form model, 1132
Options, 1077
Option-type derivatives, 881
Outside interests, 52
Overnight index swaps (OIS), 887
Overvalued assets and liabilities disposal after acquisition, 164–165
Ownership interests
changes in, 488–489
for joint operations, 609–627
for joint ventures, 628–631
changes without change in control, 500–507

P

Parent company, 31
Parent theory, 55–56
Partial conversion of bond before maturity, 800–801
Partial disposal of foreign operations, 743–746
Partially-owned subsidiary, 52, 54
non-controlling interests in, 53
Performance share option plans, 1105–1107
Permanent differences, 986–987
Permanently disallowed items, 1004
Plain vanilla swap, 940
Post-acquisition periods, 159–237, *See also* Non-controlling interests (NCI) under IFRS 3
Power, 40–43
Predecessor method of accounting, application of, 1151–1155
Predictable relationship, 1004
Pre-existing relationships, settlement of, 123–129
accounting treatment, 124
non-contractual relationship, 125
Preference dividends, adjusting for, 1064–1065
Premium, 678
Presentation currency versus functional currency, 691
Principle of accrual accounting, 980
Process of assessing control, 39–40
Proprietary theory, 56
Protective rights, 44
Purchasing Power Parity (PPP) theory, 680
Push-down accounting, 85n13
Put option, 890, 892

Put-together transaction, 76

R

Real Estate Investment Trust (REIT), 45
Realized intragroup transactions, elimination of, 242–247
dividend transactions, 246
inventories that are resold to third parties within the same financial year, transfer of, 245
transactions relating to interest, 242–244
transactions relating to services provided, 244–245
unrealized profit or loss arising from intercompany transfers, adjustment of, 248–255
adjustment to opening retained earnings, 249
downstream sale, 255
intragroup transfers of inventory and fixed assets, 248–249
non-controlling interests arising from, 255–264
upstream sale, 255–261
Reclassifications among categories, 836–839
from amortized cost into FVTPL, 836–837
from FVOCI into amortized cost, 838–839
from FVOCI into FVTPL, 839
from FVTPL into amortized cost, 837–838
Recoverable amount, 202
Related parties, 12–13
close family members, 12
disclosures, 12
key management personnel, 12
Reload feature, 1101
Replacement awards, 138–140
in business combination, 140–143
Replacement equity instruments, 1111
Reportable operating segment, 8–9
Reporting entity, 30
Restatement
of comparative financial statements, 1160–1162
current financial statements, 1160–1162
Retained interest in former associate, 590–592
Reverse acquisition, 116–120
exchange of shares in, 79
illustration of, 116–120
non-controlling interests in, 120
when fair value is not reliably measurable, 119
Reverse split, 1068
Reverse takeover (RTO), 77, 79
Rights issue at discount to market price, 1068–1070
Risk(s)

credit risk, 14
liquidity risk, 14
market risk, 14

types, 14
value and, relationship, 21–22
Risk reporting, 1–28
accounting-based measures of risk, 7–14, *See also separate entry*
analysis and measurement, 3–4
business firms, risk measurement and reporting by, 5–7, *See also separate entry*
downside risk, 3
exposure, 2–3
perspectives of risk, 3
sensitivity analysis, 18
systematic (market) risks, 3
two-tailed perspective, 3
uncertainty, 2–3
unsystematic (unique) risks, 3
Value at Risk (VaR), 15–17
volatility risk, 3
Roll-up transaction, 76

S

Sale/contribution of assets between an investor and its associate, 387–392
Securitization, 814–815
Self-constructed asset, 296
Sensitivity analysis, 5, 18
Separate financial statements, 606–608
acquisition of additional or partial disposal of interests in, accounting for, 606–608
cost method, 607–608
equity method, 608
Separate vehicles in joint arrangements, 379
Sequential consolidation, 448–460
Series of sub-consolidations, 448
Share-based payment, 1097–1141, *See also* Cash-settled share-based transactions; Equity-settled Share-based transactions; Fair value: of share options estimation
arrangements with cash alternative, 1117–1124
general accounting principles, 1100
tax implications of, 1125–1127
transactions, 137–138
transactions among group entities, 1129–1131
types of, 1099–1100

Share options exercised after vesting date, 1107
Share repurchase, 809–810, 1072–1073
treasury shares, 809–810
Share splits, 1067
Shares from conversion of debt, new issue of, 1070–1071
Shares issued
for full consideration, 1078
for no consideration, 1078
Short-cut method for swap hedges accounting, 942–950
Significant increase in credit risk, 844–845
Significant influence, 49–51, 328–330
associate, 50
concept, 49–51
control, 328
definition, 49–50
direct, 50–51
indirect, 50–51
joint control, 328
loss of, 586
multi-level structures, 51
Significant influence, change in, 574–608
acquisition of additional interests in an associate, 583–586
acquisition of additional or partial disposal of interests, 606–608
acquisition of an associate in stages, 574–582
cost approach, 574
cost of investment in associate, 574
fair value approach, 580–582
goodwill in the investment, 574
share of post-acquisition, 574
deemed acquisitions, 593–602, *See also individual entry*
disposal of associates, 593, 602–606, *See also* Deemed disposals
full disposal of associate, 592–593
investment in associate becomes subsidiary, 586
loss of significant influence, 586
partial disposal of associate, 587–590
while maintaining significant influence, 587–590
retained interest in former associate, 590–592
Simultaneous consolidation, 449
consolidation worksheets with, 478–480
sequential consolidation versus, 449–460
Split accounting, 808
Spot-forward differential, 890
Spot rate market, 677–679
SPPI test, 813–816

Statement of Financial Accounting Standard (SFAS), 32, 168, 1098
Step-by-step versus direct method of consolidation, 752–788
effects on disposals, 752–788
Subsequent measurement, 818–819, 1211–1212

Subsidiaries, 31
Substance over form, 30
Substantive rights, 43–44
Summary metrics, 5
Swap hedges accounting, 942–950
Symmetric pay-off profile, 884
Synergistic benefits, 31
Systematic (market) risks, 3, 14

T

Tax as an expense, 983–987
Tax base of a liability, 997–1000
revenue is tax-exempt, 999–1000
revenue taxed when earned, 997–998
revenue taxed when received, 998–999
Tax base of an asset, 989–996
taxed during the period when it is received, 992
tax-exempt, 992
Tax expense
in income statement, 1003–1013
reconciliation and analytical check on, 1003–1013
reconciliation, 1004
Tax statement of financial position, 990
Taxable temporary differences, 980, 988
Taxation, 1042
Tax-exempt income, 1004
Temporary differences, 984–985, 1037
Time decay, 893
Time value of options, accounting for, 916–919
Timing difference, 984
Top-down approach, 98
Trade receivables, 855
Transaction costs, allocation of, 809
Transaction exposure, 688
Transactions among group entities, 1129–1131
Translations, exchange rates used for, 685–687
approaches, evaluation of, 724–725

income statement items, 686
statement of financial position items, 685
using a trial balance format, 732–733
Treasury method, 1078–1079
shares issued for full consideration, 1078
shares issued for no consideration, 1078
Treasury shares, 809–810, 1072–1073
Trial balance format, translation using, 732–733
Two-tailed perspective of risk 3

U

Ultimate parent company, 442
Uncertainty, 2–3
Undervalued assets and liabilities disposal after acquisition, 164–165
Undistributed profits of subsidiaries, branches, associates and joint arrangements, 1036–1038
Unilateral ability, 44
Unique risks, *See* Unsystematic (unique) risks
Unsystematic (unique) risks, 3
Unused tax losses and unused tax credits, accounting for, 1020–1024
taxable future profit less than probable, 1020–1024
Upstream sale, 255–261
Upstream transactions, 343–344
Upstream transfer, 375

V

Value at Risk (VaR), 5, 15–17
caution regarding, 17
framework, 17
relationship between, 21–22
standard normal distribution, 16
variants of, 17
Variability of returns from involvement with investee, 46
Variable share option plans, 1105–1107
Vesting condition, 1101
Vesting date, 1101, 1104
Vesting period, 1104
Volatility risk, 3
Voting rights, 41
potential voting rights, 41–42

W

Warrants, 1077
Weighted average number of shares, 1065–1073
computation of, 1065–1073

new shares for cash or other assets issue, 1066
new shares with no inflow of resources issue, 1067–1068
contingently issuable shares, 1071–1072
discount to market price, rights issue at, 1068–1070
existing shares through a reverse split, consolidation of, 1068
share repurchase and treasury shares, 1072–1073
shares from the conversion of debt, new issue of, 1070–1071
Wholly owned subsidiary, 53