

FUNDAMENTALS OF ACCOUNTING AND FINANCIAL MANAGEMENT



KEN TROTMAN
VICTORIA CLOUT

KERRY HUMPHREYS
KATE MORGAN

8E

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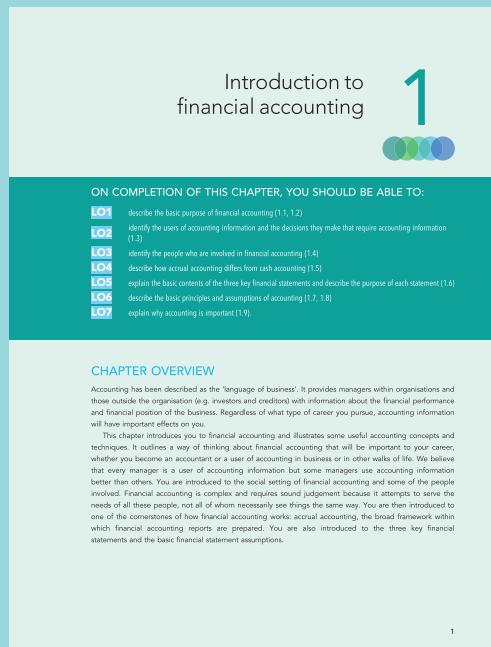
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Guide to the text

As you read this text you will find a number of features in every chapter to enhance your study of financial accounting, helping you to understand how the theory is applied in the real world.

CHAPTER-OPENING FEATURES



The **learning objectives and chapter overview** give you a clear sense of what topics each chapter will cover and what you should be able to do after reading the chapter.

FEATURES WITHIN CHAPTERS

HOW'S YOUR UNDERSTANDING?

How's your understanding? activity questions throughout each chapter help you to reinforce your understanding of key concepts as you progress through the text, providing you with the opportunity to reflect on and revise important material.



HOW'S YOUR UNDERSTANDING?

- 2A Which of the following items would be classified an asset in the balance sheet:
- Cash at bank
 - Accounts receivable
 - Accounts payable
 - Buildings
 - Retained profits?

FOR YOUR INTEREST

For your interest sections present intriguing insights into the accounting profession and bring a unique perspective to the concepts covered in each chapter.



FOR YOUR INTEREST

While we have GAAP, it is very important to consider the need to fit the accounting to the circumstances of the particular accounting entity. However, if you always changed everything to suit each organisation, there would be no standards left and no comparability to other organisations. If every course in the university used a unique grading system, you couldn't compare how you did in different courses, or compute a grade-point average. Here, very briefly, are three examples of accounting difficulties that face accountants and managers.

- The ABC, as well as channels Nine, Ten and Seven, have national TV networks in Australia. The ABC is publicly owned, largely financed by the government of Australia, and is not generally supposed to be trying to make a profit, while

END-OF-CHAPTER FEATURES

At the end of each chapter you'll find several tools to help you to review, practise and extend your knowledge of the key learning outcomes.

- **Practice problems** give you the opportunity to test your knowledge and consolidate your learning.
- The **homework and discussion to develop understanding** section provides you with discussion questions, problems, and cases to help you with your revision.
- Solutions to the **practice problems** and **How's your understanding?** questions facilitate self-study and additional practice.

Financial accounting: an integrated approach

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: don't look at the solution for any of these without giving a serious attempt first, because once you have seen the solution it always looks easier than it is.

LEARNING OUTCOMES

The following things happened to Bartlett Ltd last month. Decide if each is an accounting transaction and explain briefly why it is or it isn't:

- 1 A customer ordered \$1000 worth of products, to be shipped next month.
- 2 Another customer paid \$520 for some marketing advice from the company.
- 3 Bartlett's share price went up by \$0.50. As there are 100 000 shares outstanding, this was a value increase of \$50 000.
- 4 Bartlett ran an advertisement on TV, and promised to pay the TV station the \$2000 cost next month.
- 5 One of the company's employees worked overtime, earning \$120 that would be paid next pay period.
- 6 The company paid a teenager \$50 to compensate for a ripped shirt that occurred when the teenager tried to wash the company's uniforms.
- 7 Bartlett received a shipment of new goods for sale, paying \$1000 cash and agreeing to pay the other \$12 250 in a few days.
- 8 Bartlett paid \$100 cash.
- 9 The company made a donation to a political party of \$500. (The donation turned out later to have been against the election law, so the company's embarrassment.)
- 10 Grand Bank made the company a \$200 000 short-term loan.

PRACTICE PROBLEM B
Using the preparation of financial statements

Go to the 11 transactions given in Newcombe Ltd (Practice problem C in Chapter 3) and complete the following tasks:

- 1 Open a set of ledgers. Use the opening balances given in the balance sheet, and post each transaction to the ledgers.
- 2 Calculate closing balances for these accounts and prepare closing entries.
- 3 Based on the above ledger accounts, prepare an income statement for the month of June 2019 and balance sheet as at 30 June 2019.

PRACTICE PROBLEM C
Closing the books

The following figures have these balances at 30 June before closing entries

Increase/decrease accounts	\$	Balance sheet accounts	\$
Revenues		Cash	25 000
Sales revenue	270 000	Accounts receivable	33 000
Interest revenue	35 000	Share capital	80 000
Expenses		Retained profits	225 000
Cost of goods sold	120 000		
Wages expense	95 000		
General expense	7 000		

CHAPTER 4: Record-keeping

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

1. Provide the end-of-year journal entry to close the necessary accounts.
2. After the closing entries, what is the balance in the following accounts?
 - a Sales revenue
 - b Retained profits

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

1. What determines whether specific transactions are to be recorded in the accounting records?
2. What is the purpose of a journal entry?
3. What is a chart of accounts and what determines the number of account names to be included in a chart of accounts?
4. Why is it beneficial for transactions to be entered into a journal rather than being entered directly to a ledger?
5. What is the purpose of trial balances?
6. What is the purpose of closing entries?
7. Financial statements are highly summarised documents, summarising thousands of transactions. Financial reports and summaries provide more information about companies than is even more summarised. Why would users accept, or even prefer, summarised information to detailed data? How important is it for the user to understand the underlying data?
8. An amateur Student Accounting Club wine and cheese party, local business people mixed with students. One small-business entrepreneur was heard to say, 'All that financial accounting information you students keep talking about is irrelevant to my business. I just make the product and sell it. I don't have to keep books in the shop building the product and one person in shopping/receiving. I'm out on calls, drumming up business as I have my finger on the real pulse of the firm – that's sales. My brother pays the bills and does the bank reconciliations. We do all our own bookkeeping. It's not rocket science, but it takes a lot of time-consuming, costly record-keeping to it all! All those books and financial statements are fine for the big public companies I can do without the complications.' Prepare an appropriate response to his comments.
9. Identify some situations in which it might be necessary to find better ways of keeping records and accounting books and perhaps of a large corporation to reduce the time they put to one person.
10. State whether or not you agree with each of the statements below and, in a few words, say why.
 - a If an event satisfies all five of the transaction criteria, you can be sure it will be recorded by the entity's accounting system.
 - b Purchases and sales by investors of existing issued shares of a company listed on the Australian Securities Exchange are not accounting transactions in the company's records.
11. Explain why it is important that an accurate source document be prepared for every transaction.
12. Identify the source documents that would be used for making entries for the following transactions:
 - a a cash payment
 - b a cash receipt
 - c a sale
 - d cost of goods sold
 - e a purchase of inventory
 - f the receiving of inventory

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Guide to the online resources

FOR THE INSTRUCTOR

Cengage is pleased to provide you with a selection of resources that will help you to prepare your lectures and assessments.

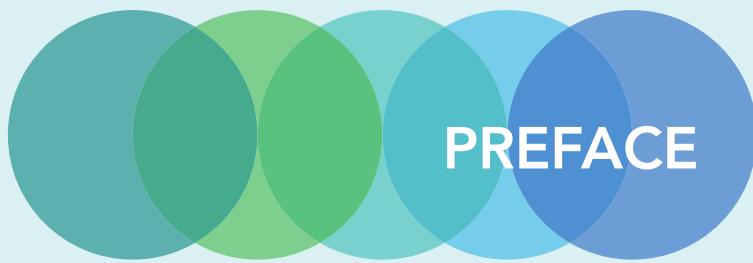
These teaching tools are accessible via au.cengage.com/instructor/account for Australia or nz.cengage.com/instructor/account for New Zealand.

SOLUTIONS MANUAL

The solutions manual provides solutions to discussion questions, end-of-chapter problems and case questions.

2021 WOOLWORTHS ANNUAL REPORT

An appendix containing the 2021 Woolworths Annual Report is available. Please refer to your unit outline for a link to this report.



One question I have been frequently asked since writing the first edition of this book is: why write an introductory accounting textbook?

First, I have been involved in teaching introductory financial accounting for over 35 years. I enjoy trying to get across the introductory concepts. Second, I have been surprised at the differences between how introductory accounting is taught in most undergraduate programs and how it is taught in MBA courses in the United States and Australia. Thirty years ago there were good reasons for the differences, as most of our first-year undergraduate students were accounting majors. This is not the case today. Third, when I ask attendees at executive education programs what their accounting background is, many respond that they did first-year accounting 10-plus years ago but found it boring! We try to change this view by continuing to illustrate the importance of accounting to the many roles our students will eventually take.

With this in mind, I tried to add to an undergraduate book some of the features that MBAs and executives seem to enjoy. We don't want our students returning in 10 years and suggesting our courses are boring! Talking about companies and relating the material to annual reports helps students to get interested.

With all of the above in mind, we set about incorporating the following in the book. First, we have tried to make clear to students the importance of accounting information by frequent reference to current material. Second, as companies are the most common business organisations in Australia today, we start by writing about companies, rather than spending many introductory chapters concentrating on sole traders. Third, to keep this book's material interesting and relevant, we have made frequent references to the content of annual reports. Students learn about real companies and can follow their performance in the newspapers or the share market if they wish. Fourth, we believe that the depth of technical knowledge in this book will challenge both accounting and non-accounting majors, but lecturers can choose to leave some sections to more advanced courses.

The first edition of this textbook was adapted from the second edition of the best-selling Canadian introductory financial accounting textbook of the same name written by Michael Gibbins. In the Australian edition, we added eight chapters as well as reorienting the material towards the Australian context.

The most attractive features of the early editions have been retained: an easy-to-read style with a wealth of extracts from company annual reports, 'How's your understanding?' activity questions throughout each chapter, questions at the end of each chapter relating to real annual reports, as well as a set of cases with questions relating to the Woolworths Limited Annual Report 2021 (appendix at the end of the book).

My co-authors for the seventh edition were Elizabeth Carson and Kate Morgan. Kate has remained on as an author of the eighth edition, while Elizabeth has now retired from academia after an illustrious research and teaching career. She made numerous improvements to earlier editions and students will still benefit from her insights. For the eighth edition, Professor Kerry Humphreys and Dr Victoria Clout have joined the author team. Kerry and Victoria have both won very important education awards as you will see from their biographies.

The eighth edition of the textbook has involved some major reconstructions. It has added a range of material on financial management, sustainability reporting and performance evaluation. The revised title is *Fundamentals of Accounting and Financial Management*. It has 17 chapters which we believe gives instructors the opportunity to choose whether to do it over two subjects or to choose the chapters they need for one subject (the publisher can arrange for the selection of chapters).

The combination of chapters of the book are used in many different combinations. Examples include:

Undergraduate first year accounting: the introductory financial accounting/financial management subject uses chapters 1–9 and the follow-up accounting subject for accounting majors uses chapters 10–17. The advantage of this is that all majors cover the basics of accounting including financial statement analysis and cash flows. The second subject then serves as the basics for accounting majors including the accounting process through to a more advanced treatment of cash flow statements.

Master of professional accounting courses: can use chapters 1–4, 10–15, 6–7 and then 16–17. This allows all of the financial analysis and cash flow material to be completed together.

Core MBA financial accounting subject: covers chapters 1–9 with an option to exclude parts of Chapter 3 (from 3.3 onwards). It would also cover Chapter 17.

All the authors are very happy to discuss these options with an instructor that would like to innovate with any of these chapters.

We trust that you will enjoy the book.

Ken Trotman

ABOUT THE AUTHORS

Ken Trotman is Scientia Professor in the School of Accounting, Auditing and Taxation at UNSW Sydney. He is a Fellow of both CPA Australia and Chartered Accountants Australia and New Zealand. Ken's major research interests include examining the processing of information by users of accounting reports and auditors, and the factors that affect the quality of their decisions. He has received a number of major awards from the American Accounting Association including Outstanding Educator Award by the Audit Section, the Notable Contribution to the Auditing Literature Award, and Notable (Lifetime) Contribution Award in Behavioral Accounting Literature. He is a life member and former president of the AFAANZ and Director of Research for the audit section of the American Accounting Association. He has over 35 years of university teaching experience. In addition to teaching at UNSW, he has taught MBAs at the University of Illinois at Urbana – Champaign, Cornell University and the University of Michigan. He has extensive consulting experience and has conducted many executive training programs in both the private and public sectors. He has published widely in Australian and international research journals and was inducted into the Australian Accounting Hall of Fame in 2011. In the Australia Day 2020 Honours he was appointed Member of the Order of Australia (AM) for significant service to education, particularly to accounting.

Kerry Humphreys is a Professor in the School of Accounting, Auditing and Taxation at UNSW Sydney. Kerry's research investigates when managers make effective decisions incorporating strategic, financial and non-financial performance information, and how new managers and accounting professionals can learn to make better decisions using this information. Her research is internationally awarded by the American Accounting Association, Accounting, Behavior and Organizations section. In the classroom, Kerry aims to empower postgraduate business students to become effective decision-makers by developing and delivering a strategy+numbers approach, and works with managers and executives to enhance their accounting and financial management skills in order to make critical business decisions. She is a multi-award winning educator for curricula development and teaching delivery, including an Australian Learning and Teaching Council Citation for Outstanding Contributions to Student Learning, Pearson Education Accounting & Finance Lecturer of the Year award and dual Vice-Chancellor's Awards for Teaching Excellence. Kerry is a qualified Chartered Accountant (FCA) and prior to completing her PhD, worked with PricewaterhouseCoopers and IBM Global Business Services.

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About the Authors

including a 2020 UNSW Higher Education Heroes award. Prior to joining UNSW in 2011, her previous positions were at the University of Queensland and University of Western Australia. She is an Associate Editor of *Accounting & Finance* journal and an Honorary Fellow of the Hanken Centre for Accounting, Finance and Governance.

Kate Morgan is a sessional lecturer in the School of Accounting, Auditing and Taxation at UNSW Sydney, teaching the core financial accounting subject in the Master of Professional Accounting Program and both the full-time and executive AGSM MBA Programs. She holds degrees from UNSW in both accounting and education, including graduating with Excellence in the Master of Education (Higher Education). She has designed accounting materials for undergraduate and masters programs in both face-to-face and online settings. Kate has published research in accounting education and has received teaching awards including the UNSW 2020 Business School Commendation Award for Teaching Excellence by Adjunct/Sessional Faculty. Prior to returning to the university, she held senior management positions specialising in project and program management, accounting and information systems design.

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Introduction to financial accounting

1



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** describe the basic purpose of financial accounting (1.1, 1.2)
- LO2** identify the users of accounting information and the decisions they make that require accounting information (1.3)
- LO3** identify the people who are involved in financial accounting (1.4)
- LO4** describe how accrual accounting differs from cash accounting (1.5)
- LO5** explain the basic contents of the three key financial statements and describe the purpose of each statement (1.6)
- LO6** explain why accounting needs standards and principles, including the role of GAAP (1.7)
- LO7** describe the objective of financial reports (1.8)
- LO8** describe the basic principles of accounting (1.9, 1.10)
- LO9** outline the qualitative characteristics of useful financial information and key concepts (1.9, 1.10)
- LO10** explain why accounting and financial management are important (1.11, 1.12, 1.13).

CHAPTER OVERVIEW

Accounting has been described as the 'language of business'. It provides managers within organisations and those outside the organisation (e.g. investors and creditors) with information about the financial performance and financial position of the business. Regardless of what type of career you pursue, accounting information will have important effects on you.

This chapter introduces you to financial accounting and illustrates some useful accounting concepts and techniques. It outlines a way of thinking about financial accounting that will be important to your career, whether you become an accountant or a user of accounting in business or in other walks of life. We believe that every manager is a user of accounting information but some managers use accounting information better than others. You are introduced to the social setting of financial accounting and some of the people involved. Financial accounting is complex and requires sound judgement because it attempts to serve the needs of all these people, not all of whom necessarily see things the same way. You are then introduced to one of the cornerstones of how financial accounting works: accrual accounting, the broad framework within which financial accounting reports are prepared. You are also introduced to the three key financial statements and the basic financial statement assumptions.

1.1 Use and preparation of accounting

LO1 Financial accounting has value because the information it produces is used in a variety of ways. Users include managers, investors, bankers, financial analysts and many others. Such people study accounting to learn how to use information effectively and to do their jobs better. For accountants, this information is essential to the services they provide.

Accounting is a complex human activity. Accounting information doesn't just happen: it is produced by a large set of people, activities and computers. To be effective users of the information, people need to know something about how and why the information is prepared. Accountants' expertise is all about the how and the why.

The demand for useful information shapes how financial accounting information is prepared; for example, when producing annual or monthly performance reports. How it is prepared shapes its use; for example, in analysis of financial statements and managerial decisions using accounting information.



HOW'S YOUR UNDERSTANDING?

Learning terminology is important. To help you with that, this book has a glossary of terms at the back. If you're not sure what a term means, look it up right away.

Accounting is a challenging discipline that involves many capabilities: assigning numbers to represent financial phenomena; providing explanations of those numbers; analysing and verifying the information prepared by others, understanding the needs of those who use accounting's reports to make decisions, communicating with the many people involved in an organisation's financial activities and maintaining judgement that is sound, objective and ethical.

Much of the challenge of accounting is in figuring out which numbers to use and deciding what the numbers tell us. Adding and subtracting the numbers is often the easy part. This makes accounting both easier and harder to learn than you might have thought. Accounting is rooted in the financial setting, and has its own vocabulary, so don't expect it all to make perfect sense at the beginning. It will take a while for you to acquire the knowledge that creates an understanding of business and accounting as they really are in our world. This understanding will be based on your knowledge of both concepts and techniques, and of the viewpoints of both accountants and the users of accounting.

The going will not all be easy, but if you give it your best effort, you may be surprised at the high level of sophistication you will reach. Here is one important suggestion. The only way to learn accounting is to do problems. It is vital that you do more than just read the examples. After reading the chapter, come back and do the examples to check your understanding. Throughout the book there are many questions called 'How's your understanding?'. Try to do the question and then look up the answer at the end of the chapter. These questions are numbered 1A, 1B, 1C, etc. where 1 indicates the chapter and the letter indicates the particular question.

1.2 Financial accounting

LO1 Accounting is a process of identifying, measuring and communicating economic information to allow informed decisions by the users of that information. Accounting systems are often described as either financial accounting systems (where periodic financial statements are provided to external decision-makers, such as investors, creditors and customers) or management accounting systems (including information for planning and performance reports to managers throughout the organisation; that is, internal decision-makers).

Financial accounting measures an organisation's performance over time and its position (status) at a point in time, and does so in Australian dollars, US dollars, yen, euros or whatever currency is judged relevant to the organisation. This measurement of financial performance and financial position is done for all sorts of organisations: large and small businesses, governments from local to national levels, universities, charities, churches, clubs, international associations and many others. The financial statements, which are financial

accounting's reports, summarise the measurements of financial performance and financial position in standard ways thought to be useful in evaluating whether the organisation has done well and is in good shape. These financial statements include notes, which contain many words (sometimes dozens of pages) of explanation and interpretation, in addition to the numbers. The statements report on the economic and financial matters and are largely for the use of people outside the organisation, such as investors, lenders, club members, regulatory agencies and taxation authorities.

In summary:

- *Financial performance* is the generation of new resources from day-to-day operations over a period of time.
- *Financial position* is the organisation's set of financial resources and obligations at a point in time.
- *Financial statements* are the reports describing financial performance and financial position (e.g. the balance sheet and the income statement).
- Notes are part of the statements, adding explanations to the numbers.

As we will see throughout this book, financial performance and position are highly related. Good performance is likely to lead to a healthy financial position; if a company has been making profits, it will probably build up resources. On the other hand, a healthy financial position facilitates performance; if you have lots of resources compared to obligations, the company can undertake activities that lead to good performance.

Another branch of accounting, management accounting, is oriented towards helping managers and others inside the organisation, in contrast to financial accounting's more external focus. While management accounting is not examined in this book, students interested in how financial accounting measures managerial performance will find frequent references to the relationship between managers and financial accounting. In the end, all forms of accounting exist to help people such as managers, investors, bankers, legislators and the public make financial decisions.



HOW'S YOUR UNDERSTANDING?

1A What are the two main things that financial accounting measures?

[Answers to all 'How's your understanding?' questions are at the end of each chapter. Make sure you try to answer the question prior to looking up the answer.]

1.3 Who uses financial accounting information?

This book will show you the many ways in which financial accounting has been shaped by the development **LO2** of business and society. Financial accounting helps:

- stock market investors decide whether to buy, sell or hold shares of companies
- banks and other lenders decide whether or not to lend
- managers run organisations on behalf of owners, members or citizens (in addition to the help provided by management accounting and other sources of information)
- management by providing basic financial records for the purposes of day-to-day management, control, insurance and fraud prevention
- governments in monitoring the actions of organisations and in assessing taxes, such as income tax and the goods and services tax (GST)
- managers are often rewarded in the form of bonuses based on profit performances.

Whole books can be, and have been, written about each of these functions. Though this book emphasises externally oriented financial accounting for business firms, don't forget that there are many other

organisations that use, and are affected by, accounting (government departments, not-for-profit organisations including charities, sporting and cultural organisations). When words like 'organisation' or 'company' are used, the implications often go well beyond business firms.

The centre of our interest in this book – financial accounting for the organisation – operates within and serves a complex social setting. It seeks to monitor and report on financial events initiated by or happening to the organisation. While accounting tells us what is going on, in so doing it affects our decisions and actions and, therefore, also affects what is going on. For example, accounting information may determine whether an organisation hires more staff or reduces staff numbers. It will also likely affect the amount spent on contractors.

The social setting is composed of many people, including groups, companies, institutions and other parties interested in, or having an influence on, the company's financial accounting. As we will see many times in this book, these parties do not share the same interest in the company's accounting, and may even be in competition or conflict with each other. For example, management are likely to prefer higher salaries but this may or may not be in the best interest of shareholders. Most will be in the same country as the company and its management but, increasingly, companies and other organisations are operating internationally. The other groups interested in, and affecting, the company's financial accounting may be located across the globe.

Let's consider some possible users of the financial statements of a listed company:

- A company's board of directors manages the company on behalf of its shareholders. One function of the board, which involves the financial statements, is hiring the company's top operating management – especially the chief executive officer (CEO). Suppose you are a member of the board and are preparing for a discussion at the next board meeting. The board evaluates the CEO's performance continuously, which is its responsibility. The financial statements have been provided to the board prior to the meeting, and will be a major contribution to this evaluation.
- A company's shares are listed (i.e. can be bought and sold) on the Australian Securities Exchange (ASX). Suppose you are a financial analyst for an investment banker and are preparing a report projecting future earnings and making recommendations about whether the company's shares are worth buying, keeping if already held, or instead should be sold. You have the financial statements and will use them to support your report.
- A company has several hundred million dollars in bank borrowings, and lines of credit (pre-authorised borrowing capability) for millions of dollars more. Suppose you are a commercial lending officer for a bank, conducting a regular review of the company's borrowing status. You must consider the quality of the company's financial performance and assets (many of which have been assigned as security on bank loans, and therefore could be seized if the company doesn't pay its loans back on schedule). Financial performance is important because net profit generates cash to pay loans, and a good past record suggests that the company is likely to be able to earn profit in the future. You have requested the financial statements to use in your review.
- A company depends on a large number of suppliers to obtain goods and services. Suppose you are the sales manager of a stationery supplier and are considering signing a long-term contract to supply the company. You want to sign the contract because your company needs the business, but you have to be satisfied that your shipments will be paid for. More positively, you hope that if you do a good job, you will have an opportunity to grow with the company. Most of the information you need has been received already, but you have obtained the financial statements and are reviewing them as you make your final decisions about the contract.
- Management and unions often negotiate about an increase in pay rates for workers. One key input is the ability of the company to pay these increases. A company's financial statements are an important input to this decision.

In summary, these scenarios indicate the following reasons for using the company's financial statements:

- evaluation of the CEO's performance by a member of the board of directors
- preparation of 'buy', 'sell' or 'hold' recommendations by a financial analyst

- review of the company's borrowing status by a bank lending officer
- development of a supply contract with the company by a stationery supplier's sales manager
- determining pay rises by management and unions.

These scenarios have been chosen to add to your insight into the use of financial accounting information. They are not complete. In all cases, the financial statements would be only part of the information used in the decision-making process. Also, there are many other uses for financial statements, some of which might make different demands on the quality of the information from those discussed here.



FOR YOUR INTEREST

In the previous text, we noted that financial statements would be only part of the information used by various groups such as investors and management in decision-making. Another important type of information is sustainability reporting. These reports include information on economic, environmental, social and safety performance. For example, they could include information on carbon emissions, energy usage, employee safety, community involvement, etc. We introduce this material in Chapter 9, as many companies now include this information in their annual reports or in separate sustainability reports.

1.4 The people involved in financial accounting

The main participants in the art of financial accounting are:

LO3

- the information users (the decision-makers)
- the information preparers, who put together the information to facilitate the users' decision-making
- the auditors, who assist the users by enhancing the credibility of the information, providing a professional opinion about the fairness and appropriateness of the information.

Users (decision-makers)

In financial accounting, a user or decision-maker is someone who makes decisions on the basis of the financial statements, on his or her own behalf, or on behalf of a company, bank or other organisation. Ultimately, the nature and contents of financial statements are functions of the demand for decision information from users. If user demand is the fundamental reason for financial statements, understanding the demand is important.

A user's main demand is for the *credible periodic reporting* of an organisation's financial position and performance:

- *Credible* means that the information in the reports (the financial statements) appears to be sufficiently trustworthy and competently prepared for it to be used to make decisions. There is a cost-benefit issue here: huge amounts of money could be spent trying to make the reports absolutely perfect, but since that money would have to come out of the organisation's funds, spending it would make its performance and position poorer. Users, such as owners and managers, may not want that to happen, so credibility is a relative condition, not an absolute one. Accounting information has to be worth its cost.
- *Periodic* means that users can expect reports on some regular basis (such as yearly or quarterly). The longer the wait, the more solid is the information. But waiting a long time for information is not desirable: users are willing to accept some imprecision in the information in return for periodic reports with timely, decision-relevant information.

The main groups of users are as follows:

- Owners are individual business owners, such as proprietors, partners and other entrepreneurs; individual investors (shareholders) in shares on stock markets who can vote on company affairs; companies that invest in other companies; superannuation funds and other institutions that invest in companies; and people with quasi-ownership interests, such as members of recreation and sporting clubs or voters in

local councils. In respect of companies, shareholders own portions of the corporation – shares that can be bought and sold – but the corporation is a legal entity existing separately from its shareholder owners. Investors purchase shares in a company with the hope of gaining in two ways: receiving a portion of the company's profit in the form of dividends, and being able to sell their shares in the future at a price higher than they paid.

- *Potential owners* are people of the same sort as the owners listed previously, who do not at present have funds invested in the organisation but may be considering making such an investment. Because potential owners often buy shares from present owners – for example, by trading shares on the stock market – rather than investing directly, there is often a significant difference in outlook between present owners, who may wish to sell their shares for as much as possible, and potential owners, who would like to pay as little as possible.
- *Creditors and potential creditors* are suppliers, banks, bondholders, and others who have lent money to the organisation, who are owed funds in return for supplying something of value, or who are considering taking on such a role. Creditors do not have the legal control of the organisation that owners have, but they often have a large say in organisation decisions, especially if the organisation gets into financial difficulty. In cases of extreme difficulty, creditors may have the right to take over control of the organisation from the owners. Creditors need to decide whether to supply goods or services to the firm on credit.
- *Managers* are those who run the organisation on behalf of the owners. They have a great interest in the way accounting reports on their activities and results. They use the information for planning, controlling and organising the activities of the entity. Often managers' salaries and bonuses, and the likelihood of staying in their jobs, are directly affected by the contents of the financial statements. In small businesses in particular, the owner may also be the main manager.
- *Employees and their unions or other associations* are interested in the organisation's ability to pay wages, maintain employment levels and keep such promises as paying superannuation contributions. Financial information can be used to assess job security.
- *Regulators and other government bodies and agencies* are groups that may use the financial statements as a basis to evaluate whether the organisation is following various rules and agreements.
- *Financial and market analysts* are people who study companies' performances and prepare reports for others by analysing those companies. Analysts often make recommendations about whether to invest, sell shares or do neither.
- *Competitors* may use the financial statements to try to understand the organisation's operations for the purpose of better understanding what their competitors will do in the future and, therefore, what decisions they should make. Sometimes, for example, managers are reluctant to disclose information to shareholders, because competitors can then also obtain it and act to reduce the organisation's prospects. For example, large retailers may disclose profit by state but it is unlikely they will do this for each store location, as competitors may use this information to decide what locations are most profitable and set up competitive stores in those areas.
- *Accounting researchers* are people – mostly university academics, but also some based in accounting firms and other organisations – who study accounting with the objective of understanding it and contributing to its improvement.
- *Customers* need to consider if the entity is financially sound. This is particularly important when customers are required to pay amounts in advance, such as on a building contract. It is also important if customers rely on the warranties for repairs provided by the entity.
- *Miscellaneous third parties* are various other people who may get access to an organisation's financial statements and use them in various ways. Once statements have been issued, many people may make use of them. For example, politicians may make judgements about industry efficiency or taxation levels, journalists may write stories about employment practices, and judges may evaluate the organisation's ability to pay if it loses a lawsuit.

Think about all these users and decisions! It is a great challenge to develop one set of periodic financial statements for an organisation so that it can be useful for all. Perhaps you will not be surprised to know that there is much controversy about whether financial statements do this well, and whether financial accounting methods serve some users or decisions better than others.

How likely is it that you, the reader, will use accounting information in the future?

If you plan to be an accountant, the value of studying financial accounting is clear. It may not be so clear, however, if you have other plans, such as a career in management, marketing, engineering, law, human resources or production. To provide some perspective to those of you not planning an accounting career, and to help you understand the managers you will work with if you do become an accountant or auditor, comments will be made frequently about managers and financial accounting.

Financial accounting is directly relevant to managers because it reports on the managers' performance as decision-makers, caretakers of the organisation, representatives of the owners, legal officers of the organisation, and so on. Any manager cannot help but be interested in how her or his performance is being measured and in how that performance is analysed, projected and otherwise evaluated. Managers' bonuses, promotions, dismissals, transfers and other rewards and penalties are often directly based on the numbers prepared by accountants. Every manager should have an intimate understanding of how accounting is measuring his or her performance and should be able to conduct a 'reasonableness check' of the information being provided. It is critical for managers to understand the impact of every decision they are making on accounting numbers as these numbers will measure their performance.

Here are a few examples of how non-accounting managers may use accounting information:

- Marketing managers need to understand the financial statements of potential customers to determine which customers to focus on and which ones to extend credit to. They also need to know the profitability of individual products.
- Purchasing managers need to understand suppliers' financial statements to make sure they have the capacity to supply in the long term.
- Human resources managers use accounting information in salary negotiations.
- Information systems designers need to include the accounting information system in their design.

If you are extremely talented and have decided to make your fortune as a sports star or musician, you still need to know about accounting. We suggest that understanding the financial statements of the Sydney Cricket Ground or the Opera House would be of benefit in negotiating with those organisations.



FOR YOUR INTEREST

Over the last few years there have been major negotiations between football (various codes) and cricket players and administrators over how total revenues of the sports should be shared between players and other stakeholders. That is, the players, their representatives and the administrators are using the information in the financial statements of the sporting bodies as part of the negotiations over salaries and other benefits.

Preparers (decision facilitators)

Two main groups are responsible for the information in the financial statements:

- Managers are responsible for running an organisation, including issuing accounting and other information, and controlling its financial affairs. The fact that managers are also users, and are vitally interested in the results, has created a fundamental conflict of interest for them and has led to the development of the auditing function (see the next section). Managers are often referred to, as a group, as management.
- Accountants, who are part of the senior management team, have the job of shaping the financial statements by applying the principles of accounting to the organisation's records, under the direction of management. Many accountants are members of professional bodies, such as CPA Australia and Chartered

Accountants Australia and New Zealand. Accountants and their professional bodies also often have auditing experience and interests, and sometimes auditing roles, but the task of preparing the financial statements is quite different in principle from the task of verifying those statements once they are prepared.

Auditors (credibility enhancers)

Auditors report on the credibility of the organisation's financial statements, on behalf of owners and others. Auditors have the job of assisting the users by verifying that the financial statements have been prepared fairly, competently and in a manner consistent with accepted accounting principles. The auditing role is a very old one, arising because users demanded some assurance that managers' reports on their performance were not self-serving or biased. This book refers frequently to external auditors, who report on the financial statements on behalf of external users, but there are also internal auditors, who work within the organisation to support the credibility of information being used by management. External auditors provide an opinion on the truth and fairness of the financial statements. While external auditors may be asked for advice in preparing the statements, especially for small companies, they must avoid responsibility for the statements because their role is to scrutinise the preparation process. They cannot credibly audit statements they have prepared!

The external auditors are formally appointed by the owners; for example, at the annual shareholders' meeting. But an organisation's external auditor is not permitted to be an owner or manager of the organisation. For example, they cannot own shares in the company and they cannot act as a director or manager of the company, even for a small part of the year. This is to ensure that the auditor is financially and ethically independent and can therefore be objective about the organisation's financial affairs. Independence and objectivity are fundamental ideas that you will encounter frequently in this book.

External auditors may work alone or in partnership with other auditors in accounting firms. Some of these firms are very large, having thousands of partners and tens of thousands of employees, and offices in many cities and countries. Accounting firms offer their clients not only external auditing but also advice on income tax, accounting, computer systems and many other financial and business topics. However, if they conduct the audit there are rules in place about what other services they can provide, as auditors cannot be involved in auditing their own work, or creating any conflict-of-interest problems. Managing this requires considerable professional skill and attention to the ethics and rules of professional conduct. Whether this is being done successfully is a matter of much controversy at present. In Australia, as well as in many overseas countries, there has been additional regulation aimed at improving the independence of auditors. The large accounting firms annually spend many millions of dollars on their independence and quality-control systems. In 2020 a parliamentary committee inquiry released the Regulation of Auditing in Australia report, with a range of recommendations to improve audit quality.

People and ethics

Ethics, mentioned previously, will be raised throughout this book. Ethical issues can arise in just about any area of accounting. Here are some examples, all of them real:

- An organisation has been sued by a recently fired employee who claims that the dismissal was based on the employee's age, and therefore broke employment laws. The organisation's general manager denies any impropriety. The organisation's chief accountant, who personally feels that the former employee's claim is justified, has suggested to the boss that the lawsuit should be mentioned in a note to the financial statements, so that users of the statements will know there is a potential for loss if the former employee wins. The general manager feels that the chief accountant should ignore the lawsuit in preparing the financial statements, to avoid embarrassment and the appearance of admitting guilt. The general manager fears that such an apparent admission could be used against the organisation in court and so could cause the organisation to lose the lawsuit. What should the chief accountant do?
- While doing an audit, the external auditor learns that the organisation may have been cheating one of its customers. The customer, who is unaware of this and quite happy with things, is another client of the auditor. The auditor, who is bound by rules of conduct designed to protect the confidentiality of

information gained during the audit, knows that saying anything to anyone could result in major lawsuits. Should the auditor just keep quiet about what was found?

- A third organisation's senior managers are paid a bonus each year, calculated as a percentage of profit. Management is considering a proposed change of accounting methods that will reduce expenses this year and therefore raise accrual profit and increase bonuses. Should senior management refuse to implement the accounting change, request that the bonus calculation ignore the change, or just go ahead and enjoy the higher bonus?

These illustrative problems do not have easy answers, so none are offered here. They are dilemmas for the chief accountant, the auditor and the general manager. This book will address ethical issues from time to time, helping you to sharpen your ethical sense along with your accounting knowledge – the two are inseparable.

1.5 Accrual accounting

Financial accounting's task of producing financial statements is a complex one. For even a small business, thousands of events (transactions) have to be recorded and their financial effects evaluated. For large corporations such as BHP, Lend Lease, Rio Tinto, Woolworths, AMP, Qantas and Westpac, or organisations such as the University of New South Wales, Brisbane City Council or the Red Cross, the number of annual transactions runs into the millions or billions. Frequently, when the time comes to prepare the financial statements, some transactions have not been completed, are in dispute or have an otherwise unclear status.

LO4

To cope with these complexities, financial accounting for most businesses and organisations uses the accrual accounting approach. Under an accrual accounting system, the impact of transactions on the financial statements is recognised in the time periods during which revenues and expenses occur, rather than when the cash is received or paid. Formal definitions of revenues and expenses can be quite complicated, and are left to Chapter 2. At this stage, we will provide examples of the main types of revenues and expenses.

The main form of revenue is usually the sale of goods or services; for example, the sale of machines for \$45 000 each, carrying out the installation of a new computer system for \$300 000 or providing consulting advice for \$40 000. For Woolworths, the sales could be a trolley of groceries. Other revenues include interest on investments held, dividends received on shares and rent from premises owned by the company.

Consider the main revenues and expenses for a coffee cart you see on campus or in the city. The main revenue will come from coffee sales. If all sales are cash sales it would be the cash received for the coffees sold. But note most customers use their credit card (where it may be days/weeks before the cash is received) or that some customers may have an account where all coffees sold to them are recorded and then they pay the whole amount the following month on receipt of an invoice. Note that under accrual accounting it is the delivery of the service (i.e. handing over the cup of coffee) that results in revenue being recognised.

Expenses include the costs of services and resources consumed in the process of generating revenues. Examples of costs incurred are wages, electricity, travel and rent. An example of resources consumed is depreciation. Organisations depreciate the cost of an asset (such as a motor vehicle or a printing machine) over the useful life of the asset; that is, each year a percentage of the cost of the asset becomes an expense. These assets are helping in generating revenue; therefore, a share of the cost should be treated as an expense in each accounting period during which the asset helps generate revenue.

Why do we depreciate the cost of an asset over its useful life rather than treat the cost of the asset as an expense in the first year? The reason is that the asset is used over many years and helps generate revenue over many periods. This depreciation expense is matched to the revenues earned during the period. Note that estimates need to be made. For example, a printing machine that cost \$480 000 would have annual depreciation of \$120 000, \$96 000 or \$80 000, depending on whether its estimated life is four, five or six years; that is, the judgement on the useful life of the machine has an impact on profit each year.

Now consider the main expenses of the coffee cart mentioned previously. Likely expenses include:

- the cost of coffee
- the cost of cups

- wages
- rent of space (e.g. to the university)
- depreciation on the coffee machine
- insurance.

Accrual accounting versus cash accounting

Before considering these complexities, let's consider the basic differences between cash accounting and accrual accounting.

- Cash accounting involves recording revenues and expenses at the time the cash is received or paid. This is reasonably precise, because the accountant knows whether cash has been paid or received and the exact amount is easily determined (from accounting books or bank statements).
- However, often the timing of cash flow is in a different accounting period from the substance of the transaction. Examples include selling inventory or providing services on credit; when a contractor provides services for your company but will not be paid until a later accounting period. As noted (but worth repeating), *accrual accounting incorporates these complexities by recording revenues and expenses at the time they occur, not when cash is received.*

Benefits of accrual accounting

The differences between cash and accrual accounting are critical to your understanding, so the previous points are worth reinforcing. The primary measure of a company's performance is its profit for the period. Profit is measured as revenues minus expenses. The key revenue for most companies comes from the sale of goods or services. The amount of revenue recorded is the amounts expected to be received from providing the good or service regardless of when the customer pays for the goods or services. Expenses represent the amounts paid or owing by the organisation in order to earn the revenues. Some expenses may be paid at the time the expense is incurred but often the amounts will be paid after, or even before, the expense is incurred. For example, you may have done some casual work during the month which is not paid to you by the company until the end of the month. On the other hand, the company will likely pay rent and insurance in advance.

The benefits of accrual accounting to the user of financial statements are:

- it includes all assets and liabilities in the balance sheet to give a truer picture of the financial position of the organisation (e.g. accounts receivable and accounts payable)
- it includes all revenues and expenses regardless of whether the cash has yet been received. For example, if a company makes a large sale to an established customer who has always paid its bills, the company would see this as a positive factor. Accrual accounting includes such a transaction in revenues and this more accurately measures profits. Similarly, if the company has received the benefits of services from other organisations then this should be included in expenses and, therefore, impact the performance measure.
- assets are used over a number of years and will benefit the performance of each year. Therefore, in measuring overall performance a share of the costs of that asset should be allocated across the life of the asset. This allocation, called depreciation, is included in an accrual accounting system.

To compare cash profit with accrual profit, consider the following:

- A company makes credit sales of \$100 000 in June, and the cash will be collected in July. Under an accrual system, \$100 000 revenue would be included in June, whereas under a cash system the amount would be recognised in July.
- A contractor carries out repair work for your company in June for \$20 000, but the bill will not be paid until July. Under an accrual system, the expense would be recognised in June, but under a cash system it would not be recognised until July.
- Under accrual accounting there will be an allocation of the cost of equipment to expenses over several accounting periods to recognise the consumption of the equipment's future economic value. This is

called depreciation. If some new equipment cost \$80 000 and has a life of eight years, \$10 000 depreciation would be included in expenses each year.

Note that in both of the previous examples, the revenues or expenses are recognised under accrual accounting before they would be recognised under cash accounting. In later chapters, we will work through examples where a company receives cash before it earns the revenue and pays cash before it receives a service.



HOW'S YOUR UNDERSTANDING?

- 1B** In June, a company makes cash sales of \$100 000 and credit sales of \$200 000 (all to be collected in July). It pays wages of \$60 000 and owes \$10 000 for June expenses (to be paid in July).
- (i) What is profit using cash accounting?
 - (ii) What is profit using accrual accounting?

Using accrual accounting to prepare financial statements

Using the accrual accounting approach in preparing the financial statements, attempts are made to:

- include all the cash receipts and payments that have already happened; for example, cash sales and cash payment for wages
- incorporate future cash receipts that should be expected, based on existing transactions; for example, it is necessary to include credit sales now, although the cash will not arrive until the next period
- incorporate future cash payments that need to be paid for goods or services already provided to the organisation
- measure the value of incomplete transactions; for example, estimate the likely amount of accounts receivable that will not be collected or the amount of inventory that is obsolete, and treat these amounts as expenses of this year
- estimate figures when exact amounts are unknown; for example, estimate the amount of interest due from the bank at year-end, even though the bank does not add the interest to your account for another two months – the amount is interest revenue
- estimate the using up (consumption) of an asset over time (called depreciation), i.e. allocating the cost of the asset to each year over the life of the asset.

Estimates and assessments

Notice the use of the words 'estimate' and 'assessment'. This illustrates the need for judgements when preparing financial statements under accrual accounting. Examples of estimates are as follows.

- The value of a bank's overseas loans (i.e. the money actually to be received back from those loans). Not all borrowings will eventually be repaid so the bank will need to estimate the proportion likely to be repaid. This may depend on economic conditions at the time. Accountants study the loan repayment record of various industries and large borrowers and then estimate how much money the bank will be able to collect.
- The amount of profit that should be recognised during the year by a construction company for a major bridge that will take two years to complete will depend on future expenses. Not all borrowings will eventually be repaid so the bank will need to estimate the proportion likely to be repaid. This may depend on economic conditions at the time. Accountants calculate the costs involved in building the bridge to this point. Based on such estimates as the percentage of the job completed, he or she also estimates the total likely profit of building the bridge and determines the percentage of profit to be included in this period.
- All companies have to estimate the amount of money owing to employees at the end of each year for wages where the work is done and not yet paid, and calculate the amount owing to employees to be

paid in the future for holiday pay, long service leave and superannuation (depends a lot on the type of superannuation plan).

The importance of good judgement

Accrual accounting has been developed because financial statements cannot be based on merely the routine accounting records of what has happened. Measuring economic performance is more complex than that, and the appropriate measures can be elusive and complex judgements need to be made. Many augmentations to the transactional record (estimates, adjustments, judgements and verbal explanations) must be made so that the statements will be meaningful. The resulting statements, therefore, depend to a great extent on the quality and fairness of such augmentations. Managers, accountants and auditors must use their judgement constantly.

Financial accounting, because it relies on many judgements, is far more imprecise than most people (even many regular users of financial statements) realise. To help students understand the reality of modern financial accounting, this book spends much space on the real-life imprecisions of preparing and using financial statements. Accrual accounting is therefore the presumed method in this book, though there will be some comparisons between it and simple cash-based accounting. Modern financial accounting starts with cash receipts and payments, then builds a very large accrual accounting process *in addition* to the cash records in order to provide the sophisticated measures of financial performance and position that today's world demands.



FOR YOUR INTEREST

Many of you will end up working as accountants or managers for organisations that operate in many countries. This book should equip you to understand the financial statements prepared in most countries, including Australia, the United Kingdom, Canada, New Zealand, China, Singapore, Hong Kong, Indonesia, Malaysia and many others. The methods of preparing financial statements in these countries are very similar. All use the accrual accounting system introduced in this chapter. With the introduction of International Financial Reporting Standards (IFRS) in 2005, differences between financial reporting in these countries are likely to be very small.

1.6 The key financial statements

LO5 Organisations are required to provide the following types of information that are relevant to user needs: financial position, financial performance, financing activities and investing activities.

The key financial statements that provide this information are: a balance sheet, which shows the financial position at a point in time; an income statement, which measures financial performance over a defined period (such as a month or a year) by deducting expenses from revenues during the period to obtain profit for the period; and a statement of cash flows, which shows the sources and uses of cash during the period. Both financing and investing activities are included in this statement.

Balance sheet

Exhibit 1.1 provides an example of a simple balance sheet, also called 'Statement of Financial Position'. The balance sheet shows an organisation's resources and claims on resources at a particular point in time. The heading provides the company name, the title of the report and the date at which the financial position is shown. The three main elements of a balance sheet are assets, liabilities and owners' equity. In this case, the organisation is a company, and owners' equity is described as shareholders' equity. If the organisation were a sole trader or partnership, it would be called proprietor's equity or partners' equity, respectively. You should be aware that while some companies use the label 'Balance Sheet' (e.g. Commonwealth Bank 2020 and Qantas 2020) others use the label 'Statement of Financial Position' (e.g. Woolworths 2020 and Telstra 2020).

EXHIBIT 1.1

XYZ LTD

BALANCE SHEET AS AT 30 JUNE 2022

	2022 \$000	2021 \$000
Assets		
Cash at bank	2 000	1 400
Accounts receivable	16 000	13 000
Inventory	12 000	10 000
Property, plant and equipment	<u>90 000</u>	<u>91 000</u>
Total assets	<u>120 000</u>	<u>115 400</u>
Liabilities and shareholders' equity		
Liabilities		
Accounts payable	17 000	16 800
Wages payable	2 000	2 000
Provision for employee entitlements	4 000	3 000
Long-term loans	<u>30 000</u>	<u>33 600</u>
Total liabilities	<u>53 000</u>	<u>55 400</u>
Shareholders' equity		
Share capital	40 000	36 000
Retained profits	<u>27 000</u>	<u>24 000</u>
Total shareholders' equity	<u>67 000</u>	<u>60 000</u>
Total liabilities and shareholders' equity	<u>120 000</u>	<u>115 400</u>

As a balance sheet is defined as a statement of financial position at a particular time, you should be familiar with both terms.

ASSETS

Assets are a present economic resource controlled by an entity as a result of past events. An economic resource is a right that has the potential to produce economic benefits. Subsequent chapters will provide more information on assets and asset recognition. At this point, you should note that the value of every asset needs to be measurable in monetary terms. A brief discussion of the assets in Exhibit 1.1 will make you familiar with the terminology.

- The cash at bank account records deposits to and withdrawals from a bank.
- Accounts receivable (also called debtors) represents amounts owing from customers for goods or services provided to them. Accounts receivable is shown net, which indicates the amount that management expects to collect from customers after allowances have been made for likely uncollectable amounts.
- Inventory generally represents the cost of stock on hand; that is, unsold products.
- Property, plant and equipment includes items such as land, buildings, equipment, motor vehicles, computers and furniture.

Assets can be financed in one of two ways: liabilities and/or shareholders' equity:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

LIABILITIES

Liabilities are present obligations of an entity to transfer an economic resource as a result of past events. For example, suppliers providing goods on credit and employees carrying out work are examples of past transactions that lead to liabilities. Liabilities can be legally owed debts, such as loans from the bank or amounts due to suppliers. However, they also can be estimates of future payments based on past agreements, such as those arising from promises of future benefits to employees for long service leave, or of warranty repairs for customers when products break down. Liabilities involve the future use of assets, usually cash, or the performance of future services. An example of the former is paying cash to reduce a liability. An example of providing a future service would be carrying out warranty repairs on products previously sold.

Four examples of liabilities in Exhibit 1.1 are accounts payable, wages payable, provision for employee entitlements and long-term loans.

- *Accounts payable* (often called trade creditors) is the amount owed to various suppliers for goods or services they have provided to an organisation.
- *Wages payable* (also called accrued wages) is for work done by employees, but for which they have not yet been paid.
- *Provision for employee entitlements* refers to entitlements employees accumulate as a result of past work, such as holiday leave, sick leave, long service leave and superannuation.
- *Long-term loans* are loans that are not repayable within a year.

SHAREHOLDERS' EQUITY

Shareholders' equity is the excess of assets over liabilities. It is the residual interest in the assets of the entity after deducting all its liabilities. Shareholders' equity for a company consists of two main elements: share capital and retained profits.

- *Share capital* is the amount that owners have directly invested in the company.
- *Retained profits* represent the total cumulative amounts of profits that the company has retained in the business rather than distributed as dividends.

The relationship between assets, liabilities and shareholders' equity can be expressed in the following accounting equation:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

This equation shows that the resources of an organisation are funded from two types of sources: debt or equity. The effects of transactions on this equation are discussed in Chapter 2. At this point you should note that the equation balances at every point in time.



HOW'S YOUR UNDERSTANDING?

- 1C For each of the following items state whether they are assets (A), liabilities (L), shareholders' equity (SE) or not listed in the balance sheet:
- (i) accounts receivable
 - (ii) accounts payable
 - (iii) sales revenue
 - (iv) share capital
 - (v) equipment
 - (vi) loans.

Comparative balance sheets

Note that the balance sheet in Exhibit 1.1 shows numbers for 2021 and 2022. The changes from 2021 to 2022 provide the reader with information about what is happening to various account balances; for example, cash at bank has increased from \$1400 to \$2000. The statement does not tell us the reasons for the change, but it is possible to obtain information on the change in this account in the statement of cash flows provided in Exhibit 1.3 (to be discussed later). While some of the reasons for the changes in other balances are too complicated for this introductory chapter, you will be able to understand the changes after you have completed Chapters 2 and 3 (we will return to Exhibit 1.1 in Chapter 2). For now, consider some preliminary ideas:

- What would be a likely explanation for the increase in accounts receivable? Most likely credit sales (this would increase accounts receivable) are greater than cash received from customers related to credit sales (this would decrease accounts receivable).
- What does the increase in share capital mean? This normally indicates that there have been shares issued during the year.
- The long-term loans have decreased from \$33 600 to \$30 000, indicating the company has borrowed less than it has repaid on the loans.



HOW'S YOUR UNDERSTANDING?

1D Consider the following questions:

- If the balances of total assets and shareholders' equity are \$100 000 and \$40 000, respectively, what is the balance of total liabilities?
- If the balances of total liabilities and shareholders' equity are \$200 000 and \$300 000, respectively, what is the balance of total assets?
- Given the balances of assets \$300 000, liabilities \$200 000 and share capital \$60 000, what is the balance of retained profits?

Income statement

The income statement is also called the 'Profit and Loss Statement'. For example, while Telstra, Commonwealth Bank and Qantas all use the label 'Income Statement' some large companies (e.g. Woolworths 2020) use the Statement of Profit and Loss and internally many companies refer to the Profit and Loss Statement. In previous years, the income statement was called the profit and loss statement. Some companies may continue to use that terminology within their internal reports, so you should at least be aware of it.

The income statement provides information on an organisation's profitability for a period of time. It matches revenues during a period against expenses incurred in earning the revenues. The difference is the profit (revenue greater than expenses) or loss (expenses greater than revenue). Recall that under an accrual accounting system, the cash related to the revenue or expense does not have to be received or paid in order for the revenue or expense to be included in the income statement. Discussion of when revenue and expenses are recognised is included in Chapter 2.

Exhibit 1.2 provides an example of a simplified income statement. Sales is the only revenue item listed. The next item in the income statement is cost of goods sold (COGS). For a retailer, this would be the cost of the goods that are sold. For example, if a retailer sells 100 items at \$20 each and the cost price of each of the items is \$8, sales revenue would be \$2000 ($\20×100) and cost of goods sold would be \$800 ($\8×100). The difference between sales revenue and cost of goods sold is called gross profit (also gross margin).

EXHIBIT 1.2

XYZ LTD

INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2022

	\$000	\$000
Sales revenue	21 000	
Less Cost of goods sold	<u>8 000</u>	
Gross profit	13 000	
Less Operating expenses		
Salaries	2 500	
Depreciation	500	
Electricity	300	
Travel	300	
Other	<u>400</u>	<u>4 000</u>
Operating profit before tax	9 000	
Less Income tax expense	<u>3 000</u>	
Operating profit after tax	<u>6 000</u>	

The income statement also lists various operating expenses, as shown in Exhibit 1.2. These costs relate to the day-to-day running of the business.

Many other operating expenses, such as advertising, staff training, maintenance, telephone and motor vehicle expenses, could also be included. Deducting these operating expenses from gross profit gives operating profit before tax. Tax is then deducted to give operating profit after tax.

The profit figure of \$6 million can be paid out in dividends to shareholders or retained in the business. This is the connecting link between the balance sheet and the income statement. The opening balance of retained profits plus the profit for the year minus dividends equals the closing balance of retained profits as shown in the balance sheet.

Companies provide a separate statement or note to the accounts showing the change in retained profit for the year. For example, if XYZ's opening retained profits were \$24 million, net profit for the year was \$6 million and dividends of \$3 million were declared and paid, we would see the following statement in the notes to the accounts for retained profits.

	\$ million
Opening balance	24
+ Net profit	<u>6</u>
	30
- Dividends declared and paid	<u>3</u>
Closing balance	27

**HOW'S YOUR UNDERSTANDING?**

- 1E** Assume the opening balance of retained profits is \$80 000 and the following account balances for the month of February are: sales \$200 000, cost of goods sold \$90 000, wages expense \$60 000 and other expenses \$10 000. What is the profit for the month of February and the balance of retained profits at the end of February?

Statement of cash flows

Because revenues reported usually do not equal cash collected and expenses do not equal cash paid, net profit is different from the change in cash for the period. The statement of cash flows shows the changes during the period in one balance sheet account, namely cash. It shows the receipt of cash and the payment of cash. Accounting standards require companies to present this statement in their published financial statements. Individual transactions are normally split into the following three categories:

- 1 operating activities: related to the provision of goods and services
- 2 investing activities: related to the acquisition and disposal of certain noncurrent assets, including property, plant and equipment
- 3 financing activities: related to changing the size and composition of the financial structure of the entity, including equity and certain borrowings.

Exhibit 1.3 provides an example of a statement of cash flows. Under cash flows from operating activities, it shows that the company received \$17 million from customers, and paid \$7.7 million and \$2.5 million to suppliers and employees respectively, as well as paying \$4.3 million in other cash operating costs.

Note that these figures under cash flow from operating activities are not the same as those in the income statement. For example, the company could have made \$21 million in credit sales, but only collected \$17 million from customers by the end of the year. For XYZ Ltd there is only one investing item, being the cash paid for a new machine. Cash flows from financing activities show that the company received \$4 million from an issue of shares, but paid back a \$3.6 million bank loan. The net effect on cash of all of the prior transactions was an increase of \$600 000. When added to the opening balance of \$1.4 million, it shows a closing balance of \$2 million, which is also the figure shown under cash in the balance sheet. Statements of cash flows will be discussed in detail in Chapter 7.

EXHIBIT 1.3

XYZ LTD

STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2022

	\$000
Cash flows from operating activities	
Receipts from customers	17 000
Payments to suppliers	(7 700)
Payments to employees	(2 500)
Other cash operating costs	<u>(4 300)</u>
	<u>2 500</u>
Cash flows from investing activities	
Purchase of machinery	<u>(2 300)</u>
Cash flows from financing activities	
Issue of shares	4 000
Bank loan	<u>(3 600)</u>
	<u>400</u>
Total net cash flows	600
Cash: 1 July 2021 (opening balance)	<u>1 400</u>
Cash: 30 June 2022 (closing balance)	<u>2 000</u>

Relationships between the financial statements

Exhibit 1.4 shows the main relationships between the various financial statements. We have abbreviated the balance sheet, the income statement and the cash flow statement in Exhibits 1.1, 1.2 and 1.3 to make the relationship clearer. The cash flow statement explains the change in cash in the balance sheet from \$1400 to \$2000. This change will be from cash flows from operating, investing and financing activities, and a closer examination of Exhibit 1.3 will show which cash flows have the major impact. Net profit of \$6000 for the year appears in the income statement, and this amount increases retained profits. How this works can be seen in the note on retained profits, which has increased from \$24 000 to \$27 000, due to the net profit for the year less the dividends declared and paid; that is, the amount of net profit not used for dividends increases the balance of retained profits.

EXHIBIT 1.4

XYZ LTD

RELATIONSHIPS BETWEEN THE STATEMENTS (BASED ON EXHIBITS 1.1 TO 1.3)

	2021	2022		
Balance sheet			Cash flow statement	
Cash	1 400	2 000	From operating activities	2 500
Other assets	114 000	118 000	From investing activities	(2 300)
Total assets	115 400	120 000	From financing activities	400
Liabilities	51 400	53 000	Total net cash flows	600
Share capital	40 000	40 000	Opening balance	1 400
Retained profits	24 000	27 000	Closing balance	2 000
Total liabilities and shareholders' equity	115 400	120 000		
Retained profits note			Income statement	
2021 balance		24 000	Revenues	21 000
+ Net profit		6 000	Expenses*	15 000
- Dividends		3 000	Net profit	6 000
2022 balance		27 000		

*From Exhibit 1.2, total expenses = COGS + Operating expenses + Income tax expense
 $= 8000 + 2500 + 500 + 300 + 300 + 400 + 3000 = 15 000$

**HOW'S YOUR UNDERSTANDING?**

- 1F If the opening balance in retained profits is \$100 000, net profit after tax is \$60 000 and dividends declared and paid is \$40 000, what is the balance of retained profits at year-end?

1.7 Accounting principles and the use of accounting information

How do accountants decide what accounting is needed and then put their decisions into practice? This section outlines the conceptual background that guides accountants. Doing accounting takes expert knowledge, considerable experience and continuous attention to new problems and solutions. The business environment is continually changing with organisations becoming more global, increased complexity in financing and structuring of companies, new forms of product manufacturing, new forms of retailing (e.g. online shopping) and even new forms of banking arrangements and new types of currencies. Therefore, concepts and principles are very important in accounting, because they form a logical structure that practising accountants use every day to consider problems, make or recommend decisions and explain solutions.

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Applying accounting standards and principles depends on the particular accounting entity: the organisation for which the accounting is being done. The local coffee shop needs accounting information, as do the groups of corporations making up BHP, Woolworths or Westpac, but decision criteria would imply different accounting needs for the coffee shop entity, the resources company, the retailer or the bank, so generally accepted accounting principles would be applied differently for these entities.

Financial accounting has a surprisingly large set of concepts and principles to guide accountants in preparing financial statements, auditors in verifying them and users in interpreting them. A very large amount has been written about the conceptual and theoretical side of accounting and several groups are involved in setting financial accounting standards and otherwise regulating accounting information.

This section will give you a glimpse of the conceptual structure behind financial accounting by focusing on some concepts of particular value to the users of accounting information. These concepts have been deduced by accountants, researchers and standard-setters from logic and the observation of good practices, and they are used to guide everyone who prepares, audits, uses and studies financial accounting.

A phrase often used in relation to accounting's conceptual structure is 'generally accepted accounting principles' (GAAP). These are the rules, standards and usual practices that companies are expected to follow when preparing their financial statements. They are a combination of the authoritative standards and concept statements issued by accounting standard-setters – such as the Australian Accounting Standards Board (AASB) – and the accepted ways of doing accounting that are not included in such standards. Year by year, the set of authoritative standards gets larger, but the world continues to increase in complexity, so the standards are never extensive enough to include everything. In fact, it is generally argued that they should not try to cover everything, because if they did, financial accounting would be bound by an inflexible set of rules that are unlikely to be able to cope with change. Thus, the setting of accounting standards is usually considered to be 'principles' based rather than 'rules' based.

The development of GAAP can be traced back to the evolution of financial accounting, as well as to the efforts of standard-setting bodies that attempted to improve accounting principles and practices by increasing the authoritative, documented part of GAAP. Until the 20th century was well underway, authoritative accounting standards did not exist. The catalyst that produced increased financial disclosure and brought more rules governing it was the US stock market crash of 1929. Poor financial reporting and disclosure were seen as contributing to the crash. It was argued that, had investors been better informed, they could have made sounder financial decisions, thus preventing the stock market collapse and its harmful economic and social consequences.

In Australia, the main GAAP consist of accounting standards and the conceptual framework. It all sounds a bit complex, but if we describe them one by one it should become clearer. Think of them as a package that together forms GAAP.

While, for many years, there were significant differences in accounting standards between countries, the establishment of the International Accounting Standards Board (IASB) resulted in a whole series of new accounting standards. In Australia (and in many other countries), the local standard setter uses the IASB pronouncements as the 'foundation' pronouncements, to which it adds material detailing the scope and

applicability of a pronouncement in the Australian environment. Additions are made, where necessary, to broaden the content to cover sectors not addressed by an IASB pronouncement, and any domestic, regulatory or other issues.

General concepts and principles to be used in preparing and presenting financial statements are set out in the *Framework for the Preparation and Presentation of Financial Statements*. (This is cited in the Australian Accounting Standards and in this book as 'the Framework'.) This Framework has important implications, so we now devote a complete section to its coverage.

1.8 Framework for the preparation and presentation of financial statements

LO7 The Framework issued by the AASB sets out the concepts that underlie the preparation of financial reports for external users. The Framework starts with coverage of the objectives of financial reporting and the qualitative characteristics of the useful financial information. We discuss these topics in the following paragraphs.

The Framework makes a distinction between general-purpose financial statements and special purpose financial statements. The Framework deals with general-purpose financial statements (as does this book). These general-purpose financial statements are aimed at the common information needs of a wide range of users. These users generally have to rely on the financial report as their major source of financial information. Special purpose reports, such as prospectuses for the issue of shares, are outside the scope of the Framework.

You have already been introduced to the users of financial reports. These include: investors, employees, lenders, suppliers and other trade creditors, customers, governments and their agencies, and the public. The Framework takes the view that investors, lenders and other creditors are the main users of the financial reports, as the objective of general-purpose financial reports is to provide information to existing and potential investors, lenders and other creditors to allow them to make decisions about providing resources to the organisation.

The Framework also recognises that the users of information about not-for-profit organisations may be different and their resource allocation decisions may differ. For example, they include donors, taxpayers, recipients of the services (e.g. the community) and parties providing an oversight role (e.g. Parliament).

The objective of financial reports as outlined in the conceptual Framework is to provide information about the financial position, financial performance and cash flows that is useful to the aforementioned users (including existing and potential investors, lenders and other creditors) in making economic decisions.

These economic decisions, which will vary depending on the user, generally require an evaluation of the ability of the entity to generate cash in the future. Users are interested in the timing of that cash generation and the level of certainty; that is, how likely it is that the cash will be generated. This future cash generation is an important determinant of the ability of the entity to pay dividends to shareholders, wages to employees, interest to lenders and tax to the government. The Framework argues that decisions by potential users depend on the returns they expect (e.g. dividends, interest and capital gains/losses) and that expectations about returns depend on the assessments about the amount, timing and uncertainty of future cash flows.

To help predict future cash flows, users need to know about:

- the economic resources (e.g. land and buildings, equipment and patents) that the entity controls
- the claims against the entity (e.g. amounts owing to others such as banks and suppliers) and how effectively and efficiently management and the board have discharged their duties
- information about the nature and amounts of these resources and claims. This information helps users identify strengths and weaknesses (including liquidity and solvency which are discussed in Chapter 6), and its need for additional finance and likelihood of attaining it.

In addition to knowing about the present level of resources and claims, users also need to know about changes in these amounts from both financial performance and other transactions such as borrowing money (e.g. bank loans) and issuing shares. Information on financial performance (as measured by calculating the profit from the organisation) is useful for two main reasons:

- It helps users understand what return shareholders get on their equity (return on equity), which indicates how efficiently and effectively the organisation has used its resources.
- Information about the variability of these returns and its components (discussed in detail in Chapter 6 under ratios) helps assess future cash flows.

1.9 Qualitative characteristics of useful financial information

The Framework, which was revised in May 2019, notes that qualitative characteristics of useful financial information are the attributes that make the information in the financial reports useful to users. It lists two fundamental qualitative characteristics: relevance and faithful representation. In addition, it notes that comparability, verifiability, timelines and understandability are characteristics that enhance the two fundamental characteristics.

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In summary, the qualitative characteristics set out in the Framework are:

- Fundamental qualitative characteristics:
 - relevance
 - faithful representation.
- Enhancing qualitative characteristics:
 - comparability
 - verifiability
 - timeliness
 - understandability.

If information is to assist users in making decisions about the allocation of scarce resources, it should help them make, confirm or correct predictions about the outcomes of past, present or future events. Information is *relevant* if it is capable of making a difference in a decision by users of the accounting reports. To make a difference, it needs to have predictive and/or comparative value. Predictive value means it is useful as an input to making a decision. For example, information on sales revenue is likely to help an investor decide whether to buy or sell shares. The level of present liabilities may be useful for a lender in deciding whether to provide further borrowings to a company. Financial information also has confirmatory value as it provides feedback on previous evaluations, i.e. it confirms or changes the view of the decision making. This year's sales figures can have both predictive value (used as a basis for predicting future revenue) and confirmatory value when being compared to previous predictions of the present year's sales.

The financial statements should not be deliberately misleading. They should not be designed to lead users towards conclusions that are desired by the preparers. This is the criterion of 'faithful representation'. The financial statements should report the economic substance of events happening to the company, and the numbers should measure the events neutrally, neither overstating nor understating their impact. Information should, without bias or undue error, faithfully represent those transactions and events that have occurred. To have perfect faithful representation, the financial information needs to be complete, neutral and free from error. While such perfection is seldom completely achievable, the board of directors' objective is to maximise these qualities.

Complete means that it includes all necessary information so that the user can understand the phenomenon being depicted. This becomes a professional judgement on how much detail needs to be given to be complete. Neutral refers to the definition of information without bias in which information is presented. Free from error means that there are no errors or omissions in the description of the

phenomenon and the process to produce the information is accurate. It is important to note that information cannot be perfectly accurate, as there are many estimates in financial statements (to be discussed later). An estimate can still be a faithful representation if the description is accurate, the nature and limitations of the estimates are described and the processes used to produce the estimates are accurate.

In discussing relevance, it is important to understand the concept of materiality. The materiality concept is concerned with assessing whether omission, misstatement or non-disclosure of a piece of information would affect the decisions of users of the accounting reports. Just what is or is not material is a matter of judgement, and has been the subject of considerable research and study by accountants and auditors. Usually, people judge materiality by considering the size of a possible error compared to the net profit or the total assets. For example, an accountant or auditor might judge that an error over 5 per cent of net profit or 1 per cent of total assets is material but an error smaller than that is not. The Framework specifically states that it cannot specify a uniform quantitative threshold for materiality. In practice, what is material is a matter of professional judgement that accountants and auditors need to make. The materiality judgement depends on any particular uses of the information that are expected, and on whether the error moves the profit to a loss or violates some condition in a loan agreement.

In the list that follows, we elaborate on the four enhancing qualitative characteristics (based on the Framework).

- **Comparability:** information about one organisation is more useful when it can be compared with similar information from another organisation and also is comparable over time within the same organisation. In terms of comparability, GAAP contains many detailed rules with several industry exceptions and alternative accounting policies for the same transactions. All these exceptions and alternative treatments certainly lead to some difficulties in making comparisons across companies. Analysts often come up with their own standard way of presenting accounting data by taking published financial data and converting it to their own requirements. Comparability is not the same as consistency, which refers to using the same methods consistently over time or using the same methods in a single period across different parts of the organisation. However, this consistency of the use of methods will help achieve the goal of comparability.
- **Verifiability:** the numbers in the financial statements can be verified directly by looking at documentation (e.g. the cost price of equipment) or through direct observation (e.g. counting cash or inventory). They can also be verified indirectly by checking inputs to a model formula and recalculating the outputs. Indirect verification would be the checking of the inputs to a model or formula and then using the same methodology recalculating the outputs.
- **Timeliness:** refers to having information available when users need to make their decisions. However, having information earlier rather than later can mean that it is less complete. For example, certain estimates become more accurate over time (e.g. the estimate of uncollectable accounts receivable, to be discussed in Chapter 11, or the obsolescence of inventory, discussed in Chapter 12 or estimates of depreciation of assets, discussed in more detail in Chapter 13). Liabilities related to certain past acts may also become more accurately measured as time passes (e.g. after court deliberations). However, the characteristic of timeliness incorporates the idea that it is important to have the information when the decision is being made even though there may be considerable uncertainty about the amount reported. For example, some of the decisions by the board of directors, the analyst, and the banker and the supplier noted earlier need to be made at a certain point in time. While the outcome of a particular contract may be relevant information, the decisions often cannot wait until that contract has been finalised.
- **Understandability:** information is more useful if informed decision-makers can understand it. Understandability can be increased by presenting information in a clear and concise manner. The Framework states that users are expected to have a reasonable knowledge of business, economic activities and accounting, and a willingness to study the information with reasonable diligence. However, there is a caveat to understandability: information about complex matters, if relevant to users, should not be excluded on the grounds that it is too difficult for users to understand.

The accounting profession has been criticised for the increased complexity of financial reports, where the notes to the accounts can exceed 50 pages. One reason for this is the increased complexity of transactions

and the increased need for estimates. For example, when senior executives are only paid a salary, reporting executive remuneration is much easier than when they get additional share options and various incentives based on accounting numbers. Also, given the legal consequences and penalties for omission of required data, it is likely that management will over-report rather than under-report when there is uncertainty about the level of detail required. Boards of Directors do not want to be accused of not following 'best practice' and so if one company in the industry decides to make additional disclosures, other companies often follow. How to manage this complexity is an ongoing consideration for those who set accounting standards.

What does all this mean for you as an introductory accounting student? These accounting standards are continually being considered around the world. Some important changes in accounting have already occurred and others are still emerging. Accounting is not static; the better you understand the basic fundamentals of accounting, the better you will be able to cope with these changes. So, terms such as relevance, faithful representation, comparability, verifiability, timeliness and understandability may appear complex when reading Chapter 1 but they should become clearer as you work through the chapters.

Trade-offs among accounting principles

If you think about the qualitative characteristics mentioned (i.e. relevance, faithful representation, understandability, and comparability), you may see that they do not always fit together well. For example, it would seem sensible to propose that the more faithfully representative the accounting information is, the better. You can achieve this by being very careful about how you prepare it, checking it carefully and having the auditors come in and verify it, and maybe even waiting until some major uncertainties are resolved, so you do not have to estimate them. It also seems sensible that decision-makers need information that is relevant to their decisions when they are making them. This means that information should be timely: people should not have to wait for the information they need.

In this light, let's consider a company trying to report on its liability to employees for long service leave. Generally, in Australia employees who stay at the one company for over 10 years accumulate additional leave based on the time at the company. This is called long service leave; it accrues in days of leave and is only paid when the employee takes the leave (e.g. as extra holidays) or finishes employment with the organisation. The company has thousands of employees who will take this time off over the next 40 years, if they do not leave the employer earlier. The dollar amount of long service leave paid will depend on how much the employees earn when they take the leave, and that is not yet known for most of them. The amount of leave depends on how long the employees have been with the firm. Under most employment awards, it starts to accumulate after 10 years of service. For each extra year of service, it increases at different rates. If the employee leaves before 10 years of service, no amount normally needs to be paid unless the employee's leaving was involuntary.

How is that for a mass of uncertainty? Any number you come up with for the long service leave liability will be based on all sorts of estimates of unknown future events. Therefore, to get a liability figure that faithfully represents the liability, you really have to wait 20 or 30 years until most of the employees have retired or taken their leave. You can always expect to get more reliable data by just waiting a while, even years, to see how things turn out. But waiting 20 or 30 years will hardly provide timely information that is relevant to decisions such as those being made by the board of directors, the investment analyst, the banker and the supplier mentioned above. Such decisions require the best information we can come up with now, even if it is necessarily based on estimates and assumptions. The longer one waits to make the estimate, faithful representation rises and relevance falls, so we have to try to find some midpoint where there is enough of both, even though we may prefer even more of one or both of these attributes.

1.10 Financial statement concepts

Now that you have seen the financial statements and the basic principles upon which accounting relies, it is important to understand some basic assumptions underlying current accounting practice and the preparation

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of financial statements. The following concepts are discussed: accrual basis, going concern, accounting entity, accounting period, monetary and historical cost.

- **Accrual basis:** financial reports are prepared on the accrual basis of accounting; that is, the effects of transactions and other events are recognised as they occur, regardless of whether cash is received or paid at that time. The use of accrual accounting provides a better basis for assessing an entity's past and future performance than information only related to cash receipts and cash payments during a period.
- **Going concern:** financial statements are prepared on the premise that the organisation will continue operations as a going concern in the foreseeable future. If this is not the case, it is necessary to report the liquidation values of an organisation's assets, i.e. what the assets could be sold for. Consider the following example. Assume last year your university completely remodelled your classrooms with new carpet, tiered seating and new inbuilt projection equipment. Under historical cost, the cost of all those renovations would be recorded as an asset and then depreciated over the life of the asset. If the costs were \$10 million and depreciation in year 1 was \$1 million, the book value (cost – accumulated depreciation) would be \$9 million. This is the amount that would appear on the balance sheet. However, if the government closed your university – that is, it is no longer a going concern – the assets would need to be recorded at liquidation value. Basically, they would be recorded at what they could be sold for. Note that there is not much of a second-hand market for tiered seating to fit a certain size of room, or carpet that has been cut to fit that room. Liquidation value in this case would likely be a lot less than historical book value.
- **Accounting entity:** under this concept, the accounting entity is separate and distinguishable from its owners. For example, the accounting entity of a sole trader is differentiated from the financial affairs of the owner. Similarly, a company is a separate entity from its shareholders. If either the sole trader or a shareholder of a company goes out and buys a new set of golf clubs, it may affect his or her personal finances but does not affect the accounting entity. Accounting entities do not necessarily correspond to legal entities. For example, as noted previously, the personal financial affairs of the sole trader can be separated from the finances of the business, although there is no legal distinction. This concept puts a boundary on the transactions that are to be recorded for any particular accounting entity. It also allows the owner to evaluate the performance of the business.
- **Accounting period:** the life of a business needs to be divided into discrete periods to evaluate performance for that period. Dividing the life of an organisation into equal periods to determine profit or loss for that period is known as the accounting period concept. The time periods are arbitrary, but most organisations report at least annually, with large companies preparing half-yearly and quarterly financial statements for outside purposes (in some countries) and at least monthly (sometimes more frequently) financial statements for management purposes.
- **Monetary:** accounting transactions need to be measured in a common denominator, which in Australia is, not surprisingly, the Australian dollar. This allows comparisons across periods and across different companies. Transactions that cannot be reasonably assigned a dollar value are not included in the accounts.
- **Measured bases:** under the historical cost concept, assets are initially recorded at cost. As you will see in later chapters, many assets, such as inventory, will still be recorded at cost in the balance sheet in subsequent periods although their value has increased. Some other assets – such as property, plant and equipment – can be revalued periodically. Thus, in reading a balance sheet it is important to note at what valuation the assets are being recorded (valuation methods including 'cost' and 'fair value' are discussed in later chapters).

Some of these basic concepts have already been briefly mentioned earlier in this chapter, and all will be referred to again throughout the book. We note that the Framework only lists accrual accounting and going concern as the basic assumptions of financial reporting, but many authors, including us, would also include the accounting entity, accounting period, monetary assumptions and historical costs.

1.11 Is accounting really important?

In case you are not convinced that accounting numbers (profit and balance sheet figures) are important, we hope the following examples may convince you. Concrete examples of our suggestions appear in the financial section of most newspapers every day. Our examples that follow show that a lot of emphasis is placed on accounting figures (especially profits) in decision-making by management and by users such as shareholders and creditors, corporate boards and consumer groups, as well as their impact on a range of other community groups.

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- a *Used by management in making business decisions.* Accounting numbers have an important impact on management decisions to contract and expand the business, which in turn affect employees, suppliers, contractors and the economy. For example, the availability of large sums of cash, undrawn debt facilities, and growing cash flows enable companies to take advantage of opportunities to expand by acquiring other businesses. On the other hand, businesses are often put up for sale when they cannot provide the financial performance (as measured by accounting numbers) to give investors the return they want, or they take actions including cutting staff numbers and/or selling off some other parts of the business.
- b *Used by shareholders for decision-making purposes (and impact on shareholders).* Both good and bad accounting news often has a big impact on the share market (see Chapter 8 for a more sophisticated discussion). In particular, when companies announce bad news their share prices are usually adversely affected and sometimes the drops can result in a \$100 million plus decrease in the value of the company.
- c *Used by bankers and other creditor groups.* Bankers use accounting numbers to decide whether to lend, to determine the level of risk and often the interest rate to charge. Rating agencies such as Standard & Poor's and Moody's use accounting numbers to give their credit ratings, which have an impact on the interest rates companies have to pay. Weaker accounting numbers can result in the loss of the much desired AAA credit rating. This applies not only to companies but State governments which have received warnings about ongoing deficits, growing risk and the decline in debt ratios.
- d *Used by corporate boards in rewarding and removing executives.* Most executive compensation schemes include performance bonuses, and accounting numbers are key components of these performance hurdles. You will find many reports of pay changes of many millions of dollars for CEOs of the largest companies due to meeting or not meeting profitability targets.
- e *Used by unions and management in negotiating wage agreements.* In pay disputes, both managers and unions often use accounting numbers to support their case. For example, the higher the profits, the more likely the pay increases. Unions often refer to the company's high profit levels when arguing for higher wages.
- f *Impact on the community and consumers.* Dwindling profits have resulted in movement of sporting events (e.g. moving the Australian Grand Prix), changing budget allocation to TV stations which affect the programs they offer, music festivals cancelled in future years, etc.
- g *Impact on employees and jobs.* Accounting numbers can lead to corporate failure, with resulting consequences for workers. In Australia, there have been major losses of jobs in the car manufacturing industry which has been closed down due to falling profits. For example, cessation of manufacturing of Holden resulted in the loss of approximately 3000 jobs at Holden, but many other job losses in companies that were suppliers of tyres, steering wheels, etc.

1.12 Financial management and the finance function

While accounting and finance are generally separate disciplines of study and research in most universities, the terms 'accounting function' and 'finance function' in most large companies have tended to merge and are

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often referred to as 'the Finance Department'. For example, the finance function at most large universities refers to all accounting processes related to the production of a set of financial statements, oversight of financial controls, investment decisions, raising of finances and investing funds, management of cash, budgeting, etc.

Within most large organisations, there will be a manager for the finance function who is a vital part of the senior management team. This person plays a key role in planning and decision-making processes in their organisation. This person will generally be called the chief financial officer (CFO), financial controller or chief accountant. The work done by these financial managers is often referred to as 'financial management'.

Financial management involves managing the finances of the organisation to achieve its strategic goals and objectives. It includes preparing financial reports, setting financial goals and budgets, analysing performance data and implementing financial controls, managing cash flow and investment discussions, as well as making decisions about borrowing money and raising capital.

Core knowledge for the financial manager is an understanding of the content of financial statements and the ability to analyse these financial reports for decision making. With this core knowledge, the financial manager will carry out a wide array of functions including:

- determining the capital requirements of the organisation, based on present and future estimates of financial performance and financial position
- establishing financial controls, which will include the oversight of internal controls and the use of techniques such as ratio analysis and financial forecasts
- obtaining sufficient funds to meet the organisation's needs and determining the composition of those funds (e.g. debt versus equity financing)
- cash management, including managing the cash flow cycle of the organisation and cash budgets
- capital investment management, including capital budgeting decisions to determine in which long-term projects to invest
- non-financial reporting and analysis to achieve the organisation's strategic goals and long-term value creation targets.

1.13 Do you really need a knowledge of accounting and financial management?

LO10 Let's start with a very strong statement: *It is highly likely that accounting numbers will have a big impact on your life and career, no matter what path you take.* In life, accounting numbers impact the returns you can expect to earn from share market investments (in this case, accounting numbers for listed organisations), the amount you can borrow to purchase a home or start a business (in this case, your own accounting numbers – think revenue less expenses and any assets you hold as potential security) and the financial plans you make and manage for your future.

Now to your career: first, the security of your job will depend not only on your performance in the role, but most certainly on the financial performance of the organisation for which you work. Regardless of the area of management you end up pursuing, accounting numbers are likely to affect you. If you take an accounting/financial management path, accounting numbers will shape and inform each decision you make, enabling you to make a valuable contribution to your organisation.

But what if you decide you do not want to take up an accounting/financial management role? Say, you are more interested in marketing, economics, information technology or consulting. In this case, there will almost certainly be financial consequences to most management decisions and, therefore, you will need a fundamental understanding of accounting and financial management to know the likely financial implications when considering alternative proposals. Also, we can assure you that as you take on more senior roles, accounting numbers such as the profit of the organisation will affect your remuneration (e.g. go to the

annual report of any company and look at the company's remuneration report and you will see that senior management remuneration figures are closely linked to accounting numbers). You need to know how those accounting numbers are determined and what actions improve those numbers. Would you play cricket, tennis, football or netball without knowing the rules of the game? If you have the goal of becoming a CEO or Director of a company, you cannot survive without basic financial management skills and the ability to interpret financial reports.

Maybe you have great sporting or artistic ability, and this will be your career choice. The last two years have seen numerous newspaper articles written about how the financial statements of organisations like Cricket Australia, Australian Rugby League, Australian Rugby Union, Opera Australia, the Australian Ballet and various entertainment facilities face financial difficulties and that their present balance sheet and profit figures may not allow them to pay their highly skilled employees what they had previously earned. In some instances, there has been turnover in senior executives as new solutions are looked for to address the financial difficulties faced.

As an example of the effect of the financial numbers on both administration and players, consider the situation for Cricket Australia during the pandemic when there were large restrictions on crowds at matches and many matches needed to be cancelled. On the basis of the annual report and various newspaper articles, the need to strengthen Cricket Australia's financial position during COVID-19 was highlighted. Match attendance was affected with revenues reduced, and costs increased with additional items such as biosecurity-related expenses. To manage these financial shortfalls, Cricket Australia required financial management initiatives, including: a large number of redundancies in Head Office including senior executives; player salaries are tied to revenues, so any drop in revenues adversely affects their earning capacity; and the grants from Head Office to each State cricket association decreased with consequent negative effects on junior cricket.

If you work in the public sector or for not-for-profit organisations including charities, the level of activity that your organisation can support will depend on its financial performance. As a general rule, your expenses cannot exceed revenues (including donations received).

Finally, even if you decide to move into politics, you need a good understanding of financial statements. Much of the support for business during the pandemic, including the Jobkeeper Program, incorporates different levels of payments based on changes in accounting numbers (e.g. percentage drop in revenues). Discussion between federal and state governments has incorporated the strength of balance sheets. In August 2020, various newspaper reports referred to comments by Josh Frydenberg, Federal Treasurer, who when outlining support provided by the federal government suggested that some states should contribute more. For example, it was suggested that Victoria's balance sheet was strong enough to do so. The strength of the balance sheets of both companies and governments affects the credit ratings of these organisations (e.g. A, A⁻, etc.), which in turn affects the interest rate at which funds can be borrowed.

Have we convinced you that accounting numbers are important to you and financial skills will help you in any career?



FOR YOUR INTEREST

The Commonwealth Bank of Australia 2021 Annual Report (page 71) sets out a list of skills and experience considered essential to the effectiveness of its Board of Directors (https://www.commbank.com.au/content/dam/commbank-assets/about-us/2021-08/2021-annual-report_spreads.pdf). Listed below are five of these skills relevant to this book.

- 1 Financial acumen (including proficiency in financial accounting and reporting);**
- 2 Governance (including understanding the regulatory frameworks underpinning corporate governance principles);**
- 3 Risk management (including identifying, assessing and monitoring financial risks);**
- 4 People and culture (including remuneration and reward risks), and**
- 5 Environmental and social (understanding potential risks from an environmental and social perspective).**

In this book you will learn the fundamentals related to these skills as a great start to a successful career.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Classification of items

Listed below are balances at 30 June 2022.

	\$
Cash at bank	210 000
Inventory	60 000
Sales	210 000
Wages	40 000
Cost of goods sold	70 000
Share capital	140 000
Accounts payable	30 000

- 1 Classify each account as an asset, liability, revenue, expense or equity.
- 2 Prepare an income statement for the period ending 30 June 2022.
- 3 Prepare a balance sheet at 30 June 2022.

PRACTICE PROBLEM B

Accrual profit

- 1 During the accounting period, Green Limited received \$750 000 from sales and paid out \$580 000 in wages and other expenses. However, an extra \$260 000 worth of sales were made during the year but the cash has not been collected yet. The company also owes \$240 000 for various expenses. What is the accrual profit?
- 2 Green Limited purchased 3000 items for \$5 each on credit and sells 2000 of these items on credit for \$8. What is the sales revenue and cost of goods sold for the period?

PRACTICE PROBLEM C

Calculate shareholders' equity

Given the following information relating to Penguin Ltd, what is the balance of shareholders' equity? (Remember $A = L + SE$)

	\$
Property, plant and equipment	1 500 000
Accounts receivable	400 000
Cash	100 000
Inventory	500 000
Bank loan	250 000
Wages payable	90 000

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 What is the basic purpose of financial accounting?
- 2 Distinguish between financial performance and financial position.
- 3 What is the difference between financial and management accounting?
- 4 Who are the main parties that comprise the social setting of accounting?
- 5 What is meant by credible periodic reporting? What prevents organisations from making financial statements increasingly credible? (Consider cost–benefit implications.)
- 6 List four important users of financial accounting and describe the use that each user would make of the information.
- 7 Do all users of financial accounting have the same information needs? Why or why not?
- 8 List some similarities and differences between the need for financial information for shareholders and bankers.
- 9 List five situations in which judgement is required by the preparers of financial information.
- 10 What does an audit achieve?
- 11 Describe what is meant by accrual accounting. How does it differ from cash accounting?
- 12 Who uses accrual accounting?
- 13 Consider the following accounts: accounts payable, accounts receivable, cash and inventory. Which of these terms would you see in financial statements prepared under (a) accrual accounting and (b) cash accounting?
- 14 What are the three key financial statements, and what relevant information do they provide to users of accounting reports?
- 15 Explain, in simple terms, each of the following financial accounting terms:
 - a accounting entity
 - b accounting period
 - c going concern
 - d materiality.
- 16 What are the fundamental qualitative characteristics of useful financial information and what are the enhancing characteristics?
- 17 Provide an example of trade-offs among accounting principles.
- 18 The Framework states that understandability is an enhancing qualitative characteristic. Is this consistent with the huge complexity in financial statements?
- 19 What other labels are used to describe a ‘balance sheet’ and an ‘income statement’?

PROBLEMS

PROBLEM 1.1

What are various people's interests in financial accounting?

Briefly describe what each of the following people would likely want to learn from the financial statements of BrandX Ltd, and how each might be affected if the statements showed good or bad financial performance or financial position.

- 1 The chief executive officer (CEO) of the company
- 2 The company's chief financial officer (CFO)

- 3 The chairperson of the company's board of directors (the board evaluates the CEO's performance on behalf of the shareholders)
- 4 The partner of the auditing firm for whom BrandX is a client
- 5 The local manager of tax collections for the Australian Taxation Office
- 6 A shareholder who owns 100 shares of BrandX
- 7 A shareholder who is thinking of buying some shares of the company
- 8 The local manager of Big Bank, which has made a large loan to BrandX

PROBLEM 1.2

What are various people's interests in financial accounting?

Briefly describe what each of the following groups would like to know from the financial statements of the Swans Football Club.

- 1 The CEO
- 2 The players
- 3 The supporters
- 4 The suppliers of gourmet pies and beer for home games

PROBLEM 1.3

Users and their needs

Accounting information is demanded by a wide range of external users, including shareholders, bankers, suppliers, trade unions, the Australian Securities and Investments Commission (ASIC) and the Australian Taxation Office (ATO). Which user is likely to seek each of the following types of information?

- 1 The profitability of each division in the company
- 2 The likelihood of the company meeting its interest payments on time
- 3 The prospects for future dividend payments
- 4 The probability that the company will be able to pay for its purchases on time
- 5 The profitability of the company based on the tax law
- 6 The change in profitability of the company since the last contract with employees was signed
- 7 The disclosures on the financial position and performance of a company issuing shares to the public for the first time.

PROBLEM 1.4

Calculate accrual accounting profit

Paul Jones set up his own catering business on 1 July 2021. During the 12 months up to 30 June 2022 the following transactions occurred:

- 1 Paul put \$30 000 of his own money into the business.
- 2 He borrowed \$40 000 from the bank for one year at 5 per cent per annum, with interest to be paid at the end of the loan.
- 3 He paid \$12 000 in wages and owed \$2400 in wages for work done.
- 4 He bought catering equipment for \$8000, which has an expected useful life of four years.
- 5 He paid other expenses of \$10 000.
- 6 Paul sent bills for \$60 000 to customers for work performed between 1 July 2021 and 30 June 2022. By 30 June he had received \$55 000 and expected the other \$5000 by August.

Using the concepts of accrual accounting, calculate Paul's profit for the year ended 30 June 2022.

PROBLEM 1.5

Accrual profit

Lock Limited made cash sales of \$650 000 and credit sales of \$270 000 (\$150 000 of which had been collected by year-end). It paid \$400 000 in expenses and owed \$220 000 at year-end. What was the accrual profit?

PROBLEM 1.6

Calculate accrual accounting profit

James Smith started a consulting business on 1 January 2022. During the period up to 30 June 2022, the following transactions occurred:

- 1 James put \$100 000 of his own money into the business.
- 2 He borrowed \$40 000 from the bank at 10 per cent per annum for one year with interest to be repaid at the end of the loan.
- 3 He sent bills for \$37 000 to customers for work performed. By 30 June he had received \$29 000 and expected the other \$8000 in July.
- 4 He bought equipment for \$8000 that has an expected useful life of four years.
- 5 He paid \$17 000 in wages.
- 6 He paid other expenses of \$12 000.
- 7 He received a \$3000 bill for advertising (appeared in newspapers in May; will be paid in July).

Using the concepts of accrual accounting, calculate James' profit for the six months ending 30 June 2022.

PROBLEM 1.7

Accrual profit

- 1 During the year ended 30 June 2022, French Horn Ltd made cash sales of \$100 000, credit sales of \$200 000 (\$40 000 of which were still to be collected at year-end), and received \$28 000 owing from credit sales, which occurred in May 2021. What is French Horn's sales revenue for the year ended 30 June 2022?
- 2 Also during the year ended 30 June 2022, French Horn paid \$60 000 and owed \$10 000 in employee wages. Of the \$60 000 paid, \$5000 related to wages payable as at 30 June 2021. What is the total of French Horn's accrual accounting expenses?
- 3 What is French Horn's accrual accounting profit for the year ended 30 June 2022?

PROBLEM 1.8

Prepare a balance sheet and calculate profit

- 1 Given the following balances, prepare a balance sheet as at 30 June 2022 for Willow Tree Limited.

	\$
Share capital	260 000
Bank loan	40 000
Accounts payable	90 000
Wages payable	50 000
Inventory	200 000
Cash at bank	40 000
Buildings	200 000
Retained profits	90 000
Accounts receivable	90 000

- 2 The company did not declare any dividends during the year. Its balance in retained profits at the start of the year was \$70 000. What is the profit for the year?

PROBLEM 1.9

Contents of financial statements

Match each item with the financial statement it would appear in by ticking the appropriate column.

Item	Balance sheet	Income statement	Statement of cash flows
Wages expense			
Cash paid for equipment			
Cash at bank			
Equipment			
Cash flow from customers			
Accounts payable			
Cash paid to employees			
Sales revenue			

PROBLEM 1.10

Comparing net profits and cash flow

Kingsford Customs was founded on 1 July 2022. At the end of the first year's operations, the following summary of its activities has been prepared by the owner.

- 1 Borrowed cash of \$60 000 from CAA Bank.
- 2 Employees earned \$96 800 of wages, of which \$40 000 is to be paid in the next accounting period.
- 3 Performed customised services that generated sales revenue of \$243 300, of which \$100 000 remained uncollected at the end of the year.
- 4 Other operating expenses, including phone bills and electricity amounting to \$26 800, were incurred during the year. Of this amount, \$10 000 remained unpaid at the end of the year.

Show the effect on net profit (ignore interest expense) and cash of each of the transactions for this accounting period.

PROBLEM 1.11

Contents of financial statements

Match each item with the financial statement that it would appear in by ticking the appropriate column.

Item	Asset	Liability	Shareholders' equity	Revenue	Expense
Inventory					
Cleaning expenses					
Cash at bank					
Marketing expenses					
Buildings					
Income taxes payable					
Loans from banks					
Accounts payable					
Retained profits					
Accounts receivable					
Income tax expense					
Cost of goods sold					
Sales revenue					

PROBLEM 1.12

Classification of items

Listed below are balances for 2022.

	\$
Accounts receivable	100 000
Sales	250 000
Electricity	30 000
Retained profits	70 000
Loan	200 000
Transportation costs	10 000

- 1 Classify each account as an asset, liability, revenue, expense or equity.
- 2 Prepare an income statement for the period ending 31 December 2022.

PROBLEM 1.13

The accounting equation

Cardigan Ltd has total assets of \$150 000 and liabilities that add up to \$70 000 as at 30 June 2021.

- 1 What is Cardigan's shareholders' equity as at 30 June 2021?
- 2 During the year to 30 June 2022, Cardigan's total assets increase by \$63 000 while total liabilities increase by \$25 000. What is the amount of Cardigan's shareholders' equity on 30 June 2022?
- 3 Now assume that in the year to 30 June 2022, Cardigan's total liabilities increase by \$20 000 and its shareholders' equity decreases by \$12 000. On 30 June 2022, what is the level of Cardigan's total assets?
- 4 Assume that in the year to 30 June 2022, Cardigan's total assets double while its shareholders' equity remains unchanged. What are its total liabilities as at 30 June 2022?

PROBLEM 1.14

The accounting equation

Use the accounting equation to answer the following questions.

- 1 Pillow Ltd halved its liabilities during the year. At the beginning of the year, the amount of total assets was \$80 000 and owners' equity was \$50 000. What is the amount of Pillow's total liabilities at the end of the year?
- 2 Buffalo Ltd began the year with assets of \$60 000 and liabilities of \$25 000. Net profit for the year was \$43 000. What is the amount of owners' equity at the end of the year?
- 3 During the last financial year, Sparkle Industries tripled the amount of its assets. At the end of the year, total liabilities amounted to \$57 000 while owners' equity was \$15 000. What was the amount of total assets at the beginning of the year?

PROBLEM 1.15

Matching financial statement items to statement categories

Raindrop Holdings Ltd is a public company. Listed below are items taken from its recent balance sheet and income statement. Mark each item in the following list as an asset (A), liability (L) or shareholders' equity (SE) that would appear on the balance sheet, or revenue (R) or expense (E) that would appear on the income statement.

- 1 Property, plant and equipment
- 2 Sales revenue
- 3 Trade and other payables
- 4 Advertising costs
- 5 Provisions

- 6 Inventories
- 7 Prepayments
- 8 Borrowings
- 9 Reserves
- 10 Cash and cash equivalents
- 11 Depreciation
- 12 Cost of goods sold

PROBLEM 1.16

Income statement

Given the following information, prepare an income statement for PK Ltd for the year ended 30 June 2022.

	\$
Sales	700 000
Cost of goods sold	400 000
Rent expense	60 000
Wages	150 000
Advertising	50 000
Training expense	18 000

PROBLEM 1.17

Income statement

Given the following balances, prepare an income statement for the year ended 30 June 2022 for Bush Traders.

	\$
Sales	480 000
Cost of goods sold	210 000
Wages	80 000
Electricity	40 000
Travel	20 000
Advertising	10 000

PROBLEM 1.18

Analysing revenues and expenses and preparing an income statement

Assume you are the owner of Double Café, a coffee shop in Sydney's CBD. At the end of June 2022, you find (for June only) this information:

- 1 Sales, as per cash register records, of \$47 000, plus sales on credit (two birthday parties) of \$750.
- 2 The cost of goods sold during June had cost \$16 000 consisting of coffee, cups and cakes.
- 3 During the month, according to the cheque book, you paid \$14 000 for salaries, rent, advertising and other expenses; however, you have not yet paid the \$680 monthly bill for electricity for June.

On the basis of the data given (disregard income taxes), what was the amount of net profit for June? Show computations.

PROBLEM 1.19

Calculate shareholders' equity

GT Limited has the following assets and liabilities.

	\$
Cash	200 000
Loan	300 000
Accounts payable	220 000
Accounts receivable	340 000
Equipment	400 000

- 1 Classify each balance as an asset or a liability.
- 2 Calculate shareholders' equity.

PROBLEM 1.20

Calculate shareholders' equity

Given the following information relating to Stripes Ltd, what is the balance of shareholders' equity?

	\$
Land and buildings	2 800 000
Accounts payable	250 000
Cash and cash equivalents	340 000
Inventory	410 000
Bank loan	600 000
Taxes payable	104 000

PROBLEM 1.21

Matching cash flow statement items to categories

The following items were taken from a recent cash flow statement. Note that different companies use slightly different titles for the same item. Mark each item in the list as a cash flow from operating activities (O), investing activities (I) or financing activities (F).

- 1 Cash paid to employees
- 2 Cash borrowed from the bank
- 3 Cash proceeds received from sale of investment in another company
- 4 Income taxes paid
- 5 Repayment of loan principal
- 6 Cash received in return for issue of share capital
- 7 Cash received from customers
- 8 Purchases of property, plant and equipment
- 9 Cash paid to suppliers
- 10 Cash paid for dividends to shareholders

PROBLEM 1.22

Accounting assumptions

Consider the following statements relating to how we might account for certain transactions or events. What accounting assumption or principle underlies each?

- 1 'Accounting financial statements are primarily based on historical costs.'

- 2 'At the end of each period, a company has to calculate any salaries that have accrued, and recognise an expense and a liability for that amount.'
- 3 'If a company changes its depreciation policy, it needs to disclose (in the notes to the financial statements) the nature of the change, and its financial effects.'
- 4 'If a company issues new shares this is recorded in the company's books. However, a sale of the company's shares from one shareholder to another is not.'

PROBLEM 1.23

Qualitative characteristics

The Framework for the Preparation and Presentation of Financial Statements examines the characteristics of accounting information that make this information useful for decision-making. It also points out that various limitations, which are inherent in the measurement and reporting process, may necessitate trade-offs between these limitations and the positive characteristics of useful information.

- 1 Briefly describe the following characteristics of useful accounting information:
 - a relevance
 - b faithful representation
 - c understandability
 - d comparability
 - e timeliness
 - f verification.
- 2 For each of the following pairs of information characteristics, give an example of a situation in which one of the characteristics may be sacrificed in return for a gain in the other:
 - a relevance and verification
 - b faithful representation and timeliness
 - c comparability and relevance
 - d relevance and understandability.

CASES

CASE 1A

Woolworths Limited

Refer to the extracts of the 2021 annual report of Woolworths Limited (https://www.woolworthsgroup.com.au/icms_docs/195984_annual-report-2021.pdf) in the book's appendix. All questions relate to the consolidated accounts.

- 1 On what date does Woolworths' most recent reporting year end?
- 2 For how many years does it present complete:
 - a balance sheets?
 - b income statements?
 - c cash flow statements?
- 3 Provide indicators that Woolworths uses accrual accounting.
- 4 What were total assets at 27 June 2021?
- 5 What were total liabilities at 27 June 2021?
- 6 What was shareholders' equity at 27 June 2021?
- 7 State the accounting equation in dollar figures at 27 June 2021.
- 8 What was the net profit before tax for 2021?
- 9 What was the net profit after tax for 2021?
- 10 What were the largest cash inflow and outflow relating to operating activities?
- 11 Give two reasons why the cash flow from operations is a different figure from operating profit after tax.
- 12 Did its total assets increase or decrease over the last year?
- 13 How much inventory (in dollars) did Woolworths have as at 27 June 2021?

- 14 Are its financial statements audited by an independent firm? Who is the auditor for the company?
- 15 What information would Woolworths' investors and lenders be most interested in?
- 16 Provide examples of the accounting principles of materiality and comparability from note 1 of the accounts.

CASE 1B**Accrual and cash profit in measuring performance**

Wings Ltd is an airline services company with a plant near Sydney Airport and service centres in several states. It provides meals, serviettes and other food-related items, cleaning, interior maintenance and several other services to various airlines. The company has been fairly successful, though recessions and the deregulation of air services have put significant pressure on its operations. When the company began in the late 1990s, it had a relatively weak financial position (mainly because of borrowing to get set up) and its financial performance, while satisfactory, has not enabled it to reduce its debt load very much. It seems that every time the company gets a little ahead, new equipment must be purchased or new product lines developed, and the company finds itself borrowing again.

A recent year provides a good example. The company's accrual profit was \$188 000 and its cash profit was \$241 000. (The difference resulted because of a depreciation expense of \$96 000 and uncollected revenue being \$43 000 higher at the end of the year than at the beginning. In the company's financial statements, the phrase 'net profit for the year' was used to describe the accrual profit and 'cash generated by operations' described the cash profit.) The CEO had looked forward to using some of the cash to pay debts, but late in the year the company had to buy new food-handling and wrapping equipment for \$206 000 to meet revised standards announced by its airline customers. Therefore, the company ended up only a few thousand dollars ahead in cash, not enough to make much of a dent in its debts.

The CEO has a regular half-yearly meeting with the company's external auditor to discuss accounting and auditing issues. After the results were known, the CEO phoned the auditor and made the following comments: 'I thought I'd ask you to think about a few things before our meeting next week. When it comes to our accounting, I think the company has too many masters and too many measures. What I mean is first that too many people are concerned with what our financial statements say. Why can't we just prepare financial statements that meet my needs as CEO? Why do we have to worry about all the other people outside the company? Sometimes I'm not even sure who all those other people are, since you accountants and auditors often just talk about "users" without being too clear what you mean. Also, I'm confused by the existence of both a "net profit" figure and a "cash flow from operations" figure in our financial statements. Why can't we just have one or the other to measure our performance?'

The CEO raised issues that will be addressed frequently as this book develops your understanding. But for now, what would you say to the CEO?

CASE 1C**Audit and ethics issues**

Assume you were reading an article on the auditing profession in a professional accounting magazine that included terms such as independence and auditors' responsibilities. It also noted that there was a large standards expectation gap between auditors and users of financial statements.

- 1 What is meant by independent assurance?
- 2 Give some examples of lack of independence.
- 3 What does the 'Expectation Gap' refer to?
- 4 How do management's and auditors' responsibilities differ?
- 5 Why is the integrity of management important to the financial reporting process?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

- 1A** Financial performance and financial position.
1B (i) Cash profit: $\$100\ 000 - \$60\ 000 = \$40\ 000$
(ii) Accrual profit: $\$100\ 000 + \$200\ 000 - \$60\ 000 - \$10\ 000 = \$230\ 000$

- 1C** (i) A
(ii) L
(iii) Not listed in the balance sheet
(iv) SE
(v) A
(vi) L

- 1D** (i) \$60 000; \$100 000 – L = \$40 000
(ii) \$500 000; A = \$200 000 + \$300 000
(iii) \$40 000; \$300 000 = \$200 000 + \$600 000 + RE
- 1E** NP: \$200 000 – \$90 000 – \$60 000 – \$10 000 = \$40 000
RP: \$80 000 + \$40 000 = \$120 000
- 1F** \$100 000 + \$60 000 – \$40 000 = \$120 000

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

1

Account	Classification
Cash at bank	Asset
Inventory	Asset
Sales	Revenue
Wages	Expense
Cost of goods sold	Expense
Share capital	Equity
Accounts payable	Liability

2

Income statement For the year ending 30 June 2022	
	\$
Sales	210 000
Cost of goods sold	(70 000)
Gross profit	140 000
Wages	(40 000)
Net profit	100 000

3

Balance sheet As at 30 June 2022			
	\$		\$
Assets		Liabilities and shareholders' equity	
Cash at bank	210 000	Accounts payable	30 000
Inventory	60 000	Share capital	140 000
		Retained profits	100 000*
	<u>270 000</u>		<u>270 000</u>

*Opening retained profit + profit-dividend = closing balance retained profit (0 + 100 000 – 0 = 100 000)

PRACTICE PROBLEM B

- 1 Accrual profit = total sales – total expenses
= \$750 000 + 260 000 – 580 000 – 240 000
= \$190 000
- 2 Sales revenue = $2000 \times \$8$
= \$16 000
Cost of goods sold = $2000 \times \$5$
= \$10 000

PRACTICE PROBLEM C

$$\begin{aligned}\text{Shareholders' equity} &= \text{Assets} - \text{Liabilities} \\ &= (\text{Property, plant and equipment } \$1\,500\,000 + \text{Accounts receivable } \$400\,000 + \text{Cash } \$100\,000 + \text{Inventory } \$500\,000) - (\text{Bank loan } \$250\,000 + \text{Wages payable } \$90\,000) \\ &= \$2\,500\,000 - \$340\,000 \\ &= \$2\,160\,000\end{aligned}$$

2

The balance sheet and the income statement



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** describe the contents of a balance sheet (2.1, 2.2)
- LO2** determine what business activities result in changes in a balance sheet (2.2)
- LO3** carry out preliminary analysis based on a balance sheet (2.3)
- LO4** show how specific activities affect each item in the balance sheet (2.5)
- LO5** prepare a balance sheet (2.5)
- LO6** determine the effect of transactions on revenue and expenses (2.7)
- LO7** prepare an income statement (2.7)
- LO8** explain the nature of each of the items in the balance sheet and income statement for a public company (2.4, 2.9)
- LO9** describe the contents of the note reconciling opening and closing retained profits (2.8)
- LO10** explain the importance of income statements and balance sheets to managers (2.6, 2.10).

CHAPTER OVERVIEW

Chapter 1 introduced accrual accounting, the key financial statements and the users and preparers of these statements. Now we turn to three chapters that set out financial accounting's results and outline the record-keeping system that leads to those results. This chapter focuses on the content and use of the statements measuring financial position at a particular date (a balance sheet) and measuring financial performance (an income statement) over a period. Later chapters consider how the double-entry system produces accounts and how these accounts are assembled together to form financial statements.

The balance sheet is financial accounting's oldest and most basic report. It measures the organisation's financial position at a particular date and is the basis for much financial analysis. In fact, many companies use the term 'Statement of Financial Position' instead of 'Balance Sheet'.

The balance sheet summarises, at a particular date, the organisation's financial position as accounting measures it, in three categories of lists:

- resources (such as cash, inventory, land and buildings), called assets
- obligations (such as loans owing and debts to suppliers), called liabilities
- owners' interests (what's left after subtracting the obligations from the resources), called equity.

The individual items in each of these lists are called accounts (e.g. cash, inventory, land, loans), so over the centuries the task of preparing them has been named accounting, and the people who do it are accountants. All these words are derived from 'count', which is where accounting began: just counting things and listing them. Recall from Chapter 1 that:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

The balance sheet portrays the organisation by arranging its lists of accounts so that the assets sum to the same total as the other two lists, and setting them beside (or below) each other, something like this:

Assets	Liabilities and equity		
Item a	\$	Item x	\$
Item b	\$	Item y	\$
Etc.	\$	Etc.	\$
Total	T\$	Total	T\$

Because the left total equals the right total, accountants say that they balance – hence the name balance sheet. The underlying accounting system maintains this balance by making sure that any changes in one side of the balance sheet are matched by changes in the other side (e.g. assets increase and liabilities increase from buying an asset and owing the supplier) or by opposite changes on the same side of the equation (e.g. buy inventory for cash where an asset 'inventory' increases and another asset 'cash' decreases). This requires that each change be recorded twice, so the accounting system is called double-entry. The balance sheet turns out to be the accumulation of everything financial accounting has recorded about the organisation since the day the organisation began, so it is the fundamental cumulative accounting record.

The balance sheet provides important information about the organisation's financial structure and strength, but its description of the organisation's financial position is not the only story to be told. Its picture is static: it tells us what the position is at a point in time. Most managers, owners and creditors also want to know how well the organisation is performing and how it got to where it is. To provide that explanation, we need to measure financial performance. This is provided by an income statement (often called a profit and loss statement internally within organisations).

Corporations – which are legally incorporated companies such as Qantas, Commonwealth Bank, Telstra, BHP, Woolworths and thousands of local, national and international businesses – produce financial statements at least annually. So do many other kinds of organisations, such as the City of Brisbane, the Salvation Army, the Government of Australia and your university's student union. We mainly focus on businesses, especially corporations, but other kinds of organisations are considered where appropriate.

For large corporations, especially public companies whose shares are traded on stock markets, the financial statements are included in a larger document called an annual report. An annual report typically begins with narrative material on the corporation's performance and prospects, moves on to an extensive discussion and analysis by management, then turns to the financial statements: the balance sheet, the income statement and the statement of cash flows. The first two are discussed in this chapter, and the statement of cash flows is discussed in Chapter 6 (where you will learn about the contents) and in Chapter 16 (where you will learn about constructing a cash flow statement).

2.1 Introduction to the balance sheet

LO1 The balance sheet is only one of the set of financial statements, each of which is important for particular uses. However, as the summary of the double-entry system, the balance sheet is a critical part of financial accounting. It balances, containing two lists that have the same dollar total and together describe the organisation's financial position at a particular date.

The first list is the organisation's financial resources at that date, as measured by the financial accounting methods you will learn. These resources, called assets, include the organisation's cash, accounts receivable (money customers have promised to pay), inventory (goods for sale), land, buildings, equipment and many other resources that the organisation has accumulated and can use in the future.

The second list is the sources, or financing, of those resources at that date.

- These financing sources include existing obligations that will have to be paid in the future, such as loans from the bank, amounts due to be paid to employees and suppliers (wages payable and accounts payable respectively), long-term borrowings, and many other debts. Some estimates of future payments are also included, although they may not be legally owed just yet, such as promises to pay employee holiday leave and estimated future warranty costs based on the expected warranty expenses related to sales already made. All these legal obligations and estimates together are called liabilities.
- The list of sources also includes amounts received from owners, which normally involve permanent financing and do not have to be repaid (often called 'capital'), plus any past profits that have not been paid out to the owners in the form of dividends (often called 'retained profits'). Owners can finance an organisation by contributing money to the organisation, or by not taking profit out of the organisation, as we will see. The owners' investment is called owners' equity, or just equity. (For corporations, which are owned by shareholders, the term is usually shareholders' equity.)

Because the balance sheet balances, the total amount of assets must equal the total of liabilities plus equity. Arithmetically, the accounting equation (often called the balance sheet equation) therefore is:

$$\text{Sum of assets} = \text{Sum of liabilities} + \text{Sum of equity}$$

This gives us the accounting equation:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

This equation is fundamental to financial accounting. Accounting procedures are designed to create and maintain this equality at all times. For example, if you obtain \$100 by borrowing from the bank, your balance sheet would list the \$100 cash you received as an asset and the \$100 obligation to repay as a liability. By maintaining this equality, financial accounting ensures that all the financing sources that go with the resources are identified, and vice versa. This balanced pair of lists is one of the main reasons for financial accounting's value as an information system.

The two lists are put side by side, or the first above the second, as in the standard style shown in Figure 2.1.

Format of balance sheet
(all figures are as of a particular date)

Side-by-side style

Assets: Useful financial resources	Liabilities: Obligations to be paid
	Equity: Owners' investment

OR

Vertical style

Assets: Useful financial resources
Liabilities: Obligations to be paid
Equity: Owners' investment

In both cases, sum A = sum L + sum E

FIGURE 2.1 Balance sheet

Exhibit 2.1 is a simple example of a balance sheet using the side-by-side style to emphasise the equality of the two lists, with assets on the left and liabilities and equity on the right. Explanations of the terms used in the balance sheet follow the example.

EXHIBIT 2.1

SOUND AND LIGHT LTD
BALANCE SHEET AS AT 30 JUNE 2022

	\$000	\$000		\$000	\$000
Assets			Liabilities and equity		
Current assets			Current liabilities		
Cash	50		Accounts payable	73	
Accounts receivable	75		Wages payable	<u>30</u>	103
Inventory	<u>120</u>	245			
Noncurrent assets			Noncurrent liabilities		
Land	100		Loan		<u>87</u>
Equipment (net)*	<u>150</u>	250			190
			Total liabilities		
			Share capital	130	
			Retained profits	<u>175</u>	305
Total		<u>495</u>			<u>495</u>

*Equipment (net) = Cost – Accumulated depreciation = \$272 000 – \$122 000 = \$150 000

Let's review some features of this balance sheet:

- The title identifies the organisation (Sound and Light Ltd), the point in time at which it is drawn up (30 June 2022) and the currency in which amounts are measured (thousands of dollars).
- The balance sheet balances! As at 30 June 2022, total assets of \$495 000 are exactly equalled by the total sources of these assets (i.e. liabilities and shareholders' equity). It is a summary, so we cannot tell exactly which source produced which asset or assets; for example, the \$50 000 of cash came partly from bank borrowing and partly from other sources, such as past profits. (More about sources shortly.)
- Assets are usually separated into shorter-term ones (current assets) and longer-term ones (noncurrent assets). (More about these categories later.)
- Like assets, liabilities are usually separated into shorter-term ones (current liabilities) and longer-term ones (noncurrent liabilities).
- The balance sheet shows several individual accounts, telling us about the company's particular financial structure. For example, the company expects to receive \$75 000 from customers (accounts receivable) and owes \$73 000 to its suppliers (accounts payable). (These accounts are usually aggregates of many smaller accounts; for example, there is an account for each customer who owes money to Sound and Light.)
- The \$495 000 of assets have been financed by \$190 000 (\$103 000 + \$87 000) of liabilities and \$305 000 of shareholders' equity.
- Note: the accounting equation always balances:

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$



HOW'S YOUR UNDERSTANDING?

2A Which of the following items would be classified an asset in the balance sheet:

- Cash at bank
- Accounts receivable
- Accounts payable
- Buildings
- Retained profits?

2.2 Explanations of the three balance sheet categories: assets, liabilities and equity

LO1 Recall from the previous section that Assets = Liabilities plus Equity. More detailed explanations of each of these elements are discussed in the following text, based on the Conceptual Framework of Australian Accounting Standards Board (AASB).

Assets

Assets are a mixture of the resources that the company needs to do business – for instance, products to sell (inventory) and a building to operate from – and the resources that it has accumulated as a result of doing business, including amounts due from customers for past sales (accounts receivable). You can think of assets as economic resources that have probable future benefits that are controlled by the entity.

More formally, the Framework defines an asset as a present economic resource controlled by the entity as a result of past events. An economic resource is a right that has the potential to produce future economic benefits. Essential terms referred to in this definition are:

- *Potential to produce economic benefits*: rights have the potential to produce economic benefits because the assets are used with the objective of generating net cash flows (e.g. through the sale of the asset or the sale of the output produced through the use of the asset) or avoiding cash outflows. Consider the following examples of assets and how they provide future economic benefits. Assets such as accounts receivable are direct claims to cash inflows (receipt of payment from accounts receivable), prepayments (e.g. prepaid rent) provide rights to receive services in the future, inventories can be exchanged for cash, and equipment can provide goods or services for sale. Purchase of a licence avoids future cash outflows.
- *Control by the entity* of an economic resource relates to the present ability of the entity to direct use of an economic resource and obtain the economic benefits that may flow from it. It includes the capacity of an entity to benefit from the asset in pursuing its objectives and to deny or regulate the access of others. For example, if a company owns a truck, it can prevent others from using it. Some future economic benefits will not be controlled by an entity, because the entity cannot deny others access to the benefits of the asset; for example, a property developer who builds home units and is required by the local council to put in a public park as part of the project. If the park is open to the general public without charge, then the developer does not have control over the asset and the public park would not be included as an asset for the property developer.

Sound and Light's assets include cash, accounts receivable, inventory, land and equipment. Other 'assets' of Sound and Light might include happy employees and a safe working environment – yet these do not directly appear on its balance sheet. There is a distinction between the assets that accounting recognises and these other 'assets'. There are objective, standard measures for the economic control of the first group and for demonstrating the probability of future benefits that will eventuate for the first group, but not for the second group. For example, in the first group, an inventory of machine parts is owned by the organisation and has a dollar cost that can be easily verified. The benefit will come from future use or selling the inventory. In the second group, a happy employee is, in theory, more productive than an unhappy employee, but it is difficult to

measure reliably (with any consistency) how much more productive a very happy employee is compared with an employee who is only mildly happy.

Employees' services are received and immediately consumed. The right to obtain economic service exists momentarily until it consumes the good or service (the Framework 2019). Moreover, at least in our society, an organisation does not own its employees! Accounting generally records assets only where there is economic control. The expenditure for market research will not qualify as an asset because it is not possible, at the date of expenditure, to establish that it is probable that the future benefits will eventuate. This places limits on the scope of the financial statements.

In summary, an asset is only recognised in the balance sheet when (a) it is probable that future economic benefits will eventuate, and (b) the asset possesses a cost or other value that can be reliably measured. We will discuss these complications in more detail in Chapter 5.

Assets are usually separated into shorter-term ones (current assets) and longer-term ones (noncurrent assets). Current assets are those that are expected to be used, sold or collected within the next year. Noncurrent assets, therefore, are expected to have benefits for more than a year into the future. Sound and Light has \$245 000 in current assets and \$250 000 in noncurrent assets.



HOW'S YOUR UNDERSTANDING?

2B Which of the following would not be included as assets in the balance sheet: accounts receivable, equipment, share capital, inventory and employees?

Liabilities

A liability is a present obligation of an entity to transfer an economic resource as a result of past events. For a liability to exist, three criteria need to be met. These criteria are discussed in more detail in Chapter 14 but, in the following paragraphs, we provide an introduction.

First, the entity has an obligation, which is a duty or responsibility that the entity has no practical ability to avoid. Most obligations are legally enforceable; for example, they arise out of contractual arrangements, including money borrowed, amounts owing on assets purchased or for services provided, or obligations to provide services to parties who have paid in advance. Obligations can also be imposed on the entity, including damages awarded by courts, workers' compensation claims and income tax payable. Obligations can also arise from normal business practice, custom and a desire to maintain good business relations or act in an equitable manner. If, for example, an entity decides as a matter of policy to rectify faults in its products even when these become apparent after the warranty period has expired, the warranty amounts that are expected to be expended in respect of goods already sold are liabilities.

The second essential characteristic of a liability refers to adverse financial consequences for the entity, in that the entity has an obligation to transfer an economic resource to another party or parties (e.g. obligations to pay cash; obligations to deliver goods or services). Thus, the existence of a liability depends on the present obligation being such that the legal, social, political or economic consequences of failing to honour the obligation leave the entity little, if any, discretion to avoid the future sacrifice of economic benefits to another entity.

Liabilities include amounts owed to creditors, such as banks and suppliers, or amounts estimated to be due later, such as holiday and long service leave payments to employees, estimated future income taxes or interest owing on a bank loan. For example, if an electrician has done repair work on a company building, the electrician will be owed money (accounts payable). The electrician has done the work (past transaction) and the company has a present obligation to pay. Not all liabilities are expected to be paid in cash; some are 'paid' by providing goods or services. An example is a deposit received from a customer for goods to be shipped later. The organisation has the money (an asset) and records a corresponding liability for the deposit, but expects to give the customer the agreed-upon goods to discharge the liability. In the meantime, the customer has a claim on the organisation, expecting to get either the goods or the cash back if the goods

are not supplied. Sound and Light's liabilities (Exhibit 2.1) include amounts owing to suppliers (accounts payable) and amounts owing to employees for work done (wages payable) and a long-term loan.

Third, the obligation is a present obligation that exists as a result of past events. The requirement that the obligation has arisen from a past transaction means that a promise to pay is a liability if the organisation has already obtained the benefit or taken an action; for example, if it has received cash from the bank or goods from a supplier and as a consequence, the entity will or may have to transfer an economic resource (e.g. payment that it would not have otherwise have had to transfer (the Framework 2019).

An expectation to pay later is not a liability if the transaction bringing the benefit has not happened. For example, an agreement to borrow before the cash has been received is not a liability, nor is an order to purchase something before the goods have arrived. Because some of these expected or possible future events may result in future payments, even if they do not meet the definition of a liability and so do not appear in the balance sheet, they are sometimes described in the notes to the financial statements so that the users of the financial statement are aware of them.

Like assets, liabilities are usually separated into shorter-term ones (current liabilities) and longer-term ones (noncurrent liabilities). Current liabilities are those that are due (expected to be paid or otherwise discharged) within the next year. Noncurrent liabilities, therefore, are due more than a year into the future. Some liabilities, such as many house mortgages, extend for years into the future, but are partly paid each year, so the balance sheet would show both a current and a noncurrent portion for them. Sound and Light has \$103 000 in current liabilities and \$87 000 in noncurrent liabilities.



HOW'S YOUR UNDERSTANDING?

2C Consider the following questions:

- (i) Which of the following are liabilities: accounts receivable, inventory, accounts payable, wages payable and taxes payable?
- (ii) Would an agreement to borrow money from the bank in three months' time appear in the balance sheet?
- (iii) A company places an order to buy 10 TVs at \$600 each on 1 April and receives them on 1 May. When would the liability of \$6000 be recorded?

Equity

Equity is the residual interest in the assets of the entity after deducting its liabilities.

- Equity can be derived from direct contributions the owners have made, or from the accumulation of profits that the owners have chosen not to withdraw. For a company, this would mean profits that have not been distributed as dividends.
- The details of the owners' equity section of the balance sheet depend on the legal structure of the organisation and its ownership arrangements (examined later in this chapter).
- The balance sheet does not distinguish between assets whose sources are liabilities and assets provided by owners. Complex financial events make this impractical, so the assets represent a pool of resources provided by all sources (i.e. both liabilities and equity).
- The owners' interest can also be considered as a 'residual' of the sum of the assets minus the obligations the organisation has taken on. (If $A = L + E$, the equation can also be written $A - L = E$.)

Because the balance of the shareholders' equity figure equals assets minus liabilities, this residual or net concept of equity is often referred to as the book value of the whole organisation. Book value is an arithmetically valid idea, as the previous equation shows. But it may not tell us very much. For example, if Sound and Light suddenly went out of business, the owners would be unlikely to receive exactly the equity of \$305 000 (Exhibit 2.1), because nobody knows what the assets would fetch if they had to be sold off all at once, and the liabilities perhaps would be settled for something other than the expected future payments used to record them.

Similarly, if the owners decided to sell the business, the price they would get would depend on their and the buyers' views as to the future success of the business, not just on the accumulated assets and liabilities recorded in the balance sheet. Thus, the amount would be very unlikely to equal the balance sheet equity figure.

Shareholders' equity is generally based on historical transactions, and does not, except by coincidence, equal the current market value of the whole business. Many high-technology and internet companies at the start of this century had small equity amounts in their balance sheets but huge stock market values (market capitalisation, or the share price times the number of shares outstanding). The stock market may have been considering all sorts of 'assets' not included by accounting, such as competitive strength or smart employees, and/or expecting good future performance. Many of these share prices have subsequently dropped, but there often are differences between the dollar values in the shareholders' equity section of the balance sheet and the current market price of the company.

Contributions from owners can come in many forms, including the issue of share capital and the obtaining of past profits (discussed later). For a corporation like Sound and Light, the most usual is share capital: people give the corporation money in exchange for shares, which are portions of ownership interest. Sound and Light owners (shareholders) have contributed \$130 000 to the corporation (Exhibit 2.1). For example, some owners probably contributed cash to get Sound and Light started, so they would be among the sources of the cash asset. Many corporations' shares, also called stocks in some countries (such as the United States), are traded on sharemarkets (e.g. the Australian Securities Exchange). In such markets, shares are traded between owners; the corporations issuing the shares receive money only when the shares are issued by them to the first owners. Therefore, trades subsequent to the initial share issue are not reflected in the corporation's share capital; these trades are transactions for the owners, not for the corporation.

Past profit retained, usually called retained profits (or retained earnings), represents past accrual profit not yet given to owners. (The terms 'earnings' and 'profit' are used pretty much interchangeably, but they all refer to accrual profit, as described in Chapter 1.) Sound and Light has \$175 000 in retained profits (Exhibit 2.1), which means it has \$175 000 more in assets than it would have had if those profits had all been paid out. The owners could have withdrawn cash or other assets from the company (for instance, by declaring themselves a dividend, which is a payment of some of the retained profits to the owners), but they have chosen instead to leave the assets in the corporation. Thus, those assets are resources of the corporation and retained profits are their source. The corporation can use the assets to earn more profit in the future.

Since $E = A - L$, it is arithmetically possible for equity to be negative. If the assets are less than the liabilities, which would indicate an organisation has more obligations than resources (not a good position to be in!), the equity, and therefore the organisation's book value, will be negative. Such a situation is a sign of serious financial problems and is likely to be followed by insolvency.



HOW'S YOUR UNDERSTANDING?

2D If assets are resources, what are the possible sources for these assets?

2.3 Some preliminary analysis of the Sound and Light balance sheet

From the Sound and Light balance sheet (Exhibit 2.1), we can answer some questions about the corporation's financial condition:

- 1 Is the organisation soundly financed? Sound and Light has financed its \$495 000 in assets by borrowing \$103 000 short-term and \$87 000 long-term, and by getting \$130 000 in contributions from owners and not paying past earnings of \$175 000 out to owners. Its \$495 000 in assets are therefore financed by \$190 000 (38.4 per cent) from creditors and \$305 000 (61.6 per cent) from the owners. Its debt-to-equity ratio is $\$190 / \$305 = 62.3$ per cent (often written 0.62:1). So, Sound and Light is not much in debt, proportionately. What

would you think if the creditors were owed \$450 000 and the shareholders' equity was only \$45 000? This would be a debt-to-equity ratio of $\$450/\$45 = 1000$ per cent (10:1), much more risky for the creditors because a lot more of their money than the owners' money would be at risk if the company ran into trouble.

Debt to equity ratio = Total liabilities ÷ Total shareholders' equity

- 2 Can the organisation pay its bills on time? Sound and Light owes \$103 000 in the short term and has only \$50 000 in cash. Therefore, to pay its bills it will have to collect cash from its customers, either by getting them to pay what they already owe or by selling them some inventory for cash. There is likely no problem here: collections and sales, and payments to creditors, are probably going on continuously. The company has \$245 000 of current assets that it should be able to turn into cash to pay the \$103 000 of current liabilities. It is said to have $\$245\ 000 - \$103\ 000 = \$142\ 000$ in working capital and a current ratio of $\$245/\103 , or 2.38. The working capital is positive, and the ratio indicates there is more than twice as much current assets as current liabilities, so Sound and Light appears to be fine.

Current ratio = Current assets ÷ Current liabilities

- 3 You can see that if the company had a slow period of sales or collections, it could have difficulty paying its bills. But if you were concerned about the company's ability to sell inventory to pay its bills, you could calculate the quick ratio (also called the acid test ratio). It is like the working capital ratio, but has only cash, very short-term investments that could be sold, and accounts receivable in its numerator. For Sound and Light, the quick ratio would be $(\$50\ 000 + \$75\ 000)/\$103\ 000 = 1.21$. The company could pay its current liabilities without having to sell inventory. What would you think if the company had only \$10 000 in cash and \$160 000 in inventory instead of cash of \$50 000 and inventory of \$120 000? In that case, though its working capital and working capital ratio would be the same, it would likely be overstocked (i.e. too much inventory) and short of cash, and might have trouble paying bills. Now the quick ratio would be $(\$10\ 000 + \$75\ 000)/\$103\ 000 = 0.83$. The company would have to sell some inventory to meet its current liabilities. All ratios are only indicators. They require interpretation of the specific circumstances of each organisation, so we don't know from our calculations if the company is in trouble, but a low quick ratio would give a signal to look further into the situation.

Quick ratio = (Current assets – Inventory) ÷ Current liabilities

- 4 Should the owners declare themselves a dividend? If so, how large should it be? Legally, the board of directors (who manage the company on behalf of the shareholders) are able to declare a dividend to shareholders of \$175 000, the full amount of the retained earnings. But there is not nearly enough cash for that. Those past earnings have been reinvested in inventory, land, equipment and so on, and are therefore not sitting around in cash waiting to be paid to owners. This is true of nearly all companies: they invest past earnings in operating assets, so do not have a lot of cash on hand. Probably a dividend of more than about \$25 000, only one-seventh of the retained earnings, would cause Sound and Light some cash strain. What would you think if the company had no land or equipment but \$300 000 in cash instead? It would appear to be cash-rich in that case, and should either invest the cash productively or pay a dividend to the owners so they can do what they like with the money.
- 5 Equipment (net) of \$150 000 is represented by the cost of the equipment \$272 000 less accumulated depreciation of \$122 000. In calculating its profit, Sound and Light has deducted depreciation on its equipment as an expense each year. The profit that is in the retained profits part of the equity is, therefore, smaller than it would have been without this deduction. The accumulated amount of that expense, built up over the years, is deducted from the assets in the balance sheet to show how much of the economic value of the assets is estimated to have been used up so far. Accumulated depreciation is therefore a 'negative asset' used to reduce the amounts of other assets. In this case, the equipment cost \$272 000, against which depreciation of \$122 000 has accumulated, so the 'net' book value of

the equipment is the remainder: \$150 000. (It is normal for the balance sheet to report only the net amount and give cost and accumulated depreciation amounts in the notes.) Comparing the cost and the accumulated depreciation tells us something about the age of the equipment. The \$122 000 accumulated depreciation is less than half the equipment's cost, so the company estimates that less than half the economic value of the equipment has been used. What would you think if the accumulated depreciation were \$250 000? The equipment would be nearing the end of its estimated life.

Common presentation styles for balance sheets

So you see that the balance sheet provides interesting information if you know how to read it. Your skill in reading it will grow as you work with it. There are different styles of presentation for the balance sheet; all show the same information, but they are arranged differently. Exhibit 2.1 showed you the side-by-side format for Sound and Light Ltd. In Exhibit 2.2, the vertical format is shown, which has become far more common. It shows assets less liabilities equals shareholders' equity. Note that assets less liabilities is also known as net assets.

EXHIBIT 2.2

SOUND AND LIGHT LTD

BALANCE SHEET AS AT 30 JUNE 2022

	\$000
Current assets	
Cash	50
Accounts receivable	75
Inventory	<u>120</u>
Total current assets	<u>245</u>
Noncurrent assets	
Land	100
Equipment (net)	<u>150</u>
Total noncurrent assets	<u>250</u>
Total assets	<u>495</u>
Current liabilities	
Accounts payable	73
Short-term loan	<u>30</u>
Total current liabilities	<u>103</u>
Noncurrent liabilities	
Loan	87
Total noncurrent liabilities	<u>87</u>
Total liabilities	<u>190</u>
Net assets	<u>305</u>
Shareholders' equity	
Share capital	130
Retained profits	<u>175</u>
Total equity	<u>305</u>

2.4 A closer look at the balance sheet

LO8 To gain further insights into the content of a balance sheet, we will examine the content of Chez Ltd's balance sheet, shown in Exhibit 2.3.

EXHIBIT 2.3		
CHEZ LTD		
BALANCE SHEET AS AT 31 MAY		
	2022 \$'000	2021 \$'000
Current assets		
Cash and cash equivalents	8 952	6 336
Investments	18 516	5 179
Accounts receivable	26 396	18 069
Inventory	22 831	20 427
Prepayments	3 586	2 015
Total current assets	<u>80 281</u>	<u>52 026</u>
Noncurrent assets		
Land	23 205	23 205
Buildings (net)	26 282	25 911
Equipment (net)	39 984	40 770
Intangibles (net)	2 398	3 586
Total noncurrent assets	<u>91 869</u>	<u>93 472</u>
Total assets	<u>172 150</u>	<u>145 498</u>
Current liabilities		
Accounts payable	7 984	6 443
Accrued expenses	5 740	3 491
Income taxes payable	3 248	2 756
Provision for employee entitlements	10 823	4 481
Total current liabilities	<u>27 795</u>	<u>17 171</u>
Noncurrent liabilities		
Long-term loans	23 856	21 805
Provision for employee entitlements	14 006	13 647
Total noncurrent liabilities	<u>37 862</u>	<u>35 452</u>
Total liabilities	<u>65 657</u>	<u>52 623</u>
Net assets	<u>106 493</u>	<u>92 875</u>
Shareholders' equity		
Share capital	23 961	23 961
Retained profits	82 532	68 914
Total shareholders' equity	<u>106 493</u>	<u>92 875</u>

- It is comparative: it contains figures both for the most recent year and for the preceding year to help the users recognise changes. It is standard practice for the more recent figures to be to the left, closer to the words describing those figures.

- For clarity, the figures are shown in thousands of dollars (and for bigger companies it will be 'millions of dollars'), not exact amounts to the cent.
- References are normally made to various notes. It is not possible to explain every important item on the face of the balance sheet, so extensive explanatory notes are referred to and appended to most balance sheets. Chez's notes are not provided here because they raise issues we have not yet covered. Remember to look for notes when you are using financial statements.
- The company has many different kinds of asset, liability and equity accounts. They are not necessarily easy to classify into the categories you saw in the Sound and Light Ltd example. You probably won't understand all the accounts and how the company has categorised them; that understanding will develop as you work through the book.
- The balance date is 31 May, not 30 June. The end of the taxation year, 30 June, is the most popular accounting year-end (financial year-end), but many companies choose other dates, particularly subsidiaries of US companies, among whom 31 December is popular.

Some explanation of the detailed content of balance sheets will be helpful now, before some examples of preparing balance sheets are given.

Some of Chez's assets were described in Chapter 1: cash, accounts receivable and inventory. Property, plant and equipment is split into land, buildings, equipment and furniture. Many Australian companies show property, plant and equipment as one item on the face of the balance sheet (e.g. property, plant and equipment net = \$100 000), with the split-up in one of the notes to the accounts (e.g. property, plant and equipment – accumulated depreciation: \$400 000 – \$300 000 = \$100 000).

Note that land is not depreciated, but buildings, equipment, and furniture are shown net, meaning that accumulated depreciation has been deducted. The exact amount of the accumulated depreciation deducted will be shown in the notes. For example, if equipment cost \$1 million and had an expected life of five years, the amount of depreciation each year would be \$200 000. After three years, accumulated depreciation would be \$600 000 (\$200 000 + \$200 000 + \$200 000).

Chez Ltd also has some other assets that were not introduced in Chapter 1, including investments, prepayments, property, plant and equipment (net), and intangibles.

- Investments are short-term; that is, included under current assets – and could be shares in other companies (such as the Commonwealth Bank or Woolworths), which Chez intends to convert to cash within a year.
- Prepayments (or prepaid expenses) are amounts that have been paid in advance but for which the benefits have not yet been received. For example, if we pay a 12-month insurance premium on 1 April 2021, at 31 May 2021 we will have a prepayment equal to 10/12ths of the amount paid at year end. Prepayments are assets because they represent future economic benefits.
- The property, plant and equipment (PPE) will be recorded at cost net of accumulated depreciation. Each year depreciation expense is calculated and the sum of these depreciation expenses is called accumulated depreciation. Depreciation expense and accumulated depreciation are discussed in more detail in Chapter 13. When you see the word 'net' after PPE it means accumulated depreciation has been deducted from cost.
- Intangible assets are noncurrent assets that have no physical substance, such as copyrights, patents, trademarks, brand names and goodwill. They are discussed in Chapter 13.

Chez Ltd includes many liabilities that have not yet been discussed. Accounts payable and long-term loans were described in Chapter 1. Two others are accrued expenses and provision for employee entitlements.

- Accrued expenses relate to expenses that have been incurred during the year but not yet paid. Consider two examples. Assume Chez Ltd pays salaries and wages every two weeks for work done in the previous two weeks. If the last pay day was 19 May, the company would owe employees salaries and wages from

20 May to 31 May. This is called accrued wages or wages payable. Another example of accrued expenses could be the amount owing to the electricity company. If it bills you quarterly and the last bill was for the period ending 30 April, you would owe the company for one month's electricity at the end of the accounting period. This would also form part of accrued expenses. Income taxes payable is the amount payable to the tax office in the next year.

- Provision for employee entitlements relates to long service leave, holiday pay and some superannuation. It is an estimate, based on years of employee service, of the amounts owing to employees that will have to be paid in future periods. The provision for employee entitlements has both current and noncurrent proportions, depending on when the amounts are likely to be paid.

Note that for accounts payable the company will have received an invoice showing the amount owing. Accruals need to be estimated but often this can be done reasonably accurately. However, when the estimation process is more difficult, the term 'provisions' is common.



HOW'S YOUR UNDERSTANDING?

2E Given the following information for Northern Ltd:

- share capital \$1000
 - accounts receivable \$1100
 - accounts payable \$2100
 - inventory \$1700
 - retained profits \$2200
 - cash \$500
 - equipment \$2000
- (i) Calculate the totals for current assets, noncurrent assets, total assets, current liabilities, noncurrent liabilities and shareholders' equity.
- (ii) Comment on the company's financial position at that point in time.

Where do the figures come from?

A full understanding of what assets and liabilities are and how to measure them will take time and many examples. One thing you may be wondering about is where the figures used to measure these things come from. This is a deep and controversial question indeed. Only a superficial answer can be given now, but after a few more chapters you will have a deeper understanding of it.

Accounting is generally a historical measurement system: it records what has happened, not what will happen or would have happened if conditions had been different. Therefore, asset and liability values are derived from the past. Assets are generally valued at *what they cost when they were acquired*, and liabilities are generally valued at *what was promised when the obligation arose*. In most countries, assets and liabilities are not valued at the current prices they might fetch if sold right now. This is something that confuses many users: looking at a balance sheet, for example, a user might think that assets such as land and buildings are shown at what those assets would be worth right now if they were sold. They are, instead, generally valued at *what they cost when they were acquired*.

The differences in these values can be large. For example, a company may have bought land in Sydney 20 years ago for \$300 000. The land may now be worth many millions of dollars. But the balance sheet normally will show the land asset at a figure of \$300 000, its original cost. This is because the only thing that has happened is that the land was acquired 20 years ago, and the cost incurred then can be verified. Nothing further has happened: the land has not been sold, so its current value is hypothetical and difficult to verify. However, in Australia certain assets can be revalued in the balance sheet to current market prices. They are shown at either independent valuation or directors' valuation. This important valuation issue is discussed in

more detail in Chapter 13. Also, around the world there is a trend towards valuing many assets, including investments, at their 'fair values' rather than historical cost. This will be discussed in Chapter 13.

The balance sheets of most Australian companies actually show a little less detail than our Chez Ltd example. For example, under liabilities it is quite normal to have a heading 'payables', which includes accounts payable and accrued expenses. The split-up of these amounts is then given in the notes to the accounts. Also as noted earlier, Land, Buildings and Equipment are likely to be included under one heading 'Property, Plant and Equipment'.



HOW'S YOUR UNDERSTANDING?

- 2F** Account balances for Mike's Tyre Repair (company) are: long-term loan, \$250; accounts receivable, \$640; inventory of supplies, \$210; equipment cost, \$890; accumulated depreciation on equipment, \$470; accounts payable, \$360; share capital, \$660. Calculate total assets, total liabilities and shareholders' equity.

2.5 Maintaining the accounting equation

In sections 2.1 and 2.2 the accounting equation was introduced:

LO4

LO5

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

An understanding of this equation is fundamental to your understanding of the balance sheet and the whole accounting recording process. Financial accounting is said to use the double-entry system, whereby the accounting equation is always kept in balance. If an asset goes up, a liability or equity must go up too (or another asset must go down). If a liability goes up, an asset must go up too, or an equity or another liability must go down. Here are some examples, using the balance sheet descriptions in the Sound and Light example in section 2.1 and the equation $A_1 = L_1 + E_1$ to represent the balance sheet before the events:

- cash of \$100 obtained from an owner for shares: 'cash' asset up, 'share capital issued' equity up, so $A_1 + \$100 = L_1 + E_1 + \100
- \$120 collected from a customer: 'cash' asset up, 'accounts receivable' asset down, so $A_1 + \$100 + \$120 - \$120 = L_1 + E_1 + \100
- goods for sale costing \$130 received from a supplier: 'inventory' asset up, 'accounts payable' liability up, so $A_1 + \$100 + \$120 - \$120 + \$130 = L_1 + \$130 + E_1 + \100 .

After these three events, the new balance sheet is \$230 higher on both sides and so still in balance:

$$A_1 + \$230(\text{net}) = L_1 + \$130 + E_1 + \$100$$

The key point is that the equation will always be in balance. The equation would balance before recording these transactions and will balance after the transactions have been recorded.

We cover transaction analysis in more detail in Chapter 3, including expanding the equation to incorporate revenue and expenses. So at this point we will just consider transactions that only have an impact on the balance sheet.

Assume that, at 30 June 2022, FGH Ltd had cash of \$200 000 and share capital of \$200 000. Note that the accounting equation balances at this point. In fact, the equation will balance after we record every transaction. Consider the impact of each of the following transactions:

- The company receives \$400 000 from the issue of shares (200 000 shares at \$2 each). This transaction increases an asset (cash at bank) and increases shareholders' equity account (share capital).
- The company purchases new equipment for \$500 000, paying cash to the supplier. This transaction increases one asset (equipment) and decreases another asset (cash).

- 3 The company borrows \$200 000 from the bank. This transaction increases an asset (cash at bank) and increases a liability (loan).
- 4 The company purchases inventory on credit for \$150 000. This transaction increases a liability (accounts payable) and increases an asset (inventory).
- 5 The company pays \$50 000 to accounts payable. This transaction decreases an asset (cash) and a liability (accounts payable).

Each of the transactions is recorded in Exhibit 2.4 and the new balance sheet at 31 July 2022 appears in Exhibit 2.5.

EXHIBIT 2.4

FGH LTD

ACCOUNTING EQUATION

	Cash	Assets Inventory	Equipment	=	Liabilities + Shareholders' equity		
					Accounts payable	Long-term loan	Share capital
Bal.	+200 000						+200 000
1	+400 000						+400 000
2	-500 000		+500 000				
3	+200 000						+200 000
4		+150 000			+150 000		
5	-50 000				-50 000		
	<u>+250 000</u>	<u>+150 000</u>	<u>+500 000</u>	=	<u>+100 000</u>	<u>+200 000</u>	<u>+600 000</u>
			900 000		900 000		

EXHIBIT 2.5

FGH LTD

BALANCE SHEET AS AT 31 JULY 2022

\$		\$
Assets		Liabilities
Current assets		Current liabilities
Cash	250 000	Accounts payable
Inventory	<u>150 000</u>	
	<u>400 000</u>	Noncurrent liabilities
		Long-term loans
Noncurrent assets		<u>200 000</u>
Equipment at cost	500 000	Total liabilities
		<u>300 000</u>
		Shareholders' equity
		Share capital
		600 000
		Retained profits
		<u>0</u>
		Total shareholders' equity
		<u>600 000</u>
Total assets	<u>900 000</u>	Total liabilities and shareholders' equity
		<u>900 000</u>



HOW'S YOUR UNDERSTANDING?

- 2G** (i) What is the effect of each of the following transactions on total assets?
- (a) Purchased equipment for \$200 000 cash.
 - (b) Purchased inventory for \$30 000 on credit.
 - (c) Received a loan of \$50 000 from the bank.
 - (d) Received \$20 000 from accounts receivable.
 - (e) Issued additional shares of \$300 000.
- (ii) Which of these transactions increase total liabilities?

2.6 Managers and the balance sheet

Why do managers care about their companies' balance sheets? The basic reason is that many outsiders do, including owners, creditors, tax authorities and unions. Read any issue of a business newspaper or magazine and you will see frequent references to the importance of the balance sheet and levels of debt. For example:

LO10

Rob Ltd was an attractive prospect because it had a strong balance sheet.

The balance sheet shows a weak financial structure. Management must solve this problem before risk-shy investors can be expected to take an interest in the company.

The balance sheet shows the large cash reserves, so one can only guess that management is looking to buy another company.

X Ltd's debt-to-equity ratio is high for the industry.

The underlying strength of PB's balance sheet is hard to ignore.

W Ltd has grown because it has a very conservative balance sheet that provides opportunities.

The balance sheet reports what the organisation's position (assets, liabilities and shareholders' equity) is at a point in time (the financial year-end or any other date on which the balance sheet is prepared). It shows the assets (resources) that management has chosen to acquire for the organisation, and how management has decided to finance those assets. Therefore, it provides a useful picture of the state of the company and is used by many outsiders to evaluate the quality of management's decisions on obtaining, deploying and financing assets. For better or worse, it is the summary of all the information recognised by accounting and is, to many people, the basic score card of management's stewardship of the company.

The balance sheet does not directly state how management has performed in using assets to earn profit. Such information is contained in the income statement, but all of it correlates with the basic double-entry information contained in the balance sheet. Good profit performance, for example, is reflected in increased assets and shareholders' equity (retained profits). The strengths and weaknesses of the balance sheet, which will be explored throughout this book, are therefore fundamentally important to managers, who are responsible for managing companies' assets and liabilities.

Managers' own salaries, promotions, careers and reputations depend on other people's decisions (such as investors' decisions to buy and sell shares) which, in turn, rest to some extent on balance sheet information.

2.7 The income statement

A business exists over a period of time. If the owners and managers are successful, it may prosper for a long time. Suppose a measure of the company's financial performance is desired for comparison with other companies, for assessing income tax, for help in deciding how much to sell the company for, or for many other reasons we will come to. How could such performance be measured?

LO6**LO7**

We might measure the company's financial performance by closing it down, selling off all its assets, paying off all its liabilities and discovering how much is left for the owners. Good performance would be

indicated if the money left for the owners plus the amounts they withdrew over the years were greater than the amount they put in when they founded the company, perhaps adjusted for inflation over that time and for the owners' costs in raising the money they put in.

But killing the business to measure how well it has been doing is a little drastic! Waiting until it dies of natural causes hardly seems any better: many companies have outlasted generations of owners and managers. It would be more useful to measure performance over selected shorter periods of time: annually, every three months (quarterly) or on a monthly basis. People could then make their decisions about investing in the company or selling their shares, and hiring managers or firing them, when they wanted to do so.

This is where the income statement becomes useful. This statement uses accrual accounting to measure financial performance over a period of time, usually a year, six months, three months or one month, indicating the net profit for the period, calculated as revenues minus expenses.

Net profit for the period = Revenues – Expenses for the period



FOR YOUR INTEREST

Both in Australia and internationally the label for the statement that provides the profit figure has changed often over recent decades; examples include profit and loss statement, statement of financial performance and income statement. You should be aware of these name changes as some companies may retain the older names for internal documents because of managers' familiarity with them. For example, the use of the term 'profit and loss statement' is still common in many companies.

Revenues and expenses

Recall that in section 1.5 the concepts of revenues and expenses were introduced. As part of the conceptual framework of accounting, official pronouncements developed definitions of revenues and expenses. They were developed to be applicable to a range of measurement models and to include some transactions unique to the public sector. Consequently, the definitions are complex, especially for students early on in an accounting course. As a result, we will defer discussion of these definitions until Chapter 15. Following are some fundamental definitions that cover most revenues and expenses.

REVENUES

Revenues are described here as increases in the company's wealth arising from the provision of services or the sale of goods to customers. Wealth increases because customers:

- pay cash for goods or services
- promise to pay cash (such promises are called 'accounts receivable' for goods and services)
- (more rarely) pay with other forms of wealth, such as by providing other assets to the company or forgiving debts owed by the company for goods and services.

Interest earned is also an example of revenue because it increases wealth as a result of providing a service (lending money in another organisation).

The key test for revenue recognition is whether the goods or services have been rendered (e.g. delivery to customers or the provision of a service). Revenue recognition can become quite complicated for some companies. For example, if a company received a contract to build a new highway from Brisbane to Melbourne, when would revenue be recognised? This and other more complicated questions concerning revenue recognition will be addressed in Chapter 15.

EXPENSES

Expenses are the opposite of revenues. They are decreases in the company's wealth that are incurred in order to earn revenue. Wealth decreases because operating costs have to be paid; customers have to be given the

goods they have paid for; long-term assets wear out as they are used to earn revenue; and liabilities may be incurred as part of the process.

If, as part of its attempt to earn revenues, the company paid \$600 in rent, or the goods bought by a customer cost the company \$800 to provide, the equipment depreciated by \$400, or the company promised to pay an employee \$500 in wages later on for work already completed, each of these would be called an expense (rent expense \$600, cost of goods sold \$800, depreciation \$400, wages expense \$500).

A major expense category that sometimes causes confusion is the cost of goods sold (COGS) expense. In the examples provided, if the goods bought by the customer cost the company \$800 to provide, \$800 is the cost of the goods sold that earned revenue of \$1000. The revenue is what the customer agrees to pay; the cost of goods sold is what it costs the company to provide those goods. Therefore, a transaction with a customer who is buying goods has two aspects:

- the company is better off because of the revenue gained
- the company is worse off because of the cost of the goods that the customer takes away.

When the company buys the goods for sale, they begin on the balance sheet in the asset account 'inventory of unsold goods'. When they are sold, their cost is transferred from the asset account to the expense account 'cost of goods sold'. This is done as a separate accounting activity from recording the revenue, because it is a separate economic event.



HOW'S YOUR UNDERSTANDING?

2H During the year a retailer buys 800 televisions at \$400 each and sells 600 of them for \$1000 each. Calculate the following:

- (i) Sales revenue for the year
- (ii) Cost of goods sold for the year
- (iii) The closing balance of inventory in the balance sheet related to the televisions.

PROFIT

Both revenues and expenses are measured by following the concepts of accrual accounting; therefore, they represent increases or decreases in wealth, whether or not cash receipts or payments occur at the same time. As net profit is the difference between revenues and expenses, it represents the *net inflow of wealth* to the company during the period. If net profit is negative – that is, if revenues are less than expenses – it is instead called net loss.

Expenses include all the costs of earning the revenues, including taxes, but they do not include payment of returns to owners (withdrawals by sole traders or partners, or dividends to shareholders of companies). Payments of returns to owners (such as when a company's board of directors declares a dividend) are considered to be *distributions* of net profit to owners. The undistributed remainder of profit not distributed as dividends is kept in the company as retained profits.



HOW'S YOUR UNDERSTANDING?

2I Calculate the total revenue and expenses for the month of June 2022, given the following:

- (i) Credit sales of \$200 000 made in June; 50 per cent to be collected in June.
- (ii) Cash sales of \$300 000.
- (iii) Received \$20 000 as a deposit from a customer in June for a job to be carried out in July.
- (iv) Paid salaries of \$40 000; \$10 000 related to work carried out in May and \$30 000 related to June work.
- (v) Paid rent for the month of June of \$6000 on 7 June.
- (vi) Received a bill for \$1500 from an electrician for work done on 20 June. This will be paid next month.
- (vii) Paid \$10 000 in dividends to shareholders.

The relationship of profit for the period to retained profits

Retained profits is the sum of past net profits, measured since the company began, minus dividends declared (even if not yet paid) to owners since the beginning. Retained profits from the end of the preceding period (year, quarter, month or whatever) are therefore increased by profits for the period and reduced by any dividends.

Retained profits at end of period	= Retained profits at beginning of period
	+ Net profit (or – Net loss) for the period
	– Dividends declared during the period

An alternative format to show the change in retained profits is:

Start with retained profits, beginning of period (end of previous period)	XXXX
Add net profit for the period	XXXX
Deduct dividends declared during the period	(XXXX)
Equals retained profits, end of period	XXXX

In the example shown, the company earned a profit. If the company performed badly, the profit could be negative (expenses greater than revenues, producing a net loss instead), and in that case, the net loss is deducted from the beginning retained profits. If things get really bad, retained profits can also be negative.

You might be interested to know that you can, *if you have the past records*, go back year by year, figuring out how much profit was added to retained profits each year and how much in dividends was deducted. You could go all the way back to the first day of the company, when there had not yet been any profit and, therefore, not yet any retained profits. The balance sheet can be said to reflect everything that has ever been recorded in the accounts: it is the accumulation of everything that has happened from when the company began until now.

In a company, the board of directors is the senior level of authority, which looks after the company on behalf of the owners. When the board declares a dividend, the amount is deducted from retained profits at that time. At that point, the company has a liability to the owners, which it pays off later by sending the owners the promised cash. This involves two principles of financial accounting:

- 1 Transactions with owners, of which the main example is dividends, are taken out of retained profits. They are not an expense, and therefore are not deducted in calculating profit for the period.
- 2 Owners can be creditors too, if they are owed dividends or have lent the company money in addition to the shares they bought.



HOW'S YOUR UNDERSTANDING?

- 2J The following transactions occurred during 2022:
- (a) Issued shares to investors for \$100 000 cash
 - (b) Borrowed \$61 000 from the bank
 - (c) Purchased equipment for \$17 000 cash
 - (d) Purchased \$723 000 of additional inventory on credit
 - (e) Sold \$1 141 900 of products to customers on credit; cost of the goods was \$700 000
 - (f) Incurred \$218 200 in selling expenses, paying 80 per cent in cash and owing the rest
 - (g) Paid cash dividends of \$16 000
 - (h) Earned \$4000 interest on investments, receiving 75 per cent in cash
 - (i) Incurred \$2900 in interest expense to be paid at the beginning of next year
 - (i) What was revenue for the year?
 - (ii) What are expenses for the year?
 - (iii) What is the net profit?
 - (iv) If the opening balance of retained profits was \$1 million, what is the closing balance?

2.8 Connecting balance sheets and income statements

The balance sheet shows all assets, liabilities and shareholders' equity accounts at a point in time. Usually the balance sheet is comparative, showing the accounts at both the beginning of the income statement's period (i.e. the end of the previous period) and at the end of the income statement's period, and therefore showing both the beginning retained profits and the ending retained profits.

LO9

Assets at beginning	=	Liabilities + equity (including retained profits) at beginning
Assets at end	=	Liabilities + equity (including retained profits) at end
Change in assets	=	Change in liabilities + change in equity (including retained profits)

Suppose a corporation had assets of \$1200 at the beginning of a year and \$1450 at the end, and liabilities of \$750 at the beginning and \$900 at the end. We can deduce that its equity was \$450 at the beginning and \$550 at the end (i.e. Assets – Liabilities = Equity). These data produce the following calculation of the changes in the balance sheet categories:

	Assets	Liabilities	Equity
Beginning:	\$1200	=	\$750 + \$450
Ending:	<u>\$1450</u>	=	<u>\$900</u> + <u>\$550</u>
Changes:	<u>\$ 250</u>	=	<u>\$150</u> + <u>\$100</u>

Where did the change in equity come from? Upon investigation, we find out that the company issued more share capital of \$40, earned profit of \$185 and declared a dividend of \$125. Thus:

	\$	\$
Share capital change:		
Equity increase due to issued share capital	40	
Retained profits change:		
Equity increase due to profit	185	
Equity decrease due to declaration of dividend	<u>(125)</u>	60
Change in equity between the two balance sheets		100

We know what the profit was, but not what the company did to earn it. This is what the profit and loss component of the income statement is for: describing the revenues and expenses that produced the \$185 profit. But once we have that, it is useful to know how that factors in to the balance sheet. The net profit is part of the change in retained profits, which in turn is part of the change in the balance sheet over that period. The statement (or note) showing changes in retained profits therefore 'knits' the balance sheet and the income statement together by showing that the net profit is part of the change in the balance sheet over the period. (Accountants refer to this knitting together as the articulation of the two statements.) Profit is part of the change in retained profits for the period, therefore:

Profit is part of the equity component of the accounting equation

Make sure you understand how this works:

- A revenue increases wealth, so it either increases assets or decreases liabilities, and therefore increases equity.
- An expense decreases wealth, so it either decreases assets or increases liabilities, and therefore decreases equity.
- Positive *net profit* has the overall effect of increasing assets and/or decreasing liabilities, and therefore increases equity (increases due to revenues exceed decreases due to expenses).
- A *net loss*, which is negative net profit, does the opposite, decreasing equity (decreases due to expenses exceed increases due to revenues).

At this stage make sure you grasp the idea that profit is part of equity through retained profits. Note that in Chapter 15 you will see that the full income statement includes other equity changes that articulate through to the balance sheet.

An example of articulation between the balance sheet and the income statement

Bratwurst Ltd had the following balance sheet at the end of 2021 (beginning of 2022): assets \$5000, liabilities \$3000 and equity \$2000.

- The beginning equity figure was made up of the shareholders' invested share capital of \$500 plus retained profit accumulated to the end of 2021 of \$1500. (That \$1500 was therefore the sum of all the net profits the company had ever had up to the end of 2021 minus all the dividends ever declared to owners up to that point.)
- During 2022, the company had revenues of \$11 000 and expenses of \$10 000, and declared dividends to owners of \$300.
- At the end of 2022, the company had assets of \$5900, liabilities of \$3200 and equity of \$2700, made up of the shareholders' invested share capital of \$500 plus retained profits of \$2200.

Exhibit 2.6 shows the relationship.

EXHIBIT 2.6		BRATWURST LTD INCOME STATEMENT FOR 2022			
					\$
Revenues					11 000
Expenses (including income tax)					<u>10 000</u>
Net profit for 2022					<u>1 000</u>
NOTE SHOWING CHANGE IN RETAINED PROFITS FOR 2022					
Retained profits beginning of 2022 (end of 2021)					1 500
Add net profit for 2022 (from income statement)					<u>1 000</u>
					2 500
Deduct dividends declared during 2022					<u>300</u>
Retained profits end of 2022					<u>2 200</u>
BALANCE SHEET AT THE BEGINNING AND END OF 2022					
Assets			Liabilities and equity		
	End \$	Begin \$		End \$	Begin \$
Assets	5 900	5 000	Liabilities	3 200	3 000
			Shareholders' equity		
			Share capital	500	500
			Retained profits	<u>2 200</u>	<u>1 500</u>
Total	<u>5 900</u>	<u>5 000</u>	Total	<u>5 900</u>	<u>5 000</u>

You can see several things from this example:

- We have used the term 'retained profits' instead of 'retained earnings'. Both are used in Australia, but the former is more common. In the United States and Canada, 'retained earnings' is much more common.
- The income statement's bottom line is transferred to the statement of retained profits, which is often shown as a note to the balance sheet.
- The retained profits note's bottom line is transferred to the balance sheet, showing that the statements tie together (articulate) through retained profits.

In addition, asset and/or liability accounts in the balance sheet also have to change to reflect the wealth changes that revenues and expenses involve. These changes keep the balance sheet in balance with the change in retained profits. This is true for all companies, not just simple ones like Bratwurst Ltd.



HOW'S YOUR UNDERSTANDING?

- 2K** Suppose Bratwurst Ltd's accounting records showed the following for the next year, 2023: revenues earned \$14 200, cash collected from customers \$13 800, expenses incurred \$12 900, dividends declared and paid \$600. (Remember, retained profits equalled \$2200 at the end of 2022.) What was Bratwurst's net profit for 2023 and its retained profits as at the end of 2023?

2.9 A closer look at the income statement

Social and economic forces have helped to produce an income statement that is more complex than the **LO8** simple Bratwurst Ltd example you saw earlier. See Exhibit 2.7 for Tabcorp Holdings' Income statement.

Among the things you may notice as you review the two statements are:

- The income statement covers a period of time (years ending 30 June in this case), not a point in time, as the balance sheet does. It also is shown in millions of dollars.
- As you already saw with the balance sheets, extensive explanatory notes are normally referred to on the income statement and appended to them. The notes are not attached here. The content of such notes is important, however, so some comments are made about that below, and further attention will be paid to it in later chapters.
- At the top of the statement, the total revenue for the year is disclosed as \$5482.2 million.
- Expenses (including employment costs of \$421.2 million and commissions/fees of \$1499.2 million) are then deducted to get operating profit before income tax.
- Income tax is levied on a company's profit because it is legally separate from its owners. Such tax is usually a percentage of profit before income tax (though there are many complications). Income tax expense of \$161.9 million is deducted to get net profit/(loss) after tax. In 2018 there was a net profit of \$28.7 million and in 2019 the net profit was \$362.5 million.
- Note that the government taxes and levies (\$2009.4 million) are not income tax. There are separate taxes related to the gaming industry.
- In 2019 there is an impairment of \$2.9 million. This is where companies need to reduce the value of some of their assets below cost and is explained in Chapter 13.



HOW'S YOUR UNDERSTANDING?

- 2L** If the opening balance of retained profits is \$850 000, net profit before tax \$150 000, net profit after tax \$120 000, and \$70 000 of dividends were declared and paid, what is the closing balance of retained profits?

EXHIBIT 2.7TABCORP HOLDINGS LIMITED
INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2019

	2019 \$m	2018 \$m
Revenue	5 482.2	3 757.3
Other income	17.3	1.8
Commissions and fees	(1 499.2)	(1 174.5)
Government taxes and levies	(2 009.4)	(1 074.1)
Employment costs	(421.2)	(344.1)
Communications and technology costs	(125.8)	(102.1)
Advertising and promotions	(162.0)	(125.9)
Property costs	(69.9)	(74.9)
Other expenses	(183.6)	(167.7)
Depreciation and amortisation	(301.2)	(247.3)
Impairment	(2.9)	(31.4)
Transaction costs – combination with Tatts Group	<u>—</u>	<u>(48.6)</u>
Profit before income tax expense and net finance costs	724.3	368.5
Finance income	1.7	2.0
Finance costs	(191.8)	(129.9)
Profit from continuing operations before income tax expense	534.2	240.6
Income tax expense	(161.9)	(88.5)
Profit from continuing operations after income tax expense	372.3	152.1
Discontinued operations		
Loss from discontinued operations net of tax	<u>(9.8)</u>	<u>(123.4)</u>
Net profit after tax	362.5	28.7

© Tabcorp Holdings Limited, *Annual Report 2019* page 74, part of income statement only.
https://www.annualreports.com/HostedData/AnnualReportArchive/T/ASX_TAH_2019.pdf.

2.10 Capital markets, managers and performance evaluation

LO10 The profit figure, as disclosed in the income statement, has major impacts on managers' salaries, promotions, careers and reputations – especially where capital markets such as stock markets are concerned. Managers of large, publicly traded companies are under constant pressure because of the spotlight on profits and its components. Business and social observers often comment that this spotlight is too intense; that there is more to managerial performance than the profit figure.

An indication of the importance placed on profit can be found in almost any issue of a financial newspaper in their regular announcements of companies' annual and/or half-yearly profits. The emphasis is on profit. There is limited data about non-financial performance, longer-term issues or other aspects of managers' efforts. This is not to say that these other factors are not considered at some point, but when announcements tend to stress profits, other things can be overlooked.

Exhibit 2.8 shows an example of a press announcement showing sales, profits before tax (pre-tax), net profit after tax (net), earnings per share (EPS), interim and final dividends per share (which includes the date of payment; 'ff' signifies the dividend is fully franked, meaning that tax has already been paid on the profits

EXHIBIT 2.8

X LIMITED

ANNOUNCEMENTS OF COMPANY PROFITS IN THE FINANCIAL PRESS

Full year	2022 \$m	2021 \$m
Sales	1 672.2	1 571.3
Pre-tax	537.9	491.7
Net	605.6	529.3
EPS	55.5¢	48.1¢
Final div.	13¢ff	13¢ff
Shares (last)	\$5.36	-4.2¢

by the company; 'p' means it is partly franked) and the present share price, which includes the change from the previous day (shares last).

Some figures are converted to per-share data (these are the profit figure divided by the number of ordinary shares issued by the company). Per-share amounts are thought to be helpful to the user who owns or is thinking of buying a particular number of shares and wonders what portion of the company's results can be related to that number of shares. If you own n shares of X Limited, you can say that your shares earned \$0.555 per share in the 2022 financial year, up from \$0.481 per share in the previous financial year.

Share price information is given for the current period. For example, it shows that the share price of X Limited at the last sale the previous day was \$5.36, which was down 4.2 cents on the previous day's closing price.

When the financial statements are produced, and announcements like Exhibit 2.8 are made from them, the statements will reflect the same things. Therefore, share prices will go up or down when investors receive news about a company that changes the attractiveness of its shares. If this news comes out before the financial statements and the announcements (which is usually the case, especially for well-known companies that are frequently in the news), then the share price will already have changed in the manner to be expected from the announcements. If an announcement (surprisingly good or bad results) is not expected, then the share prices will change when the announcement is made, because the announcement is the news. For example, if the market expected a profit increase of 10 per cent but the announcement is a 13 per cent rise, then the share price is likely to go up (assuming no major changes in the overall market). On the other hand, if the announcement is a rise of 7 per cent only, the share price is more likely to fall.

Managers of companies with traded shares are therefore keenly aware of accounting's profit measurement, because accounting is tracking factors that investors are concerned about. If the investors do not learn about these factors from other sources, they will certainly learn about them from the accounting statements.

The income statement is also important for managers of smaller companies or private companies. While their shares are not traded, managers and owner-managers of smaller companies are also concerned about management bonuses, income tax and other effects of profit figures.

Managers of many companies – especially, but not only, larger corporations – go to great lengths to explain their performance to investors and to people on whom investors rely, such as share market analysts and business journalists. Therefore, every manager should be conversant with how her or his performance is measured in the income statement – because a lot of other people are!

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Calculate net profit

Assume this is the first year of operations for the company. Using the following information calculate net profit before tax.

	\$
Credit sales	300 000
Cash sales	100 000
Cash received from accounts receivable	160 000
Cost of goods sold	70 000
Cash purchases of inventory	90 000
Operating expenses paid	80 000
Operating expense incurred during the year but owing at year-end	30 000

PRACTICE PROBLEM B

Prepare a balance sheet appropriately classified

From the following information, prepare a balance sheet, appropriately classified, as at 30 June 2022 for PSM Limited.

	\$'000
Share capital	108 518
Cash	11 636
Accounts payable	43 091
Investments (\$3 371 000 held for short-term investment)	5 458
Retained profits	28 546
Prepayments	3 958
Accounts receivable	47 515
Long-term borrowings	30 866
Inventory	66 479
Provisions for employee entitlements (\$30 919 000 due within one year)	34 888
Property, plant and equipment	67 760
Other long-term assets	42 742
Other receivables (due in more than one year)	361

PRACTICE PROBLEM C

Revenues and expenses

The following transactions occurred during 2022.

- 1 Issued shares to investors for cash.
- 2 Provided services to customers, receiving part in cash and the rest on credit.
- 3 Incurred advertising expense, paid in cash.
- 4 Collected cash from accounts receivable.
- 5 Repaid a bank loan.

- 6 Purchased equipment on credit.
- 7 Bought inventory for cash.
- 8 Sold goods on credit (COGS equals 60 per cent of sales).
- 9 Paid wages expense for the period.
- 10 Received a loan from the bank.
- 11 Incurred maintenance expense, paid cash.
- 12 Declared and paid a cash dividend to investors.

For each of the transactions, indicate the effect (+ for increase and – for decrease) of each transaction on revenues, expenses and net profit. Write NE if there is no effect.

PRACTICE PROBLEM D

Income statement and balance sheet

Isabelle Limited started business on 1 September 2022. During the first month in business the following transactions occurred.

- a Issued share capital, \$100 000.
- b Paid one month's rent of \$2000.
- c Provided services to customers on credit, \$30 000; \$11 000 of this amount had been received by the end of the month.
- d Paid wages of \$7000.
- e Received a \$1000 bill for cleaning services on the newly rented property. The bill will be paid in October.

Required:

- 1 Prepare an income statement for the month of September 2022.
- 2 Prepare a balance sheet at 30 September 2022.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 a Provide three examples of both revenues and expenses.
b Which of the following items increase revenues: credit sales, cash sale, a loan from the bank, issue of share capital? For those items that do not increase revenues, explain why.
- 2 What is the difference between current and noncurrent assets?
- 3 What is the difference between current and noncurrent liabilities?
- 4 Do liabilities always involve future payments of cash?
- 5 Suggest two ways retained profits may decrease.
- 6 How can a balance sheet answer the following questions:
 - a Is a company financially sound?
 - b Can a company pay its bills on time?
 - c Should the board of directors declare a dividend?
 - d How old is the equipment?
- 7 List three liabilities that can be either current or noncurrent liabilities. What determines their categorisation?
- 8 The CEO of a large Australian company announced at a recent shareholders' meeting: 'Our people are our greatest assets.' If this is the case, why are they not included in the balance sheet?

- 9 Explain the following in non-technical language that a business person who has not read this text would understand:

Why are dividends to shareholders not considered to be an expense in calculating net profit? Employee wages are considered to be an expense, as is the cost of products delivered to customers, and shareholders must be kept happy, as must employees and customers.

- 10 Why are inventory and accounts receivable normally current rather than noncurrent assets? When would they be noncurrent assets?

- 11 Provide an indicator of whether a company is financially sound.

- 12 Provide an indicator of whether a company can pay its bills on time.

- 13 Consider any company you are familiar with or interested in and make a list of all the people who might be interested in its balance sheet. Make your list using the following headings:

Person (decision-maker)	Use (decision to be made)
----------------------------	------------------------------

Try to think about the 'use' issue broadly: your list could easily be a long one. You might make it even more broad by including people you think might like to use the balance sheet but whose needs are not served by it as you understand it, or who do not have timely access to it.

- 14 'Financial reports are no longer timely today.' Discuss.

- 15 Explain why the difference between current and noncurrent liabilities is important to a company.

PROBLEMS

PROBLEM 2.1

Classifying accounts on a balance sheet

Here are some of the accounts of MM Ltd:

- 1 Share capital
- 2 Accounts payable
- 3 Cash at bank
- 4 Inventory
- 5 Borrowings
- 6 Provision for employee entitlements (current portion)
- 7 Wages payable
- 8 Equipment
- 9 Accounts receivable
- 10 Retained profits

State whether each would be classified as an asset, a liability or shareholders' equity.

PROBLEM 2.2

Interpreting balance sheets

- 1 'The company is in a position to utilise a strong balance sheet to make acquisitions that should boost its earnings per share.'
- 2 'The company has maintained a strong balance sheet and had ample capacity to expand its business.'

Discuss the implications of each of these statements from the point of view of the comments made on their balance sheets.

PROBLEM 2.3

Prepare a classified balance sheet

Based on the following information, prepare an appropriately classified balance sheet as at 30 June 2022 for PQR Limited.

	\$'000
Share capital	47 184
Cash	63 382
Accounts payable	105 344
Retained profits	37 254
Accounts receivable	98 264
Interest-bearing liabilities (current)	192 370
Inventories	110 234
Provisions (current)	70 876
Property, plant and equipment	181 148

PROBLEM 2.4

Prepare a classified balance sheet

From the following information, prepare a balance sheet, appropriately classified, as at 30 June 2022 for Cobin Ltd.

	\$
Share capital	150 000
Property, plant and equipment, at cost	550 000
Accounts payable	61 000
Accounts receivable	68 000
Cash and cash equivalents	43 000
Notes payable	30 000
Prepayments	10 000
Long-term debt, excluding current portion	200 000
Long-term investments	110 000
Provision for employee entitlements (noncurrent)	34 000
Retained profits	184 000
Income taxes payable	32 000
Inventory	81 000
Patents and trademarks	44 000
Current portion of long-term debt	25 000
Accumulated depreciation	190 000

PROBLEM 2.5

Explain balance sheet ideas to a business executive

During a conversation at your summer holiday employment, one of the managers (who is not an accountant) asks you the following questions:

- 1 'My auditor keeps wanting to talk to me about what the balance sheet says about the company's finances and how I've managed them. But I always look to the future – why should I care about the balance sheet when it's just a "snapshot" of history?'

- 2 'Last year, I had a really good idea about the balance sheet. You know, I consider our restaurant managers to be the most important asset the company has. I was going to have the managers added to the balance sheet as assets, so it would show all our assets. But the accountants and auditors didn't seem interested in my idea. Why not?'

Required:

Using the knowledge gained from this chapter, suggest possible responses.

PROBLEM 2.6

Prepare a classified balance sheet

From the following information, prepare an appropriately classified balance sheet as at 30 June 2022 for SPOM Limited.

	\$'000
Share capital	71 667
Cash	32 000
Accounts payable	57 634
Retained profits	42 666
Receivables (\$1 549 000 due in more than one year)	49 132
Interest-bearing liabilities (\$8 732 000 due this year)	96 185
Intangibles	49 053
Inventories	55 117
Provisions (\$31 704 000 due within one year)	35 438
Property, plant and equipment	90 574
Other long-term assets (financial assets)	19 390
Prepayments	8 324

PROBLEM 2.7

Basic retained profits ideas

Assume a balance of \$12 220 for retained profit at 30 June 2022.

- 1 Explain what 'retained profits' represents.
- 2 For the year ended 30 June 2022, the company's revenues were \$101 160 and its expenses (including income tax) were \$98 810. During the year ended 30 June 2022, the company declared dividends of \$1200. What was the balance in retained profits at the beginning of that year (1 July 2021)?
- 3 For the year ending 30 June 2023, the company made a loss of \$20 000 and decided there would be no dividends paid for that year. Calculate the retained profits at 30 June 2023. How would you interpret this number?

PROBLEM 2.8

Income statement and balance sheet

The following account balances are taken from the books of Century Cinemas on 31 December 2022. Revenues and expenses are for the year ended 31 December 2022. The retained profits balance is as at 1 January 2022.

	\$
Accounts receivable	13 450
Accounts payable	13 910
Advertising expense	42 780
Cash	4 610
Confectionery sales	12 300
Cost of confectionery sold	10 500
Electricity expense	5 090
Furniture and fittings	34 000
Inventory	18 000
Land and buildings	60 000
Loan payable	35 000
Projection equipment	41 000
Rent expense	33 200
Retained profits, 1 January 2022	59 720
Share capital	60 000
Ticket revenue	81 700

- 1 Prepare an income statement for Century Cinemas for the year ended 31 December 2022.
- 2 Prepare a note for retained profits for the year ended 31 December 2022.
- 3 Prepare a balance sheet as at 31 December 2022.

PROBLEM 2.9

Indicate the effects of transactions

With respect to the current accounting period, show the effect of the following transactions on net profit and cash for the period.

- 1 Purchase inventory on cash for \$80 000.
- 2 Recording depreciation of \$20 000.
- 3 Credit sale of a service for \$60 000.
- 4 Payment of a cash dividend of \$16 000.
- 5 Payment of salary for the current period of \$40 000.
- 6 Interest payment on a loan of \$14 000.
- 7 Repayment of a loan of \$200 000.
- 8 Payment of an invoice for advertising of \$26 000 that had been recorded as an expense in the previous period.

PROBLEM 2.10

Effect of transactions on assets, liabilities and shareholders' equity

What is the effect on assets, liabilities and shareholders' equity of each of the following transactions?

- 1 Issue new shares in the company for cash.
- 2 Borrow money from the bank.
- 3 Receive payment from a debtor.
- 4 Purchase inventory on credit.
- 5 Purchase inventory for cash.
- 6 Pay accounts payable.
- 7 Receive interest that was due from the previous accounting period.
- 8 Purchase equipment on credit.
- 9 Repay a loan.

PROBLEM 2.11

Recording of assets

State whether or not an asset should be recorded in the balance sheet of WXY Ltd as at 30 June 2022 in each of the following situations. State the amount (if any) of the asset, and any assumptions made.

- 1 On 1 June 2022, XYZ Ltd paid Insurance Ltd \$40 000 for an insurance premium. The premium covers losses incurred due to fire, theft or other causes up to 31 May 2023.
- 2 XYZ Ltd paid \$50 000 for a patent in April 2022.
- 3 XYZ Ltd has just hired a new general manager who is an expert in the business carried on by XYZ Ltd. With the help of this person, the company is expected to increase its annual profits by \$850 000. The general manager's salary is \$500 000 per annum.
- 4 XYZ Ltd purchased land in 2015 for \$3 million. The market value of this land is \$5 million as at 30 June 2022.
- 5 Equipment purchased for \$1 million and costs an additional \$300 000 to install.
- 6 Purchased a computer with a 'sticker price' of \$3200 but because they were a regular customer XYZ was charged only \$2700.

PROBLEM 2.12

Recording of liabilities

State whether or not each of the following events would result in a liability being recognised in the accounts at 30 June.

- 1 Taxes for the year ended 30 June, which are not payable until September.
- 2 Wages to be paid on 4 July to cover the two-week period up to 30 June.
- 3 The company sells washing machines and gives a two-year warranty to repair or replace any faulty machines.
- 4 A construction company receives a \$15 million advance in June on a contract. The work will commence in July.
- 5 The company has signed a contract to pay its managing director \$1 million per annum (inflation adjusted) for the next three years.

PROBLEM 2.13

Recognise revenue

Calculate the total revenue for the month of February 2022, given the following transactions.

- 1 Credit sales of \$200 000 made in February; 40 per cent to be collected in February.
- 2 Cash sales of \$160 000.
- 3 Received rental revenue of \$9000 for the month of February.
- 4 Interest of \$12 000 is credited to the company bank statement. It relates to interest earned for the six months from 1 August 2021 to 31 January 2022.
- 5 Received \$40 000 as a deposit from a customer for a job to be carried out in March.

PROBLEM 2.14

Recognise revenue

Copier Ltd manufactures and sells small home photocopiers to homes and small businesses; it also sells cartridges to go in the copiers and monthly magazines on running a small business.

Consider the following transactions:

- 1 It delivers 15 photocopiers; the customer promises to pay \$30 000 within two months.
- 2 It buys a motor vehicle with a list (or 'sticker') price of \$41 000 for \$31 200 cash.
- 3 It receives orders for 1000 ink cartridges from customers for \$22 each for future delivery. The terms require payment in full within 30 days of delivery.
- 4 It completes production of the ink cartridges described in point 3 and delivers the order.
- 5 It issues \$2 million in new shares.

- 6 It receives a total of \$4800 from subscribers to the magazine. The subscriptions cover a full 12 editions for the year. Only the first edition has been posted to customers.

For each of the transactions, state if revenue is to be recognised in the current financial year, and indicate the revenue account title and amount. If revenue is not to be recognised this year, explain why.

PROBLEM 2.15

When is revenue earned?

Is revenue earned from the following transactions? Give reasons for your answers.

- 1 Goods costing \$7000 are sold for \$9500.
- 2 Goods costing \$7000 are sold for \$7000.
- 3 Goods costing \$7000 are sold for \$4500.
- 4 A surveyor sends an account for \$15 000 to a builder for work in connection with a subdivision of a block of land.
- 5 An electrical store provides a free service on a television set during the warranty period. The cost to the store was \$250.
- 6 A company receives a dividend of \$8000 on one of its investments.
- 7 Goods costing \$1000 are sold for \$1600. Instead of paying for the goods, the customer cleans the store's windows. This cleaning is normally carried out by an outside contractor at a cost of \$1600.

PROBLEM 2.16

Recognise expenses

Calculate the total expenses for the month of February 2022, given the following transactions.

- 1 Paid salaries of \$21 000; \$6000 related to work carried out in January and \$15 000 related to February work.
- 2 Paid commission expenses of \$17 000 in February. The commission related to January sales.
- 3 Paid rent for the month of February of \$6000 on 9 February.
- 4 Received a bill for \$800 from a plumber for repair work done on 25 February. This will be paid next month.
- 5 Purchased a block of land for \$700 000 paying cash.

PROBLEM 2.17

Recognising expenses

Calculate the total expenses for the month of June 2022, given the following transactions.

- 1 Paid salaries of \$60 000; \$50 000 related to work carried out in May 2022 and \$10 000 related to June 2022.
- 2 A phone bill for \$1200 was received for the usage on June. This amount will be paid on 1 July 2022.
- 3 A \$65 000 deposit was paid for a block of land.
- 4 Paid rent for the month of June of \$6000 on 1 June 2022.
- 5 A commission expense of \$8000 was paid in June. The commission related to April sales.

PROBLEM 2.18

Accountants, ethics and the balance sheet

As has been indicated several times so far (in section 2.10, for example), managers of businesses and other organisations are very concerned about how the balance sheet reflects their management of the organisation. This is very understandable, and generally appropriate too, because such concern is likely to make managers want to do a good job of managing. But it can also lead to a temptation to alter the information in a manager's favour.

The possibility of such a temptation is part of the reason auditors are employed to examine financial statements, including the balance sheet. This temptation can also produce ethical problems for professional accountants employed by the organisation. On the one hand, a company accountant is bound by the ethical rules of the profession to see that proper accounting methods are followed in preparing the company's balance sheet, which would imply that the information should not be altered in management's favour. On the other hand, such an accountant works for senior management and is likely to be bound by the contract of employment to put the organisation's interests first. What does an accountant (such as the chief accountant

responsible for preparing the organisation's financial statements) do if senior management (like the CEO) wants to alter the balance sheet to make things look better and makes a good case that this action will help the organisation get bank loans and the other assistance it needs?

Discuss this situation from the viewpoint of both the CEO and the chief accountant.

CASES

CASE 2A

Woolworths Limited

Refer to the extracts of the 2021 annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 At what point in time is the balance sheet drawn up?
- 2 What is the currency in which accounts in the balance sheet are measured?
- 3 Illustrate how the 2021 balance sheet of Woolworths Limited balances.
- 4 How were the assets financed?
- 5 How is the 'net assets' figure determined?
- 6 What are the balances of current assets, current liabilities, noncurrent assets and noncurrent liabilities at 27 June 2021?
- 7 What is the balance of working capital at 27 June 2021?
- 8 What dividends were paid during the year?
- 9 What is the amount of share capital issued?
- 10 What amount of revenue was earned in 2021?
- 11 What is cost of goods sold for Woolworths in 2021?
- 12 For Woolworths in 2021, are the net profits from ordinary activities after tax and the change in the cash balance the same amounts?
- 13 What is the amount of net profit for 2021?
- 14 How much inventory (in dollars) does the company have as at 27 June 2021?
- 15 By what amount did cash and cash equivalents change during the most recent year?

CASE 2B

The importance of balance sheets in making decisions

Newspaper articles often refer to balance sheets with terms such as 'the importance of a strong balance sheet', and 'not wanting to weaken a strong balance sheet or adversely affecting the debt rating by a stock buyback'.

Required:

- 1 What is meant by a strong balance sheet?
- 2 What is the effect of issuing more shares on the strength of the balance sheet?
- 3 What is meant by a share buyback?
- 4 What effect does a share buyback have on the accounting equation?
- 5 What is meant by a debt rating? Why is it important?
- 6 Why is a strong balance sheet important for each of the Australian state governments?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

- 2A** Assets: cash at bank, accounts receivable, buildings. Note that accounts payable and retained profits are not assets as they are liabilities and equity respectively.
- 2B** Share capital (SE) and employees (not included in a balance sheet).
- 2C** (i) Accounts payable, wages payable and taxes payable.
(ii) No, the transaction bringing the benefit has not happened.
(iii) 1 May.

- 2D** Liabilities, share capital and retained profits.
- 2E** (i) Current assets \$3300 (\$1100 + \$1700 + \$500), noncurrent assets \$2000; total assets \$5300; current liabilities \$2100, noncurrent liabilities \$0; share capital \$1000, retained profits \$2200; shareholders' equity \$3200; and total liabilities and equity \$5300.
- (ii) Working capital is \$1200; the working capital ratio (current assets ÷ current liabilities) is 1.57, so it is not as strong currently as Sound and Light is. Liabilities of \$2100 are 39.6 per cent of total sources, with a debt-to-equity ratio (total liabilities ÷ total shareholders' equity) of 65.6 per cent, so the company's financing is similar to Sound and Light's, though all of its liabilities are current, which is unusual.
- 2F** Total assets of \$1270 ($640 + 210 + 890 - 470$) and total liabilities of \$610 ($250 + 360$) (giving net assets of \$660), and shareholders' equity of \$660.
- 2G** (i) a No effect: equipment increases but cash decreases.
b Increases by \$30 000 (inventory).
c Increases by \$50 000 (cash).
d No effect: cash increases but accounts receivable decreases.
e Increases by \$300 000 (cash).
- (ii) Only transactions (b) and (c) increase liabilities. Transactions (a) and (d) affect two different assets. Transaction (e) increases an asset and shareholders' equity.
- 2H** (i) Sales revenue: $600 \times 1000 = 600\,000$.
(ii) COGS: $600 \times 400 = 240\,000$.
(iii) Inventory: $200 \times 400 = 80\,000$.
- 2I** Revenue \$200 000 + \$300 000; expenses \$30 000 + \$6000 + \$1500 (note dividends are not an expense).
- 2J** (i) $\$1\,141\,900 + \$4000 = \$1\,145\,900$.
(ii) $\$700\,000 + \$218\,200 + \$2900 = \$921\,100$.
(iii) $\$1\,145\,900 - \$921\,100 = \$224\,800$.
(iv) $\$1\,000\,000 + \$224\,800 - \$16\,000 = \$1\,208\,800$.
- 2K** Net profit: $\$14\,200 - \$12\,900 = \$1300$
Closing retained profits: $\$2200 + \$1300 - \$600 = \2900 .
- 2L** $\$850\,000 + \$120\,000 - \$70\,000 = \$900\,000$.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

	\$
Sales ($300\,000 + 100\,000$)	400 000
COGS	(70 000)
Other operating expenses ($80\,000 + 30\,000$)	<u>(110 000)</u>
Net profit before tax	220 000

PRACTICE PROBLEM B

**PSM LIMITED
BALANCE SHEET AS AT 30 JUNE 2022**

	\$000
Current assets	
Cash	11 636
Accounts receivable	47 515
Inventory	66 479
Prepayments	3 958
Investments	<u>3 371</u>
Total current assets	132 959
Noncurrent assets	
Other receivables	361
Investments	2 087
Property, plant and equipment	67 760
Other long-term assets	<u>42 742</u>
Total noncurrent assets	<u>112 950</u>
Total assets	<u>245 909</u>
Current liabilities	
Accounts payable	43 091
Provisions for employee entitlements	<u>30 919</u>
Total current liabilities	<u>74 010</u>
Noncurrent liabilities	
Long-term borrowings	30 866
Provisions for employee entitlements	<u>3 969</u>
Total noncurrent liabilities	<u>34 835</u>
Total liabilities	<u>108 845</u>
Net assets	<u>137 064</u>
Shareholders' equity	
Share capital	108 518
Retained profits	<u>28 546</u>
Total shareholders' equity	<u>137 064</u>

PRACTICE PROBLEM C

- 1 NE
- 2 +Revenue, +Net Profit
- 3 +Expense, -Net Profit
- 4 NE
- 5 NE
- 6 NE
- 7 NE
- 8 +Revenue, +Expense, +Net Profit

9 +Expense, -Net Profit

10 NE

11 +Expense, -Net Profit

12 NE

PRACTICE PROBLEM D

INCOME STATEMENT FOR THE MONTH OF SEPTEMBER 2022

	\$	\$
Sales		30 000
Expenses:		
Wages	7 000	
Cleaning	1 000	
Rent	<u>2 000</u>	<u>10 000</u>
Net profit		<u>20 000</u>

BALANCE SHEET AS AT 30 SEPTEMBER 2022

	\$	\$
Assets		Liabilities
Cash ¹	102 000	Accounts payable
Accounts receivable ²	19 000	
		Shareholders' equity
		Share capital
		Retained profits ³
	<u>121 000</u>	<u>121 000</u>

¹100 000 – 2000 + 11 000 – 7000 = 102 000

²30 000 – 11 000 = 19 000

³As there is no opening retained profits and no dividends, it is profit figure from the income statement



APPENDIX TO CHAPTER 2

Background: sole traders, partnerships, companies and financing

To help you further understand the balance sheet, read the following background material. This section focuses on the right-hand side of the accounting equation, examining how the form of business organisation determines the way owners' equity is shown on the balance sheet and outlining how both right-hand terms indicate how the assets are financed. This book's glossary will also help you to understand the terminology.

There are many important forms of organisation, such as businesses organised as partnerships, companies or cooperatives, and non-business organisations such as clubs, charities, governments and political parties. However, they cannot all be described here. Instead, we will focus on four main kinds of business organisations and their main methods of financing.

A2.1 Four kinds of business organisation

You have seen that each balance sheet has an owners' equity section. The examples of Sound and Light Ltd and Chez Ltd indicated that the equity could be considered to be of two general kinds for a business organisation:

- directly contributed equity, in which owners have provided money or other assets to the organisation
- indirectly contributed equity (retained profits), in which owners have allowed profits earned by the organisation to remain there, to help earn more profits in the future.

The legal meaning of being an owner depends on what kind of organisation exists. The equity section of the balance sheet reflects that legal meaning, so that owners and other users will understand the status of their equity. The four main kinds of business organisation are the sole trader, the partnership, the company and the corporate group.

Sole trader

A sole trader (sole proprietorship) is a business owned by one person (the proprietor). It does not legally exist separately from the owner. Because the business does not exist as a separate legal entity, it is said to be unincorporated. If Simone, a jeweller, just starts up a business one day on her own without further legal steps, the business is a sole trader. Legally, such a business is not distinguishable from Simone's non-business affairs. If she wishes, she can use the business cash to buy groceries (although separate records of business transactions must be kept for tax purposes), and if she does not pay her business bills, her creditors can claim against any non-business assets she has.

Because a sole trader has no separate legal existence, the equity section of the balance sheet does not necessarily distinguish between the owner's direct contributions to the business and the indirect contributions by retained profits. Both kinds of equity are simply lumped together as owners' capital. The owners' equity section of the balance sheet just says:

Owners' equity		
Owners' capital		\$XXXX

Partnership

A partnership is also unincorporated, but it has more than one owner. Partnerships are not separate legal entities, and all partners are personally responsible for the debts of the partnership. Again, the owners' personal assets can be claimed by business creditors, so there is the same, somewhat arbitrary, distinction between business affairs and personal affairs.

The fact that there is more than one owner introduces some formality into the business. For example, there is (or should be) an agreement about how the profits of the business are to be split among the partners and about how much each partner can withdraw from the business. Because stress can develop in partnerships, states and countries have partnership laws that provide some structure if the partners do not do so themselves. A partnership's owners' equity section of the balance sheet, like that for a sole trader, does not necessarily distinguish between owners' direct contributions and retained profits. The only difference is that each owner's total capital is identified on the face of the balance sheet (or, if there are many partners, as in firms of lawyers, accountants or engineers, in a separate schedule).

Therefore, the owners' equity section of the partnership's balance sheet shows:

Owners' equity	\$
Partners' capital:	
Partner A	XXXX
Partner B	XXXX
Partner C	XXXX
Total capital	<u>XXXX</u>

When an individual wishes to leave the partnership, it is necessary to obtain the permission of existing partners to transfer ownership to a new partner. As with sole traders, partnerships are not legal entities, but for accounting purposes they are considered as a separate entity from the partners.

Company

Companies are legal entities established under Corporations Law. The company's capital is divided into shares, and the owners are called shareholders. Companies are separate legal entities; therefore, they can buy, own and sell assets, enter into contracts in their own right, and sue and be sued.

The major advantage of a company structure is that a company has limited liability in the event of its failure. This means that shareholders are not liable for debts incurred by a company once their shares have been paid for in full; that is, their liability is limited to the unpaid amount on any shares bought. All companies that have limited liability have the word 'Limited' or 'Ltd' after their name.

Other advantages of a company structure include the ease of transfer of ownership and increased borrowing power. The shares of public companies can generally be sold freely, and transfer of ownership does not affect the continuity of operations. Stock exchanges provide a convenient means for the disposal and acquisition of shares and for making known the prices that sellers are willing to accept and that buyers are prepared to offer.

In the case of the death of a shareholder in a company, ownership of the share normally passes to the beneficiary of the deceased shareholder, without interruption to the activities of the company.

A company has available to it a number of sources of funds that are denied to a sole proprietorship or a partnership. Debentures or unsecured notes may be issued by a company. A debenture is a document that evidences an undertaking by a company to repay a particular amount at or before an agreed date, and to pay interest at an agreed rate at specified intervals. The debt may be secured by a specific charge over certain assets, or by a 'floating charge' over all the assets of the company. Highly regarded companies may

be able to obtain funds without pledging assets; that is, by the issue of unsecured notes or the acceptance of deposits.

Because of these advantages, particularly limited liability, most business organisations are companies. Even your local newsagent, chemist or corner shop is likely to have adopted a company structure.

Companies can be either public or private companies. The main difference is that public companies can invite the public to subscribe to their share capital using a document called a prospectus. A private company (denoted by 'Pty' in the name) cannot invite the public to subscribe for shares. They also have limits on the number of shareholders (maximum 50) and other restrictions on the transferability of the shares. Private companies have certain exemptions regarding requirements to provide full financial statements and the appointment of auditors.

Listed public companies are those public companies that have chosen to be listed on the Australian Securities Exchange. This listing assists trading in the company's shares and helps in the raising of funds. However, it does involve additional disclosure to the stock exchange.

Companies can be very complex; just two complexities will be mentioned here.

FORMS OF SHARE CAPITAL

People become owners of a company by buying shares that give them voting powers or other rights. When a share is first issued by a company, the money received for it is put in the company's bank account and the source of that asset is called share capital, which is an owners' equity item. If the person who paid the company for that share later sells it to someone else, the money for that sale goes to the person who owned the share, not to the company. Therefore, the company's share capital shows only the amount received by it the first time the share is sold. Most of the millions of share sales and purchases that take place on the world's stock exchanges every day have no effect on companies' balance sheet accounts for share capital, because they are trades among owners, not issues by the companies.

There are several classes of shares, including:

- *ordinary shares*: owners of these vote; they are the company's basic (residual) owners, the ones who decide who will be on the board of directors that manages the company for the owners and declares dividends to owners
- *preference shares or otherwise special shares*: owners usually do not vote, but in return they have rights, such as receiving a fixed dividend each year and, in some cases, a preference in asset distributions if the company liquidates
- *Class A, Class B and other such categorisations*: whether these are more like ordinary shares or preference shares depends on the specific rights they carry. Many companies use these vague terms because the complexity of rights often prevents a simple categorisation such as ordinary or preference.

The face of the balance sheet or the notes to the accounts will list all the kinds of shares the company is authorised to issue, specify any special rights and show the amount of share capital issued so far for each kind of share. The cash received for such share capital is the property of the company: the owners (i.e. shareholders, or stockholders as they are often also called, especially in the United States) have no right to get the money back – except in specific circumstances.

RETAINED PROFITS

Profits of a company can be paid to the owners in the form of a dividend or retained within the company. The balance sheet shows the amount of any retained profits (past profits minus past dividends) as a separate owners' equity item.

Thus, in addition to its lists of assets and liabilities, a company's balance sheet has an owners' equity section showing various legal details to assist current and future owners:

Shareholders' equity	\$
Share capital:	
Class A shares (for example)	XXXX
Class B shares (for example)	<u>XXXX</u>
Total issued capital	XXXX
Retained profits	<u>XXXX</u>
Total shareholders' equity	XXXX

Items other than issued capital and retained profits may appear in a company's owners' equity. Such items reflect legal and accounting complexities that are not important at this point. These items (including reserves) will be discussed in Chapter 15.

Corporate group

Many companies you are familiar with, such as BHP, CSR, the Commonwealth Bank and Woolworths, are not single companies but are rather groups of many, often hundreds, of companies. The balance sheet of such a corporate group attempts to represent what that group looks like as a 'consolidated' economic entity, although there is no such entity legally. Doing this requires complex accounting techniques that are mostly beyond the scope of this book. The balance sheet of a corporate group looks like that of a single company, with the shareholders' equity section representing the equity of the primary, or parent, company in the group. In Chapter 13, a brief examination will be made of the assumptions behind financial statements for corporate groups. For now, remember that such consolidated financial statements are aggregates of many legally separate companies. A summary of the different kinds of business organisations is given in Exhibit A2.1.

EXHIBIT A2.1 KINDS OF BUSINESS ORGANISATIONS			
Kind	Legality	Owner(s)	Equity accounts
Sole trader	Not separate from owner	One proprietor	Capital and retained profits are combined
Partnership	Not separate from owners	Several or many partners	Capital and retained profits are combined but each partner's total is calculated separately
Company	Separate from owners	Usually several or many shareholders	Legal share capital is disclosed separately from retained profits
Corporate group	Consists of legally separate companies	Usually several or many shareholders	Legal share capital of parent company is disclosed separately from retained profits

A2.2 Business financing

The balance sheet's right side lists the sources of the assets listed on its left side. As this book proceeds, many details about both sides of the balance sheet will be explained. For now, here is a list of the main sources.

Current liabilities (due within a year)

- Loans from banks due on demand or otherwise, at least potentially payable sooner rather than later.
- Financing provided by suppliers and other trade creditors by allowing the organisation to obtain credit for its purchases and pay for them later

- Wages earned by, but not yet paid to, employees and taxes withheld from them that are to be turned over to the taxation authorities
- Other amounts that will be paid in the next year related to such employee benefits as holiday pay and long service leave
- Estimates of amounts owing for things such as power, interest charges, legal costs and other debts building up, but not yet actually billed to the organisation
- Income and other taxes owed by the organisation
- Dividends owed by the organisation (if it is a company), declared by the board of directors, but not yet paid to the shareholders
- Short-term portions of longer-term debts, such as the principal payments due over the next year on long-term mortgages.

Noncurrent liabilities (debts due more than a year in the future)

- Mortgages and other debts extending over several years
- Certain long-term liabilities, such as special loans from owners in addition to their share capital, long-term tax estimates and estimated liabilities for amounts to be paid to employees in the future.

Owners' equity

- *For a sole trader:* owner's capital (contributed capital and profit not withdrawn by the owner)
- *For a partnership:* owners' capital (contributed capital and profits not withdrawn by the owners)
- *For a company:* share capital received for each kind of share plus retained profits (plus some other items if legal or accounting complexities require them).

Recording accounting transactions

3



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** carry out transaction analysis and determine the impact of transactions on elements of balance sheets and income statements (3.1, 3.2)
- LO2** describe how debits and credits work in the double-entry accounting system (3.3, 3.5)
- LO3** record transactions using debits and credits (3.5, Appendix 3.1)
- LO4** prepare journal entries (3.7)
- LO5** determine the balance of an account after a series of transactions (3.4, 3.6)
- LO6** explain the different levels of accrual accounting (3.8)

CHAPTER OVERVIEW

In Chapter 2 we discussed the importance of the balance sheet and income statement to managers. It is therefore critical that every manager understands the impact of transactions on these financial reports. This chapter provides those skills by extending transactional analysis, which considers the impact of specific transactions on the accounting equation. A good understanding of transactional analysis will make the rest of this book easier to follow. As well as being critical for managers and other users of accounting reports, transactional analysis is important to preparers of financial information, as it forms the basis of the double-entry system.

The double-entry system involving debits and credits – which forms the basis of modern accounting – is then described. We use this system to prepare journal entries and (via the use of spreadsheets) to prepare financial statements. Preparing financial statements by the full accounting process is left to Chapter 10. With the extended knowledge of transaction analysis, we will illustrate the differences between accrual and cash accounting.

3.1 Transaction analysis

LO1 The purpose of this section is to extend your knowledge of how various transactions affect the accounting equation. In this section we concentrate on transactions that affect the balance sheet. In section 3.2, the accounting equation is expanded to show the effect on the income statement. Transaction analysis is a useful way of understanding how any transaction or event affects a company's financial statements.

Recall that the basic accounting equation is:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

After each transaction, the total assets must always equal the total liabilities and shareholders' equity. This equality remains regardless of the type of transaction.

To illustrate, consider the following transactions for LRM Ltd for March 2022. A summary of the effect of each of these transactions is shown in Exhibit 3.1.

- 1 Shareholders invested \$200 000 cash in the business. The effect of this transaction is to increase cash (an asset) and increase share capital (a shareholders' equity account).
- 2 Land and buildings were purchased for \$300 000, which is financed by a loan from the seller repayable in five years. For this transaction, land and buildings (an asset) is increased. This is financed through a loan, so loan (a liability account) is also increased. Note that this transaction does not affect shareholders' equity. The shareholders do not have any more or less equity in the company, as assets and liabilities increased by the same amount. Note that after these first two transactions the accounting equation is still in balance, as will be the case after every transaction.
- 3 Inventory worth \$50 000 was bought on credit. Inventory is purchased for \$50 000, with an agreement to pay the suppliers at a later date (often 30 days after the date of sale). Again, both an asset and a liability are increased. In this case inventory (asset) and accounts payable (liability).
- 4 Equipment worth \$90 000 was purchased by paying \$20 000 cash and signing an agreement to pay the remainder in 90 days. This involves the purchase of equipment (increase in an asset), which is financed by both paying out cash (an asset) and incurring a liability, which in this case is notes payable. Notes payable differs from accounts payable because the liability is evidenced by a promissory note or bill of exchange. Notes payable increased by \$70 000. Therefore there will be an overall increase in assets of \$70 000 (equipment increase of \$90 000 and a cash decrease of \$20 000) with liabilities increasing too by \$70 000.
- 5 Damaged inventory that was purchased on credit at a cost of \$5000 was returned to the supplier. This reverses part of transaction 3. The damaged inventory is returned to the supplier, thus decreasing inventory (an asset). As less money is now owed to the suppliers, accounts payable (a liability) is also reduced.
- 6 Paid \$30 000 on accounts payable. This results in the liability (accounts payable) being reduced by a payment that reduces an asset (cash).
- 7 Purchased \$10 000 inventory using cash. All of the six transactions discussed have affected both sides of the equation. However, this transaction affects only the asset side. It results in one asset (inventory) increasing and another asset (cash) decreasing and therefore no overall change to assets. Again, after all transactions have been recorded, the accounting equation balances.

Based on the totals of the accounting equation in Exhibit 3.1, a balance sheet is produced in Exhibit 3.2. As this is a new organisation and none of the transactions affected revenues or expenses, there is a zero balance for retained profits. Note that at this stage neither interest on the loan nor depreciation on the buildings and office equipment has been included.

EXHIBIT 3.1

LRM LTD
ACCOUNTING EQUATION

	Cash	Inventory	Land and buildings	Equipment	=	Accounts payable	Notes payable	Long-term loan	Share capital
1	+200 000								+200 000
2			+300 000					+300 000	
3		+50 000				+50 000			
4	-20 000			+90 000			+70 000		
5		-5 000				-5 000			
6	-30 000					-30 000			
7	-10 000	+10 000	<u>_____</u>	<u>_____</u>	<u>\$585 000</u>	<u>+15 000</u>	<u>+70 000</u>	<u>+300 000</u>	<u>+200 000</u>
	<u>+140 000</u>	<u>+55 000</u>	<u>+300 000</u>	<u>+90 000</u>	<u>=</u>	<u>\$585 000</u>			

EXHIBIT 3.2

LRM LTD
BALANCE SHEET AS AT 31 MARCH 2022

Assets	\$	Liabilities and shareholders' equity	\$
Current assets		Current liabilities	
Cash	140 000	Accounts payable	15 000
Inventory	<u>55 000</u>	Notes payable	<u>70 000</u>
	<u>195 000</u>		<u>85 000</u>
Noncurrent assets		Noncurrent liabilities	
Land and buildings	300 000	Long-term loans	<u>300 000</u>
Office equipment	<u>90 000</u>	Total liabilities	<u>385 000</u>
	390 000	Shareholders' equity	
		Share capital	200 000
		Retained profits	<u>0</u>
Total assets	<u>585 000</u>	Total shareholders' equity	<u>200 000</u>
		Total liabilities and SE	<u>585 000</u>



HOW'S YOUR UNDERSTANDING?

3A Consider the following questions:

- (i) If a company receives \$10 000 cash from its accounts receivable, what effect will it have on the accounting equation?
- (ii) You purchase \$5000 of inventory on credit. What effect will it have on the accounting equation?
- (iii) Did either of these two transactions affect profit for the period?

3.2 Transaction analysis extended

LO1 We will now expand the LRM transaction analysis example in section 3.1 to include some revenue and expense transactions.

To do this we will expand the accounting equation. Let's start with:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

Now remember: Shareholders' equity = Share capital + Retained profits

So we can re-write the equation as:

$$\text{Assets} = \text{Liabilities} + \text{Share capital} + \text{Retained profits}$$

Also remember: Retained profits = Opening retained profits + Net profit – Dividends

So we can now re-write the equation as:

$$\text{Assets} = \text{Liabilities} + \text{Share capital} + \text{Opening retained profits} + \text{Net profit} - \text{Dividends}$$

Finally you will recall: Net profit = Revenues – Expenses

So to conclude the equation is expanded to:

$$\text{Assets} = \text{Liabilities} + \text{Share capital} + \text{Opening retained profits} + \text{Revenue} - \text{Expenses} - \text{Dividends}$$

Recall from section 3.1 that, after the initial transactions were recorded, the closing balances were as follows as at 31 March 2022 for LRM Ltd:

	\$
Cash	140 000
Inventory	55 000
Land and buildings	300 000
Equipment	90 000
Accounts payable	15 000
Notes payable	70 000
Loans	300 000
Share capital	200 000

Consider the following additional transactions for the month of April 2022. A summary of the effect of these transactions is provided in Exhibit 3.3.

- 8 Cash sales of \$30 000 were made. The cost of the goods that were sold amounted to \$12 000. This transaction has two effects: one to recognise revenue and increase assets; the other to recognise an expense and decrease assets. A cash sale of \$30 000 was made. This increases a revenue account (sales revenue) and increases an asset (cash). We are also told that cost of goods sold, often abbreviated as COGS, amounted to \$12 000. Cost of goods sold is what the company pays to acquire the goods that customers buy. It is not the same as sales revenue, but is rather an expense the company incurs to earn sales revenue. In this case the expense (COGS) increases by \$12 000 and inventory (an asset) decreases by \$12 000; that is, the goods when purchased were added to inventory, and now that they are sold, inventory is decreased.
- 9 Credit sales of \$40 000 were made. The COGS was \$16 000. This transaction has the same effect on the accounting equation as transaction 8, except that accounts receivable (an asset) is increased instead of cash (another asset). Because it was a credit sale, payment will be received in the future rather than now. Sales revenue and accounts receivable increase by \$40 000, inventory decreases by \$16 000 and cost of goods sold increases by \$16 000.

EXHIBIT 3.3

LRM LTD
TRANSACTION ANALYSIS

	Cash	Accounts receivable	Assets	Inventory	Land and buildings	Equipment	=	Accounts payable	Liabilities	Notes payable	Wages payable	Shareholders' equity	Revenues	+ Share capital	Share capital	Revenues	Shareholders' equity	Expenses*
Bal	+140 000		+55 000	+300 000		+90 000		+15 000		+70 000		+300 000		+200 000		+30 000		-12 000
8	-+30 000				-12 000											+40 000		-16 000
9			+40 000		-16 000													
10	-8 000								-8 000									
11	-20 000																	-20 000
12																		-2 000
13	+25 000					-25 000												
14																		-18 000
Total	<u>+167 000</u>	<u>+15 000</u>	<u>+27 000</u>	<u>+300 000</u>	<u>+90 000</u>	<u>+90 000</u>	<u>=</u>	<u>+9 000</u>	<u>+70 000</u>	<u>+18 000</u>	<u>+18 000</u>	<u>+300 000</u>	<u>+200 000</u>	<u>=</u>	<u>+70 000</u>	<u>+70 000</u>	<u>-68 000</u>	

*Expenses are shown as negative numbers in the transaction analysis table. Expenses are listed under the shareholders' equity section of the transaction table and you will recall that an expense will decrease net profit and therefore decrease retained profits and in turn shareholders' equity. Therefore the expenses are shown as a negative to represent the decrease in shareholders' equity.

- 10** Payments of \$8000 were made to suppliers. In this transaction, a payment was made and therefore cash (an asset) decreases. In addition, the payment to suppliers reduces accounts payable, a liability account.
- 11** Paid wages of \$20 000 for the first two weeks of April. Wages are an expense for the period. The payment of wages in this transaction increases this expense and reduces the cash account (an asset).
- 12** Received an advertising invoice for \$2000 for a radio advertisement broadcast on 5 April. The invoice will be paid next month. The company receives an invoice for services that have already been provided to it. The expense should be recognised in the period when the service was received. Therefore, an expense account (advertising) will be increased by \$2000 and a liability account (accounts payable) will increase by \$2000, as the amount has not yet been paid.
- 13** Received \$25 000 from accounts receivable. This results in one asset (cash) increasing and another asset (accounts receivable) decreasing. No revenue is recognised as that occurred earlier when the sale was made (see transaction 9).
- 14** At the end of the month \$18 000 is owing in wages for the last two weeks of the month. It is due to be paid on 1 May. The employees have carried out the work but have not yet been paid because the next pay day falls on the first day of the following month. As they have done the work, an expense account (wages) increases by \$18 000. Also, as the amount is owed to them, a liability account (wages payable) increases by \$18 000.



HOW'S YOUR UNDERSTANDING?

- 3B** What effect will the following transactions have on the accounting equation?
- (i) An invoice of \$300 is paid for electricity used during the current period.
 - (ii) Inventory costing \$20 000 was sold for \$30 000 on credit.
 - (iii) Wages of \$20 000 owing to employees from last period were paid this period.
- 3C** What, if any, was the effect on profit for these transactions?

Based on the totals of the columns in Exhibit 3.3, an income statement and a balance sheet were prepared, as shown in Exhibits 3.4 and 3.5. The income statement is based on the revenue and expense columns in Exhibit 3.3. The retained profits figure (same as profit for the period as there is no opening balance of retained profits and no dividends declared), together with the share capital account and the other assets and liabilities accounts, provide the information for the balance sheet.

EXHIBIT 3.4

LRM LTD

INCOME STATEMENT FOR THE MONTH ENDED 30 APRIL 2022

	\$	\$
Sales		70 000
Less Cost of goods sold		<u>28 000</u>
Gross profit		42 000
Less Operating expenses		
Wages	38 000	
Advertising	<u>2 000</u>	<u>40 000</u>
Net profit		<u>2 000</u>

EXHIBIT 3.5

LRM LTD

BALANCE SHEET AS AT 30 APRIL 2022

Assets	\$	Liabilities and shareholders' equity	\$
Current assets			Current liabilities
Cash	167 000	Accounts payable	9 000
Accounts receivable	15 000	Notes payable	70 000
Inventory	<u>27 000</u>	Wages payable	<u>18 000</u>
	<u>209 000</u>		<u>97 000</u>
Noncurrent assets			Noncurrent liabilities
Land and building	300 000	Loans	<u>300 000</u>
Office equipment	<u>90 000</u>	Total liabilities	<u>397 000</u>
	390 000	Shareholders' equity	
		Share capital	200 000
		Retained profits*	<u>2 000</u>
		Total shareholders' equity	<u>202 000</u>
Total assets	<u>599 000</u>	Total liabilities and SE	<u>599 000</u>

*Retained profits = opening retained profits (0) + profit (2000) – dividends declared (0) = 2000

Reinforcing the relationship between three principal financial statements

Following is another example to work through. Work through this slowly to make sure you understand basic transaction analysis and how it impacts the three financial statements: income statement, balance sheet and statement of cash flows.

Assume all opening balances are zero.

- 1 Issue shares for cash, \$80 000.
- 2 Borrow cash from the bank, \$20 000.
- 3 Purchase inventory on credit, \$35 000.
- 4 Sell inventory (costing \$30 000) for \$70 000 on credit.
- 5 Pay accounts payable, \$20 000.
- 6 Receive \$40 000 from accounts receivable.
- 7 Pay rent, \$5000.
- 8 Pay wages of \$20 000 and owe \$4000 in wages at the end of the month.
- 9 Purchase equipment for cash, \$50 000.
- 10 Pay dividends of \$3000.

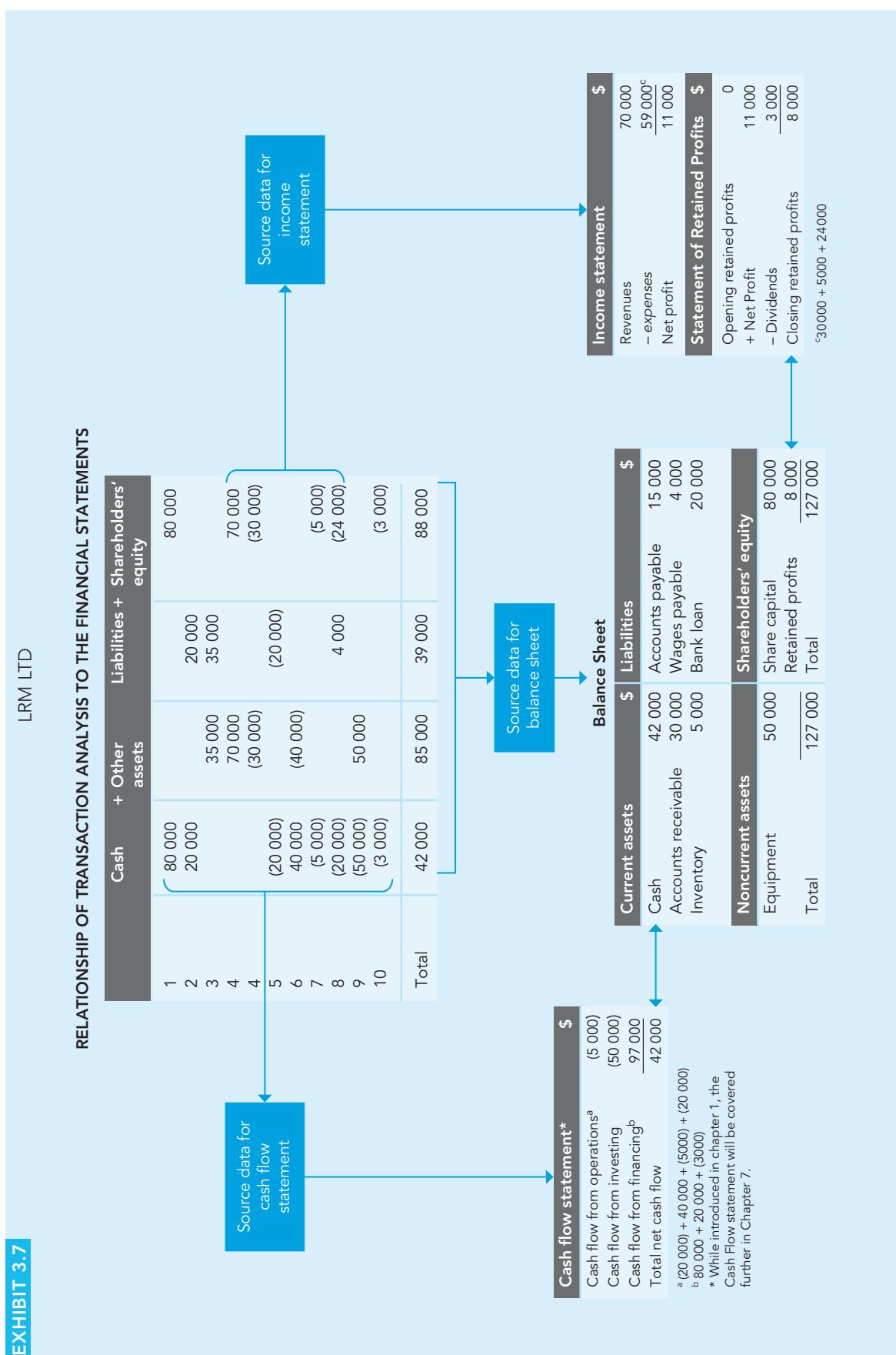
First, let's consider the full transaction analysis in Exhibit 3.6. Then in Exhibit 3.7 the headings have been condensed into Cash, Other Assets, Liabilities and Shareholders' equity to show how all this information is used to construct the balance sheet, income statement and the statement of cash flow. Take your time and follow through each transaction.

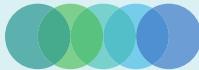
EXHIBIT 3.6

TRANSACTION ANALYSIS

Note that different companies can use different account names. For example in this analysis we have used 'wages payable'; however some companies may classify this as 'accrued expenses'. This will be explained further in Chapter 4. Notice that from Exhibit 3.6 we can obtain the balance of any asset, liability or equity account by adding to the opening balance any increase in the account and then deducting any decrease in the account. In this example there is no opening balance. For example:

Cash =	+80 000 + 20 000 + 40 000 - 20 000 - 5 000 - 50 000 - 30 000 = +42 000
Inventory =	+35 000 - 30 000 = +5000





HOW'S YOUR UNDERSTANDING?

- 3D What impact will each of the following have on profit for the period and total assets?
- (i) Purchase inventory on credit for \$20 000.
 - (ii) Sell goods on credit for \$30 000 (cost of goods sold was \$14 000).
 - (iii) Pay accounts payable of \$20 000.
 - (iv) Receive \$30 000 from accounts receivable.
 - (v) Pay \$10 000 for wages during the period, and owe \$2000 for other work done during this period that will not be paid to next period.
 - (vi) Issue share capital of \$50 000
 - (vii) Declare and pay dividends of \$5000



HOW'S YOUR UNDERSTANDING?

- 3E (i) At the end of 2021, Hinton Hats Ltd had retained profits of \$29 490. During 2022, it had revenue of \$112 350, general expenses of \$91 170, depreciation expense of \$6210 and income tax expense of \$3420. Dividends of \$5000 were declared during 2022. What was the balance of retained profits at the end of 2022?
(ii) If the company paid \$1200 cash for the rent on its shop for the last month of 2022, what would this event do to: assets, liabilities, profit for 2022, retained profits and equity?

In the previous material, you will have noticed that every transaction affects the accounting equation and that the equation balances both before and after each transaction is recorded. Exhibits 3.6 and 3.7 show that each transaction has an effect on at least one or both of the income statement and balance sheet. In addition, if the cash balance is affected, it will also be recorded in the cash flow statement.

One category of transactions includes those that affect the balance sheet only (e.g., purchase inventory on credit or for cash, acquire equipment on credit or for cash, borrow from the bank; repay a loan to the bank, issue share capital for cash).

Another type of transaction affects either revenue or expenses. If revenue is affected, an asset will be affected at the same time (e.g., credit sales increases sales revenue in the income statement and accounts receivable in the balance sheet; if it is a cash sale, then sales revenue increases in the income statement and cash increases in the balance sheet). Alternatively, in recording an expense, it will appear in the income statement and also impact the balance sheet (either a liability such as accounts payable increases or cash decreases).



HOW'S YOUR UNDERSTANDING?

- 3F The following transactions occurred for Marsh Ltd (assume all beginning balances = 0) during the year ended 31 December 2022.
- (a) Issued shares for \$50 000 cash.
 - (b) Purchased \$40 000 of inventory; paid \$15 000 cash with the remainder on account.
 - (c) Sold \$400 000 of products to customers on account; cost of goods sold was \$240 000.
 - (d) Collected \$120 000 cash from customers in point (c).
 - (e) Paid \$50 000 in wages to employees during the year; at year-end wages of \$8000 are owed to employees for work done in December 2022, to be paid in 2023.
 - (f) Earned \$10 000 interest on investments, receiving 70 per cent in cash.





- (g) Received an electricity bill in December 2022 for \$4000 covering electricity charges for December 2022. The bill will be paid in January 2023.
- (h) Paid \$20 000 cash for supplies received during 2022. At year-end \$7000 of supplies were still on hand (i.e., had not been used up).
- (i) Declared and paid \$10 000 in cash dividends to shareholders.

For each of the above transactions, events or facts, indicate the impact on revenues, expenses, assets and liabilities during 2022 by placing a + or - sign (+ for increase and - for decrease) to indicate direction in the appropriate box. Include dollar amounts. Write 'NE' if there is no effect.

	Revenues	Expenses	Assets	Liabilities
a				
b				
c				
d				
e				
f				
g				
h				
i				

3.3 Recording transactions: double-entry bookkeeping



FOR YOUR INTEREST

The following quote is an observation from an experienced practitioner concerning double entry:

I personally believe that if you can't understand the debits and credits of a client's business, you can't possibly understand where issues in their business or processes can occur. It is fundamental to being a good accountant, auditor or business advisor.

Fiona Campbell, Partner, Audit Services, Ernst & Young

The accounting equation discussed in section 3.2 is a useful technique for understanding how transactions can affect financial statements. However, it can be unmanageable when there are many accounts and a large number of transactions. A system of accounting involving debits and credits was invented centuries ago and is still used today.

LO2
LO3

One way to understand this double-entry system is to start with the balance sheet. As noted in the previous section, the statement balances (this is why it is called a balance sheet); that is, the dollar value of all the resources (assets) on the left is equal to the dollar value of all the sources (liabilities and shareholders' equity) on the right. If the balance sheet is to balance, every transaction and adjustment must also balance; that is, their effects on the two sides of the statement must be equal. To reinforce the earlier discussion on transaction analysis, consider the following:

- If a resource (asset) is increased,
 - a a source (liability or equity) must be increased by the same amount; or
 - b another resource decreased by the same amount; or
 - c there must be some mixture of source increases and other resource decreases that equals the original resource's increase.

For example, if the asset increased was inventory by \$200, (a) there could be an increase in accounts payable of \$200; (b) there could be a decrease in cash of \$200; and (c) there could be an increase in accounts payable of \$150 and a decrease in cash of \$50.

- Conversely, if a resource is decreased,
 - a a source must be decreased by the same amount; or
 - b another resource increased by the same amount; or
 - c some mixture of source increases/decreases and other resource increases that equals the original resource's decrease.

For example, if cash is the resource that decreases by \$500, (a) there could be a loan decreasing by \$500; (b) there could be equipment increasing by \$500; and (c) there could be equipment increasing by \$4500 and loan increasing by \$4000.

This is just arithmetic. Double entry is a form of algebraic notation, in which an equation (the accounting equation) must be maintained.

For reasons that are now largely lost in the mists of time, increases to resources (assets), are called debits, and increases to sources (liabilities and equity), are called credits. Perhaps confusingly, decreases to resources (assets) are also called credits, and decreases to sources (liabilities) are also called debits. Financial accounting uses only two names to cover the four kinds of effects, which will turn out to have some advantages as we learn more about the way accounting works.

Many students are initially confused by these terms, debits and credits. An analogy may assist. When you drive, you stop at red lights and go on green. This is a convention. If it had been set up the opposite way, the system would still work. However, changing the system now or doing the opposite has some disastrous effects. The same applies with debits and credits. They could have been set up the opposite way around, but they weren't.

Accounts will have a normal balance. Asset accounts have a normal balance of a debit and liabilities and shareholders' equity accounts will have a normal balance of a credit.

Consider the following summary:

Type of account	Normal balance	Increases result in	Decreases result in
Assets	Debit	Debit	Credit
Liabilities	Credit	Credit	Debit
Shareholders' equity	Credit	Credit	Debit

This can be expressed in terms of the accounting equation as follows:

Assets	=	Liabilities	+	Shareholders' equity
Debit to increase	Credit to decrease	Debit to decrease	Credit to increase	Debit to decrease Credit to increase

Every transaction, without exception, has two (or more) effects. One requires a debit entry and one requires a credit entry. The recording of increases to assets on the debit side and decreases on the credit side is the opposite to that of liabilities and shareholders' equity. It therefore provides the additional control on accuracy, in that the sum of the debit balances must equal the sum of the credit balances.

To understand this process, you need to be aware of some terms:

- Accounting records certain kinds of events measured in the country's currency (dollars in Australia). We will call those events *transactions*, a word used a few times already.

- Accounting's way of recording transactions is called the 'entry', and the method follows the double-entry record-keeping system described by Pacioli 500 years ago. Entries are summarised in records usually called journals, so they are also called *journal entries*.
- The entries are transferred to and summarised in accounts, which lie behind all the amounts and descriptions shown on the balance sheet. Each account has a numerical balance that is either a debit or a credit. All the accounts collected together are usually referred to as a *ledger*.
- As you know, it is important that all the accounts together produce a balanced balance sheet. Before preparing the balance sheet from the accounts, accountants usually make a list of the account balances from the ledger and make sure that the sum of all the debit balances equals the sum of all the credit balances. Because you never know for sure if it will work, this list is called the trial balance!
- Finally, the financial statements are prepared.

In this chapter, we concentrate on mastering journal entries and provide a simple spreadsheet method of maintaining account balances. The use of such tools as ledgers and trial balances is left to Chapter 5, when we describe the full accounting process.



FOR YOUR INTEREST

The exact way in which accounting or, more precisely, the record-keeping basis of accounting we call 'bookkeeping' evolved is a subject of debate among accounting historians. A major event, however, was the publication in 1494 of a treatise on 'double-entry' bookkeeping by Friar Pacioli of Venice. In the book, he referred to the method as an established procedure that had been in use in the Medici banks of Italy and in other businesses for some time. Pacioli's book was an important contribution to the knowledge of algebra and arithmetic, and of value specifically because of its detailed description and codification of the double-entry system. It was rapidly translated into all the major European languages and, using these translations, European scholars extended Pacioli's ideas.

Pacioli's concepts were revolutionary but sound: they form the fundamental basis of modern financial accounting, providing a method of pulling together all the lists of resources and obligations in a way that helps to prevent errors. The idea is that each trade or other commercial transaction is recorded (entered) twice, hence the descriptor 'double-entry'. Entries are recorded:

- 1 once to recognise the resource involved in the transaction
- 2 once to recognise the source or effect of that resource change.

Instead of the disconnected lists that existed before double-entry bookkeeping was invented, the lists of resources and sources were now connected to each other. Now a balance sheet of the modern kind could be prepared.

If a dollar amount (or an amount in any other medium of exchange – pounds, francs, yen and so on) can be assigned to each transaction, that amount can be used to record both the resources and sources sides of each. Then, by adding up all the resources amounts and all the sources amounts, the two sides act as a check on each other. If errors are made, they are likely to be found because the two sides will not add up to the same amount. If they do add up, we say they 'balance'. Hence, the 'balance sheet', which shows that the two sides do add up. The record-keeping system Pacioli described to the world is one of the most far-reaching of human inventions.

Two simple examples of double entry

EXAMPLE 1: PURCHASING, ON CREDIT, GOODS FOR RESALE

- The resource (an asset) is an addition to the organisation's inventory (unsold products).
- The source (a liability) is that an obligation is created to pay the supplier.

If the goods cost, say, \$452, we have:

- a debit of \$452: an addition to the account for the resource, in this case the inventory of unsold products
- a credit of \$452: an addition to the account for the source, in this case the obligation to the supplier, usually called accounts payable.

The balance sheet stays in balance because of this double entry, because both resources and sources are increased by \$452:

Resources	Sources
Increased (debit) \$452	Increased (credit) \$452
Assets increase by \$452	Liabilities increase by \$452 (no change in equity)

Let's also say this transaction occurred on 1 March 2022. This transaction would be recorded as follows:

		\$	\$
1 Mar 2022	DR Inventory	452	
	CR Accounts payable		452

The transaction recorded is a journal entry. When recording a journal entry there are a couple of guidelines to note:

- the date should be entered first
- it is traditional to list the debits first, followed by the credits
- it is customary to abbreviate debit to DR and credit to CR
- often the credit accounts and amounts will be indented.

A journal entry may consist of one debit and one credit as in the example shown; however, we will work through some more complicated examples later on where there may be a number of debits or credits. One important rule to remember is that for every journal entry:

the sum of the debits must equal the sum of the credits.

EXAMPLE 2: BORROWING MONEY FROM THE BANK ON A LONG-TERM LOAN

- The resource (an asset) is an addition to the amount of cash on hand.
- The source (a liability) is that an obligation is created to repay the bank.

If the borrowed cash is, say, \$1000, we have:

- an addition to the asset 'cash', so total resources increase by \$1000
- an addition to the liability 'long-term bank loan', so the total sources also increase by \$1000.

Again, the balance sheet stays in balance:

Resources	Sources
Increase (debit) \$1000	Increase (credit) \$1000
Assets increase by \$1000	Liabilities increase by \$1000 (no change in equity)

Let's also say this transaction occurred on 30 March 2022. This transaction would be recorded as follows:

		\$	\$
30 Mar 19	DR Cash	1 000	
	CR Bank loan		1 000

SUMMARY

These are simple examples, but they illustrate several features of the bookkeeping system. (For hundreds of years, accounting records were kept in bound books. In spite of the advent of computers, 'books' are still used by many organisations, as we will see.) Some features illustrated by the examples include the following:

- Each double-entry record names one (or more) accounts that are debited, and one (or more) that are credited. Accounts contain all the transaction records and any adjustments, and therefore reflect everything recorded in the system. The cash account, for example, lists all transactions and adjustments that have affected cash. Accounts are used directly in preparing the balance sheet and the income statement.
- The double-entry records shown in the example are called journal entries. A journal entry can list as many accounts as are needed to record the transaction, but for each journal entry, *the sum of the debits must equal the sum of the credits*. If not, the accounting equation will not be maintained (the 'books' will not balance).



HOW'S YOUR UNDERSTANDING?

- 3G** (i) What are the effects on the balance sheet of the following transaction? Whatzis Ltd received \$5000 cash from a shareholder in return for \$5000 in newly issued shares. The company also borrowed \$15 000 from the bank to be paid back at the end of three years.
- (ii) What is the journal entry to record the following transaction, in which Whatzis used the cash from the shareholder? The company bought a truck, which cost \$89 000, by paying \$20 000 in cash and financing (borrowing) the rest from the bank.

3.4 More about accounts

The balance sheet and the income statement are prepared from the underlying accounts, which have been recorded using the double-entry system so that the sum of the dollars in all the debit accounts equals the sum in all the credit accounts. But what is an account, exactly? Here's a working definition: *an account is a record of the dollar amounts comprising a particular asset, liability, equity, revenue or expense*. The net effect of these amounts is a debit or credit, and is called the account's balance.

LO5

Below are some examples of how account balances are calculated. Modern computerised accounting systems can produce accounts in various formats thought to be useful, but they all use the arithmetic illustrated.

- If the organisation's cash began at \$500 and there was a receipt of \$400 and one of \$750, and a payment of \$300 and one of \$525, the cash asset account would show a balance of \$825 (a debit because there is a positive balance in this asset account).

$$\text{Cash} = \$500\text{DR} + \$400\text{DR} + \$750\text{DR} - \$300\text{CR} - \$525\text{CR} = \$825\text{DR}$$

- If share capital began at \$1000 and more shares were sold for \$400 (which, let's say, caused the cash receipt discussed), the share capital equity account would show a balance of \$1400 (a credit because there is a positive balance in this equity account).

$$\text{Share capital} = \$1000\text{CR} + \$400\text{CR} = \$1400\text{CR}$$

- If amounts owing to trade creditors began at \$950 and a creditor was paid \$300 (the first payment shown previously), the accounts payable liability account would show a balance of \$650 (a credit because there is a positive balance in this liability account).

$$\text{Accounts payable} = \$950\text{CR} - \$300\text{DR} = \$650\text{CR}$$

- If a cash collection from a customer was made for \$750 (the second cash receipt discussed), the accounts receivable account, with a balance of, say, \$2000 before the collection, would reduce by an amount of \$750 (a credit because this reduces the accounts receivable asset, which has been transformed into cash through the collection transaction).

$$\text{Accounts receivable} = \$2000\text{DR} - \$750\text{CR} = \$1250\text{DR}$$

- If a \$525 cash payment (the second cash payment discussed) was made on the company's bank loan, a liability account with a name like 'bank loan' would be debited with this payment. Suppose the loan had a balance of \$15 000 before the payment. The account balance would then be calculated to show the deduction of the payment.

$$\text{Bank loan} = \$15\ 000\text{CR} - \$525\text{DR} = \$14\ 475\text{CR}$$



HOW'S YOUR UNDERSTANDING?

- 3H** (i) Garf Ltd had accounts receivable at the beginning of the year of \$5290. During the year, it had revenue from sales on credit of \$39 620 and collected \$41 080 from its customers. What was the balance of accounts receivable at the end of the year?
- (ii) Garf Ltd's net profit for this year was \$2940, and it declared \$900 in dividends to its shareholders during the year. Retained profits were \$7410 at the beginning of the year. What is the balance of retained profits account at the end of the year?

3.5 Debits and credits extended

LO2 In section 3.3, you saw how entries and accounts were used to record events as transactions in the double-entry accounting system. In this section we will extend the debit/credit rules to revenue and expense items and other transactions that impact shareholders' equity.

To help you understand the entries, remember that to increase a shareholders' equity account you will credit that account and to decrease shareholders' equity you will debit the account.

Revenues and expenses

You will also recall that a change in profit will impact retained profits, a shareholders' equity account. An increase in revenue will increase profit and therefore shareholders' equity so the normal balance for revenue accounts is a credit. When a revenue account increases you will credit the account. An expense will decrease profit (and therefore shareholders' equity) so the normal balance for an expense account is a debit. When an expense is incurred you will debit the expense account.

Dividends and share issues

Declaring a dividend decreases retained profits. When dividends are declared, they are deducted from retained profits. Therefore, there will be a debit to retained profits because this too reduces shareholders' equity. Again note that dividends are a distribution of profits, not an expense.

Finally, when shares are issued, share capital is increased and therefore this will result in a credit to share capital.

Summary

All this produces the following table of double-entry accounting's debits and credits:

Debits	Credits
Increases in assets	Decreases in assets
Decreases in liabilities	Increases in liabilities
Decreases in equity:	Increases in equity:
Dividends declared	Issued capital
Expenses	Revenues

For completeness, the summary provided in section 3.3 is extended as shown:

Type of account	Normal balance	Increases result in	Decreases result in
Assets	Debit	Debit	Credit
Liabilities	Credit	Credit	Debit
Share capital	Credit	Credit	Debit
Retained profits	Credit	Credit	Debit
Revenues	Credit	Credit	Debit
Expenses	Debit	Debit	Credit

Again to demonstrate this, the accounting equation can be rewritten as follows:

Assets	=	Liabilities	+	Shareholders' equity
Debit to increase	Credit to decrease	Debit to decrease	Credit to increase	Debit to decrease

The revenue and expense accounts can thus be shown as:

Revenue	Expenses
Debit to decrease	Credit to increase

3.6 Arranging accounts on the balance sheet

In the balance sheets provided to you earlier in the book you saw that accounts were organised into the statement's main categories: current assets, noncurrent assets, current liabilities, noncurrent liabilities and shareholders' equity. This was done because the arrangement of accounts is meant to convey information beyond the account balances themselves. The placement of each account tells the reader of the balance sheet what kind of account it is: a short-term asset or a long-term one; a short-term liability or a long-term one; or an equity. This enables the calculation of meaningful ratios and other analyses. The balance sheet is said to be classified, because accounts are classified into meaningful categories. This means that the accountant preparing the balance sheet has to look into an account with a title like 'bank loan', for example, and determine whether it should be included in current liabilities or noncurrent liabilities. Also, certain liabilities related to employee obligations can be classified as either current or noncurrent, depending on when the employees are expected to receive these benefits (i.e. whether it is within the next year or not). Moving items around within the balance sheet (or within other financial statements) is called reclassification, and is done by accountants whenever it is thought to improve the informativeness of the financial statement.

LO5

Three examples of account classification

CURRENT AND NONCURRENT PORTIONS OF NONCURRENT LIABILITIES

Many noncurrent liabilities, such as mortgages and bonds, require regular payments, so although most of the debt is noncurrent, not all of it is. Accountants therefore reclassify the amount to be paid on the principal of the debt within the next year into current liabilities, and show only the residual (due more than a year away) as noncurrent. Any interest owing but not yet paid would be treated as a separate liability; if it is due to be paid within the year it is a current liability.

For example, let's say a company has a loan of \$80 000 and is expected to repay the bank \$10 000 (excluding interest) within the next year. Then the company would have a current liability of \$10 000 and a noncurrent liability of \$70 000 on the balance sheet.

Also, while accounts payable is normally a current liability (payable within one year), if some accounts are not payable within the next year then accounts payable will also be listed under noncurrent liabilities.

BANK OVERDRAFTS

Suppose a company has a bank overdraft of \$500, which means that its cash-in-bank asset is negative (the bank has allowed the company to remove \$500 more cash from the account than there was in it, in effect lending the company the \$500).

For bank overdrafts, it is customary to move the negative bank amount to the other side of the balance sheet. Even if the company normally has cash in the bank so that the account is normally an asset, the account is a liability at this point because the bank has, in effect, lent the company \$500 and will want the money back. In this case you would see a bank overdraft listed as a current liability.

NEGATIVE AMOUNTS LEFT AS DEDUCTIONS

Some negative amounts are left as deductions, not moved to the other side to make them positive as was done with the overdraft. Accumulated depreciation is an important example of a negative-balance account. In practice, this is often called a contra asset and is discussed further in Chapter 4. It is the amount of all the depreciation calculated to date on assets such as buildings and equipment. For accumulated depreciation, there are at least two appropriate ways of presenting the information, all of which maintain the balance sheet equation:

- 1 It could be disclosed separately as a deduction on the asset side of the balance sheet, as is used in the CappuMania balance sheet in Appendix 3.1. This is sometimes used, but if there are a lot of different kinds of assets and depreciation amounts, it can make the balance sheet a little cluttered.
- 2 It could be deducted from the assets' cost, and just the net book value could be disclosed on the balance sheet, so that accumulated depreciation is not mentioned on the face of the statement. This method, which is most common, would be accompanied by a note to the financial statements, listing the cost and accumulated depreciation amounts separately, so keeping the balance sheet uncluttered and allowing some additional explanations of the figures if that were thought useful. This approach can be seen in the Sound and Light balance sheet in Chapter 2.



HOW'S YOUR UNDERSTANDING?

- 3I Prepare the asset side of a balance sheet for Mike's Tyre Repair Ltd from the following amounts: cash on hand \$90, accounts receivable \$640, inventory \$210, equipment cost \$890 and accumulated depreciation on equipment \$470.

3.7 Journal entries

LO4 You will discover further in Chapter 10 that the accounting process is reasonably mechanical once you have created your journal entries. Creating journal entries is critical to your general understanding of accounting. The better you understand this (and the earlier sections that gave you the knowledge to do this section), the easier you will find the rest of the course. A few extra hours on this material will save you many more hours later in this subject and subsequent subjects.

Let's go back to the LRM example from sections 3.1 and 3.2 and prepare the journal entries. The 14 transactions are repeated here for convenience.

- 1 Shareholders invest \$200 000 cash in the business.
- 2 Land and building is purchased for \$300 000, which is financed by a loan from the seller repayable in five years.
- 3 Inventory worth \$50 000 is bought on account.
- 4 Equipment worth \$90 000 is purchased by paying \$20 000 cash and signing an agreement to pay the remainder in 90 days.
- 5 Damaged inventory that was purchased on credit at a cost of \$5000 was returned to the supplier.
- 6 \$30 000 is paid on accounts payable.

- 7 \$10 000 of inventory is purchased using cash.
- 8 Cash sales of \$30 000 were made. The cost of the goods that were sold amounted to \$12 000.
- 9 Credit sales of \$40 000 were made. The cost of goods sold was \$16 000.
- 10 Payments of \$8000 were made to suppliers.
- 11 Paid wages of \$20 000 for the first two weeks of April.
- 12 Received an advertising invoice for \$2000 for a radio advertisement broadcast on 5 April. The bill will be paid next month.
- 13 Received \$25 000 from accounts receivable.
- 14 At the end of the month, \$18 000 is owing in wages for the last two weeks of the month. It is due to be paid on 1 May.

Below are the relevant journal entries and the reasons for the debit and credit entries. Before looking at these journal entries, try to do them yourself. If you are not getting them correct, go back to sections 3.1 and 3.2 for further detail on how the transactions affect the specific accounts.

JOURNAL ENTRIES FOR LRM LTD

			\$	\$
1	DR	Cash	200 000	
	CR	Share capital		200 000
		<i>Cash (asset) increases; share capital (shareholders' equity) increases</i>		
2	DR	Land and buildings	300 000	
	CR	Long-term loan		300 000
		<i>Land and buildings (asset) increases; long-term loan (liability) increases</i>		
3	DR	Inventory	50 000	
	CR	Accounts payable		50 000
		<i>Inventory (asset) increases; accounts payable (liability) increases</i>		
4	DR	Equipment	90 000	
	CR	Cash		20 000
	CR	Notes payable		70 000
		<i>Equipment (asset) increases; cash (asset) decreases; notes payable (liability) increases</i>		
5	DR	Accounts payable	5 000	
	CR	Inventory		5 000
		<i>Accounts payable (liability) decreases; inventory (asset) decreases</i>		
6	DR	Accounts payable	30 000	
	CR	Cash		30 000
		<i>Accounts payable (liability) decreases; cash (asset) decreases</i>		
7	DR	Inventory	10 000	
	CR	Cash		10 000
		<i>Inventory (asset) increases; cash (asset) decreases</i>		
8	DR	Cash	30 000	
	CR	Sales revenue		30 000
	DR	Cost of goods sold		12 000
	CR	Inventory		12 000
		<i>Cash (asset) increases; sales revenue (revenue) increases; COGS (expense) increases; inventory (asset) decreases</i>		

>>

<<	9	DR	Accounts receivable	40 000
		CR	Sales revenue	40 000
		DR	Cost of goods sold	16 000
		CR	Inventory	16 000
<i>Accounts receivable (asset) increases; sales revenue (revenue) increases; COGS (expense) increases; inventory (asset) decreases</i>				
	10	DR	Accounts payable	8 000
		CR	Cash	8 000
		<i>Accounts payable (liability) decreases; cash (asset) decreases</i>		
	11	DR	Wages expense	20 000
		CR	Cash	20 000
		<i>Wages expense (expense) increases; cash (asset) decreases</i>		
	12	DR	Advertising expense	2 000
		CR	Accounts payable	2 000
		<i>Advertising expense (expense) increases; accounts payable (liability) increases</i>		
	13	DR	Cash	25 000
		CR	Accounts receivable	25 000
		<i>Cash (asset) increases; accounts receivable (asset) decreases</i>		
	14	DR	Wages expense	18 000
		CR	Wages payable	18 000
		<i>Wages expense (expense) increases; wages payable (liability) increases</i>		

In Chapter 10, we will illustrate ledger accounts which are the common way of accumulating all information related to each account. At this point, you could calculate the balance of an account in this example by adding to the opening balance all the increases and deducting the decreases. For example: Accounts payable = +50 000 – 5000 – 30 000 – 8000 + 2000 = +9000.



HOW'S YOUR UNDERSTANDING?

- 3J** Which of the following transactions would increase or decrease profit in June?
- (i) Credit sales of \$500 in June with cash received in August.
 - (ii) Received \$300 cash in June from accounts receivable at the end of May.
 - (iii) Received an electricity bill in June for \$160 which relates to electricity used in June; the bill will be paid in July).

3.8 Cash versus accrual accounting revisited

LO6 In Chapter 1 you learnt that the predominant method of accounting is called accrual accounting. It is used by all large businesses, and in the last three decades has also been used by public sector organisations and not-for-profit organisations. Under an accrual accounting system, the impact of transactions is recognised in the period when revenues and expenses occur – which may or may not be the same period in which the cash is

received. For example, a cash sale of \$1000 would increase both sales revenue and cash (increase cash; increase sales revenue). However, a credit sale of \$1000 in May with cash collected in July would increase sales revenue in May (increase accounts receivable; increase sales revenue), but not increase cash until July. When the money is received in July, cash would increase but it would have no impact on revenue (increase cash; decrease accounts receivable).

Figure 3.1 summarises the way accrual financial accounting information is assembled, and gives examples.

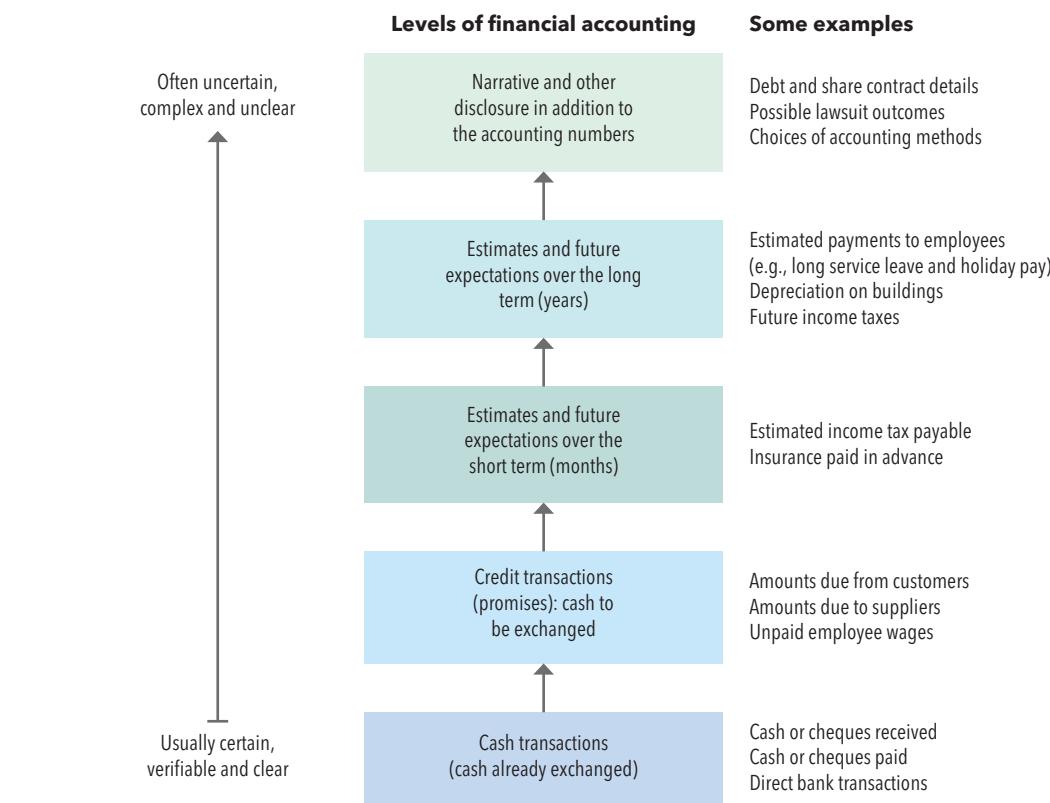


FIGURE 3.1 Levels of accrual accounting

- The foundation is cash transactions, which even the simplest accounting records include.
- Most accounting systems also include credit transactions, because most organisations extend credit to customers and/or use credit from their suppliers and employees.
- Short-term and long-term adjustments are needed in preparing financial statements, including estimates of both long-term and short-term nature described in Figure 3.1.
- Extensive narrative and supplementary disclosures (especially the notes to the financial statements) are made, sometimes using many more pages than the statements themselves do.

The result is that accrual accounting is a very complex information system, and it will take the rest of this book to introduce you to it properly. However, now that you have covered transaction analysis, it should start to become easier to follow.

So let's review some key points about accrual accounting.

- Revenue is recognised in the period in which the good is delivered or the service is provided. Revenue can be recorded regardless of when cash is received.
- Cash can be received in the same period as revenue is recognised (e.g. cash sales).
- Revenue can be recognised in one period, and the cash is not received until the following period (e.g. credit sales).

- Cash can be received in one period, but the service is not provided until a later period and, therefore, revenue will not be recognised until the later period (e.g. customer pays a deposit on services to be provided in a later period).
- Expenses are recognised in the period in which the expense is incurred. Again this is regardless of when cash is paid. For example, if an employee works 10 days in a month and the wage rate is \$200 a day, the expense is \$2000 for the month. This is regardless of whether all or part of the \$2000 is paid in this month, a future month or a previous month.



HOW'S YOUR UNDERSTANDING?

3K Fred started his delivery business a few years ago. This year, he collected \$47 000 from his customers and paid \$21 000 in expenses. At the beginning of this year, his customers owed \$3500 and he owed his suppliers \$700. At the end of this year, his customers owe him \$3200; he owes his suppliers \$1450; and his truck depreciation for the year was \$4600. Using just this information:

- What was the increase in cash during the year?
- What is this year's accrual profit?



FOR YOUR INTEREST

You may be interested in the evolving demand for financial statements over the last few centuries.

Various pieces of companies' legislation were introduced in Britain in the 1830s, 1840s and 1850s. This legislation allowed companies to sell shares in stock markets (which – because the initial issuing of shares provides capital, that is, equity funds for the companies – are also called capital markets). The legislation also characterised a major feature of companies: liability of the company's owners to the company's creditors was, and still is, limited to the amount of the owners' unpaid capital in the company. The justification for the limited liability feature was that individual investors could not always be aware of the actions of the directors they elected or the managers who were, in turn, engaged by the directors. Therefore, investors should not be liable for any more than the amount of money they invested in the enterprise. But no investors would want to lose even that, so as capital markets developed, the demand for information about the corporations involved grew.

An important legal issue is the sharing of profits. The problem of how to ensure the fair calculation and sharing of ownership interests led legislators to require that a corporation present its balance sheet annually to its shareholders and that an auditor be present to report to the shareholders on the validity of that financial statement.

As businesses grew in size and complexity, the demand for information on financial performance increased. The static picture presented by the balance sheet was not good enough for the emerging stock markets, for the increasingly large group of non-owner professional managers, or for governments that wished to evaluate (and tax!) businesses' performance (to mention just a few of the groups interested in evaluating performance). The profit and loss statement has come into its own as a central part of financial reporting in the last 100 plus years, and its measurement of financial performance is central to economic activity and performance evaluation in most of the world. Today this profit figure is a key determinant of the salaries paid to executives.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Transaction analysis and preparation of financial statements

Flashy Fashions Ltd is a small company in a coastal town. It rents its premises and its sales are all on credit. It has only three expenses: cost of goods sold, rent and income tax.

At the end of its previous financial year, 30 September 2021, Flashy's balance sheet was as follows:

FLASHY FASHIONS LTD
BALANCE SHEET AS AT 30 SEPTEMBER 2021

Assets	\$	Liabilities and shareholders' equity	\$
Current assets		Current liabilities	
Cash	800	Accounts payable	600
Accounts receivable	400	Rent payable	700
Inventory	900		
		Shareholders' equity	
		Share capital	300
		Retained profits	500
Total assets	2 100	Total liabilities and shareholders' equity	2 100

During the year ended 30 September 2022, the following information was recorded in the company's accounts.

- a Revenue from credit sales \$10 000.
- b Collections from customers \$9600.
- c Purchases on credit of inventory for sale \$6100.
- d Payments to suppliers \$6300.
- e Cost of goods sold \$6400.
- f Rent charged by the landlord \$2400.
- g Rent paid to the landlord \$2900 (decreasing the liability).
- h Income tax payable for the year \$350.
- i Cash dividends declared and paid to shareholders \$450.

Required:

- 1 Prepare transaction analysis for each of the items a–i.
- 2 Prepare an income statement and a balance sheet.

PRACTICE PROBLEM B

Complete the expanded accounting equation

Calculate the missing figure in each of the following situations:

	Current assets	Noncurrent assets	Current liabilities	Noncurrent liabilities	Share capital	Opening retained profits	Revenue	Expense	Dividend
1	50 000	200 000	25 000	50 000	?	5 000	25 000	15 000	0
2	150 000	600 000	75 000	150 000	450 000	30 000	150 000	?	0
3	150 000	600 000	75 000	150 000	450 000	120 000	135 000	?	0
4	?	250 000	25 000	50 000	250 000	50 000	45 000	30 000	0

PRACTICE PROBLEM C

Transaction analysis and journal entries

The summarised balance sheet for Newcombe Ltd as at 31 May 2022 is as shown.

Assets	\$	Liabilities and shareholders' equity	\$
Cash	90 000	Accounts payable	110 000
Accounts receivable	106 000	Long-term loan	240 000
Inventory	118 000	Share capital	200 000
Prepayments	45 000	Retained profits	84 000
Equipment	400 000		
Accumulated depreciation	(125 000)		
	634 000		

The following transactions occur during June:

- a Received \$23 000 from accounts receivable.
- b Additional shares worth \$80 000 are issued.
- c Inventory (costing \$32 000) is sold on credit for \$76 000.
- d Recognition of \$4000 of depreciation expense.
- e Of the loan, \$60 000 is repaid.
- f Administrative expenses of \$7000 are paid.
- g A total of \$9000 of prepayments are used up.
- h Payment of wages of \$13 000.
- i Purchase of \$28 000 worth of inventory for cash.
- j Dividends of \$6000 are paid.
- k Payment of \$36 000 of accounts payable.

Required:

- 1 Show the effect of each of the transactions a–k on the accounting equation.
- 2 Prepare an income statement for the month of June and a balance sheet for Newcombe Ltd at 30 June 2022.
- 3 For each of the transactions, what is the effect on net profit, total assets, total liabilities and shareholders' equity? Write 'increase', 'decrease' or 'no effect' for each transaction.
- 4 Prepare journal entries for each of the 11 transactions discussed.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 If an asset increases, list what else may have happened to the accounting equation.
- 2 Which of the following is not possible?
 - a One liability increases and another liability increases.
 - b Shareholders' equity increases and liabilities decrease.
 - c Assets increase and liabilities decrease.
- 3 Why does an increase in revenues result in an increase in shareholders' equity? What other part of the accounting equation is likely to be affected?
- 4 Why does an increase in expenses result in a decrease in shareholders' equity? What other part of the accounting equation is likely to be affected?
- 5 Give three examples of an asset that could decrease when an expense is increased.
- 6 Which accounts normally have a debit balance and which normally have a credit balance?
- 7 Explain how the balance sheet and the income statement relate to each other.
- 8 List some of the larger expenses you would expect to see in the income statements for the following organisations:
 - a Woolworths
 - b Commonwealth Bank
 - c Qantas
 - d A large charity such as the Salvation Army.
- 9 Provide an example of a transaction that:
 - a impacts the balance sheet and the income statement but does not impact the cash flow statement
 - b affects all three of the key financial statements
 - c only affects the balance sheet.

PROBLEMS

PROBLEM 3.1

Transactions impacting balance sheet accounts

Provide an example of a transaction where:

- 1 one asset increases and another asset decreases
- 2 an asset increases and a liability increases
- 3 an asset increases and shareholders' equity increases
- 4 shareholders' equity increases and liabilities decrease
- 5 an asset decreases and a liability decreases
- 6 one liability increases and another liability decreases
- 7 an asset decreases and shareholders' equity decreases.

PROBLEM 3.2

Transactions impacting balance sheet and income statement accounts

Provide illustrations of the following transactions relating to a local retailer:

- 1 One asset is exchanged for another.
- 2 An asset and a liability increase by the same amount.
- 3 An asset and revenue increase by the same amount.
- 4 One liability is exchanged for another.
- 5 An asset and a liability are reduced by the same amount.
- 6 A liability and an expense are increased by the same amount.
- 7 An asset and shareholders' equity are increased by the same amount.
- 8 An asset is reduced and an expense is increased by the same amount.

PROBLEM 3.3

Effect of transactions

KINGSFORD LTD
BALANCE SHEET AS AT 30 JUNE 2021

	\$		\$
Assets		Liabilities	
Current assets		Current liabilities	
Cash	34 000	Accounts payable	35 000
Accounts receivable	72 000	Tax payable	17 000
Inventory	94 000		
		Shareholders' Equity	
		Share capital	80 000
		Retained profits	<u>68 000</u>
	<u>200 000</u>		200 000

During the year ended 30 June 2022, the following information was recorded in the company's accounts:

- 1 issued \$500 000 in share capital
- 2 credit sales \$400 000 (COGS \$80 000)
- 3 cash sales \$12 000 (COGS \$3000)
- 4 collections from accounts receivable \$300 000
- 5 purchases of inventory on credit \$140 000
- 6 payments of accounts payable \$100 000
- 7 wages expense \$180 000, not yet paid
- 8 wages paid \$44 000 (reduce wages payable)
- 9 paid tax payable \$12 000
- 10 cash dividends of \$40 000 declared and paid
- 11 received \$20 000 cash deposit from a customer for work to be done in the next accounting period

12 borrow \$150 000 from the bank (ignore interest).

- a What is the separate effect of each of the transactions on revenues, expenses, assets and liabilities. Put increase, decrease or no effect in each box below. Include dollar amounts.

	Revenues	Expenses	Assets	Liabilities
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

- b Calculate the balance of each of the following accounts:
- accounts receivable
 - inventory
 - accounts payable
 - tax payable.

PROBLEM 3.4

Complete the expanded accounting equation

Calculate the missing figure in each of the following situations:

	Current assets	Noncurrent assets	Current liabilities	Noncurrent liabilities	Share capital	Opening retained profits	Revenue	Expenses	Dividends
1	100 000	400 000	50 000	100 000	?	10 000	50 000	30 000	0
2	100 000	400 000	50 000	100 000	300 000	20 000	100 000	?	0
3	100 000	400 000	50 000	100 000	300 000	80 000	90 000	?	0
4	?	500 000	50 000	100 000	500 000	100 000	90 000	60 000	0
5	100 000	400 000	50 000	100 000	300 000	20 000	100 000	50 000	?
6	100 000	500 000	50 000	100 000	300 000	?	100 000	50 000	20 000

PROBLEM 3.5

Ascertain the unknowns in the accounting equation

Find the unknowns for Racer Ltd given the following information:

	\$m		\$m
Assets 1 July 2021	600	Assets 30 June 2022	?
Liabilities 1 July 2021	?	Liabilities 30 June 2022	300
Share capital 1 July 2021	180	Share capital 30 June 2022	190
Retained profits 1 July 2021	200	Retained profits 30 June 2022	?
Revenues for the year	950		
Expenses for the year	800		
Dividends	50		

PROBLEM 3.6

Transaction analysis – revenue and expenses

LM started business on 1 July 2022, and had the following transactions on 1 July:

- a Issued 500 000 shares of \$2 for \$1 million cash.
- b Bought \$50 000 worth of inventory on credit.
- c Bought equipment for \$300 000, paying cash. The equipment has a 10-year life.
- d Paid \$6000 for a year's rent on a building.
- e Took out a four-year \$120 000 bank loan at an interest rate of 5 per cent per annum. The interest is not payable until the end of the loan.

Between 1 July and 31 December, the following transactions occurred:

- f Sold inventory that cost \$45 000 for \$110 000. All sales were on credit.
- g Paid \$30 000 to suppliers of inventory for the credit purchases in point (b).
- h Collected \$65 000 from customers.
- i Paid salaries of \$18 000.
- j Received \$7700 for a job to be completed in February 2023.

On 31 December:

- k Salaries of \$4000 were owing to staff.
- l Owed \$5000 by the bank for interest.

Required:

For the period 1 July to 31 December 2022:

- 1 List all revenues (including dollar amounts) that will appear in the income statement.
- 2 List all expenses (including dollar amounts) that will appear in the income statement.

PROBLEM 3.7

Identifying account titles

Listed are some independent hypothetical situations.

- 1 A company borrows \$200 000 from the local bank and signs a six-month note for the loan.
- 2 A company purchases 400 ordinary shares of Woolworths Limited for \$15 000.
- 3 A company purchases a block of land for \$400 000 cash. An appraiser for the buyer valued the land at \$485 000.
- 4 A company buys three mobile phones for office use, for which it signs a note promising to pay \$1500 within six months.
- 5 A company signs a lease agreement for a warehouse; the rent is \$15 000 per month. Upon signing the document, the retailer pays \$45 000 to the owner of the building (assume no security deposit).
- 6 A company purchases a new delivery truck for \$63 000 cash that has a list price of \$71 000.

- 7 A company acquires a patent on a new digital technology, paying \$300 000 cash and signing a \$600 000 note payable due in two years.

Indicate the appropriate account titles, if any, affected by each of the events described. Answer in terms of changes in account balances (increase/decrease). Include the dollar amount.

PROBLEM 3.8

Identifying account titles

Listed are some transactions for a retailer.

- 1 The company orders 20 display stands for \$400 each, to be delivered next month.
- 2 The company repays \$4000 principal on its loan (ignore interest).
- 3 The company sells 100 000 shares for \$12 per share to investors.
- 4 The company signs a contract for construction of a new residential building for \$2 million and pays \$50 000 as the initial payment for construction.
- 5 The company hires a new CFO. The CFO's remuneration package includes salary of \$300 000 per annum plus superannuation. The CFO starts work in two months' time.
- 6 The company purchases a well-established brand name for \$170 000 cash.

Indicate the appropriate account titles, if any, affected by each of the events described. Answer in terms of changes in account balances (increase/decrease). Include the dollar amount.

PROBLEM 3.9

Normal balances of accounts

What would be the normal balance (DR or CR) for each of the following account titles?

- 1 Accounts receivable
- 2 Accounts payable
- 3 Inventory
- 4 Provision for employee entitlements
- 5 Taxes payable
- 6 Retained profits
- 7 Share capital
- 8 Investments
- 9 Plant and equipment
- 10 Accrued expenses
- 11 Prepayments

PROBLEM 3.10

Transaction analysis

The following transactions pertain to Rosewall Ltd for November 2021.

- 1 The company was incorporated, with shareholders investing \$250 000 in cash.
- 2 Purchased \$43 000 worth of inventory on credit.
- 3 Rent of \$8000 was paid.
- 4 Made credit sales of \$110 000 (COGS was \$45 000).
- 5 Received the \$2000 bill for an advertising campaign to promote the new company. This amount will be paid in December.
- 6 Inventory was purchased for \$27 000 cash.
- 7 Paid \$30 000 of accounts payable.
- 8 Wages of \$24 000 were paid (wages expense).
- 9 Received \$45 000 from accounts receivable.
- 10 Sales commission was paid at the rate of 1 per cent of total monthly sales.

- 11 Purchased new machinery at a cost of \$9000. Of this, \$4000 was paid in cash with the remainder to be paid in 15 months' time.
- 12 Owed employees \$3500 in wages at the end of November.
- 13 Depreciation on the new equipment equalled \$1000.
- 14 Interest of \$6000 is owed by the bank at the end of November. It will be received in January 2022.
- 15 Received \$8000 from a client. Services to the client will be provided in December.
- 16 Several investors sold \$20 000 of their shares to other investors.

Show the effect of each of the transactions on the accounting equation.

PROBLEM 3.11

Account classification and DR/CR rules

Peanut Limited is an agricultural company. The following are accounts from a balance sheet for the year ended 30 June 2023 of Peanut Limited.

- 1 Property, plant and equipment
- 2 Interest-bearing liabilities (long-term)
- 3 Inventories
- 4 Retained profits
- 5 Cash and cash equivalents
- 6 Provisions (long-term)
- 7 Current tax liabilities
- 8 Trade and other receivables
- 9 Intangible assets
- 10 Trade and other payables (short-term)
- 11 Machinery
- 12 Share capital.

For each account, indicate how it normally should be categorised on a classified balance sheet. Also show whether the account normally has a debit (DR) or credit balance (CR).

PROBLEM 3.12

Prepare simple journal entries

Prepare journal entries for the following transactions in December 2022.

- 1 Borrowed \$80 000 cash from the bank with an agreement to pay back the loan in 4 years with interest of 10 per cent per annum.
- 2 Purchased inventory costing \$64 000 with cash.
- 3 Purchased additional inventory costing \$30 000 on credit.
- 4 Received a \$16 000 deposit on a rental property to be rented for the month of January 2023.
- 5 Sold inventory costing \$16 000 to customers for \$29 000 on account.
- 6 Received \$11 000 from a customer in question 5.
- 7 Paid \$10 000 owing to a supplier.

PROBLEM 3.13

Complete transaction analysis and prepare financial statements

The following transactions occurred for the month of November 2022 for Hoad Ltd:

- a The company was incorporated, with shareholders investing \$200 000 in cash.
- b Purchased inventory for cash, \$20 000.
- c Paid \$4000 for a month's rent on the premises.
- d Purchased inventory on credit, \$30 000.
- e Received an advertising bill for a newspaper advertisement to promote the new company. The \$1000 bill will be paid in December.

- f Inventory with a cost of \$40 000 was sold on credit for \$90 000.
- g Paid \$25 000 of accounts payable.
- h Received \$30 000 from accounts receivable.
- i Paid wages of \$15 000.
- j Paid sales commission at the rate of 1 per cent on sales made during the month.
- k Purchased a new computer for \$6000; paid \$3000 in cash and \$3000 to be paid in 15 months time.
- l Owed employees \$2000 in wages at the end of the month.

Required:

- 1 Show the effect of each of the transactions on the accounting equation.
- 2 Prepare an income statement and a balance sheet at 30 November 2022.
- 3 Prepare journal entries for each transaction and determine the balance for each account.
- 4 For each transaction a to l, what is the effect on net profit and total assets? Write 'increase', 'decrease' or 'no effect' for each transaction.

PROBLEM 3.14

Prepare journal entries and a balance sheet from simple transactions

North Shore Manufacturing Ltd had this balance sheet:

BALANCE SHEET AS AT 30 JUNE 2022

Assets	\$	Liabilities and shareholders' equity	\$
Current assets		Current liabilities	
Cash	20 000	Accounts payable	80 000
Accounts receivable	70 000	Taxes payable	20 000
Inventories	<u>110 000</u>	Wages payable	<u>10 000</u>
	200 000		110 000
Noncurrent assets		Noncurrent liabilities	
Land	200 000	Long-term loan	200 000
Plant and equipment	400 000	Provision for employee entitlements	<u>100 000</u>
Accum. depreciation	(100 000)		300 000
	500 000	Shareholders' equity	
		Share capital	200 000
		Retained profits	<u>90 000</u>
	<u>700 000</u>		<u>290 000</u>
			700 000

During July 2022, North Shore Manufacturing experienced the following transactions:

- a An amount of \$8000 of accounts payable was paid.
- b A customer paid one of the accounts receivable, \$13 280.
- c Additional inventory costing \$8000 was purchased on credit.
- d The company issued new shares for \$50 000 cash.
- e The proceeds of the share issue were used to reduce the long-term loan.
- f More land costing \$54 000 was purchased for \$14 000 cash plus a new long-term loan for the rest.
- g More equipment costing \$33 900 was purchased on credit, with \$13 900 due in two months and the remainder as a long-term loan.

Required:

- 1 Prepare journal entries for each transaction.
- 2 Prepare a new balance sheet for the company as at 31 July 2022.

PROBLEM 3.15*Complete transaction analysis and show effect on net profit/total assets*

A summarised balance sheet for Roche Ltd at 31 August 2022 was as follows:

Assets	\$	Liabilities and shareholders' equity	\$
Cash	110 000	Accounts payable	210 000
Accounts receivable	410 000	Long-term loan	310 000
Inventory	610 000	Share capital	910 000
Prepayments	80 000	Retained profits	250 000
Equipment	610 000		
Accumulated depreciation	<u>(140 000)</u>		
	<u>1 680 000</u>		<u>1 680 000</u>

The following transactions occurred during September:

- a Paid \$100 000 of accounts payable.
- b Received \$300 000 from accounts receivable.
- c Purchased inventory on credit for \$200 000.
- d Made credit sales of \$700 000 (COGS was \$450 000).
- e Administrative expenses of \$30 000 were paid in cash.
- f Depreciation of \$10 000 was recognised.
- g Prepayments of \$10 000 expired during the month.
- h Dividends of \$20 000 were declared and paid.
- i Paid back \$100 000 on the loan.
- j Issued additional shares worth \$500 000.
- k Paid the wages bill of \$50 000.

Required:

- 1 Show the effect of the transactions on the accounting equation using a transaction analysis table.
- 2 Prepare journal entries for each transaction and determine the balances of the accounts.
- 3 What is the effect on net profit and total assets? Write 'increase', 'decrease' or 'no effect' for each transaction and include dollar amounts.

PROBLEM 3.16*Identify debit and credit balances, and prepare a balance sheet*

BML Products Ltd manufactures and sells children's toys. Here are the company's balance sheet accounts as at 30 June 2022, in alphabetical order.

	\$		\$
Accumulated depreciation	63 700	Owing from customers	6 200
Bank account balance	14 300	Owing to suppliers	21 900
Bank loan	21 200	Retained earnings	47 500
Building	102 100	Share capital issued	25 000
Cash on hand	2 500	Short-term part of mortgage	8 000
Employees' tax not yet remitted	600	Unpaid employee wages	1 800
Fixtures and equipment	37 900	Unsold finished products	29 600
Land	48 000	Unused office supplies	1 400
Long-term part of mortgage owing	71 000	Unused product raw materials	18 700

Required:

- 1 Decide which accounts have debit balances and which have credit balances. According to the company's accounting system, total debits = total credits = \$260 700.
- 2 Based on your answer to question 1, prepare the company's 30 June 2022 balance sheet from the accounts provided.
- 3 Rewrite the balance sheet using account titles that you are more likely to see in actual financial statements.
- 4 Comment briefly on the company's financial condition, as shown by the balance sheet.

PROBLEM 3.17

Explain and write entries for changes in account balances

Here are some account changes that have occurred to Rose Ltd. For each of the items, write in a few words what would have caused the changes and write a journal entry to account for them.

- 1 Accounts receivable up \$50 000; service revenue up \$50 000.
- 2 Wages expense up \$2000; cash down \$10 000; wages payable down \$8000.
- 3 Accounts payable up \$4000, inventory up \$4000.
- 4 Cash down \$6000, loan down \$6000.
- 5 Cash up \$500, revenue received in advance up \$500.
- 6 Auditing expense up \$3000, accounts payable up \$2400, cash down \$600.
- 7 Equipment up \$5200, share capital up \$5200.
- 8 Cash up \$2400, accounts receivable up \$6600, revenue up \$9000, inventory down \$4800, COGS expense up \$4800.

PROBLEM 3.18

Prepare journal entries

**DRAGONS LTD
BALANCE SHEET AS AT 30 JUNE 2021**

Assets	\$	Liabilities and shareholders' equity	\$
Current assets		Current liabilities	
Cash	14 000	Accounts payable	12 000
Accounts receivable	36 000	Tax payable	6 000
Inventory	42 000		
		Shareholders' equity	
		Share capital	40 000
		Retained profits	<u>34 000</u>
	<u>92 000</u>		<u>92 000</u>

During the year ended 30 June 2022, the following information was recorded in the company's accounts:

- 1 Credit sales, \$200 000.
- 2 Cash sales, \$6000.
- 3 Collections from customers, \$150 000.
- 4 Purchases of inventory on credit, \$70 000.
- 5 Payments of accounts payable, \$50 000.
- 6 Cost of goods sold, \$80 000.
- 7 Wages expense, \$90 000, not yet paid.
- 8 Wages paid, \$22 000.
- 9 Paid tax payable, \$6000.
- 10 Cash dividends of \$20 000, declared and paid.

Required:

Prepare journal entries, an income statement for the year ended 30 June 2022 and a balance sheet as at 30 June 2022.

PROBLEM 3.19

Prepare a statement of retained profits

The accounts for Australian RST Limited for 30 June 2022 included the following (in alphabetical order):

	\$000
Dividends declared & paid	51 444 DR
Income tax expense	571 DR
Operating profit before tax	58 884 CR
Retained profits, beginning of year	35 697 CR

Prepare a statement showing closing retained profits.

PROBLEM 3.20

Calculate profit and prepare a statement of retained profits

The accounts for Katherine Ltd for last year included the following (in alphabetical order):

	\$
Dividends declared & paid	75 000 DR
Income tax expense	210 250 DR
Miscellaneous revenue from investments	7 950 CR
Operating expenses	2 403 170 DR
Retained profits, beginning of year	260 090 CR
Revenue from sales	3 519 400 CR

Calculate net profit, and prepare a note to show the change in retained profits for the year.

PROBLEM 3.21

Cash balance and accrual accounting profit

Using the following information for David Tours, calculate:

- 1 the cash in bank as at the end of 2022
- 2 the 2022 accrual accounting profit.

	\$
Owing from customers as at the end of 2021 (collected in 2022)	1 000
Owing from customers as at the end of 2022 (collected in 2023)	850
Cash collected from customers during 2022 for 2022 trips	68 990
Payable to suppliers as at the end of 2021 (paid in 2022)	1 480
Cash paid to suppliers during 2022 for 2022 expenses	36 910
Payable to suppliers as at the end of 2022 (payable in 2023)	2 650
Depreciation on equipment during 2022	3 740
Cash in bank as at the end of 2021	12 430

PROBLEM 3.22

Reconciliation of cash profit and accrual profit

Goose Services Company had a cash profit for its first year in business of \$75 200 and an accrual profit of \$60 330. Show how the two amounts reconcile, using the following information:

- 1 Expenses for the next year, paid already, totalled \$5100.
- 2 Unpaid bills for expenses at the end of the year totalled \$26 180.
- 3 Uncollected revenue at the end of the year was \$21 750.
- 4 Depreciation on the company's equipment was \$15 540 for the year.

PROBLEM 3.23

Calculate accrual profit and change in cash

'I just don't understand it!' Barry had received his accountant's calculation of his business profit, showing an accrual profit for his first year in business of \$45 290. 'If I made so much money, why don't I have it in the bank? My bank account shows only \$15 040 on hand!'

Barry operates Barry Supply, which provides stationery and office supplies to business customers. He has no store, just a small rented warehouse, and only one employee. Here are the data that Barry and his accountant used. Explain clearly to Barry:

- 1 How the accountant calculated the \$45 290 profit.
- 2 Why there is only \$15 040 cash on hand.

	\$
Collected from customers during the year	143 710
Still owing from customers at the end of the year (collected next year)	15 220
Paid for products to resell and for other expenses, including wages, during the year	128 670
Owing for products and other expenses at the end of the year (paid next year)	9 040
Cost of unsold products on hand at the end of the year (all sold next year)	26 070
Depreciation on equipment during the year	2 000

PROBLEM 3.24

Prepare financial statements from accounts

	\$		\$
Salaries expense	71 000 DR	Dividends declared	11 000 DR
Income tax payable	2 800 CR	Accumulated depreciation	94 000 CR
Land	63 000 DR	Cash at bank	18 000 DR
Employee benefits expense	13 100 DR	Income tax expense	6 900 DR
Tax deductions payable	5 400 CR	Credit sales revenue	346 200 CR
Accounts receivable	16 400 DR	Inventory on hand	68 000 DR
Cash sales revenue	21 600 CR	Prepaid insurance	2 400 DR
Dividends payable	5 500 CR	Beginning retained profits	92 800 CR
Depreciation expense	26 700 DR	Accounts payable	41 000 CR
Cost of goods sold	161 600 DR	Interest revenue	1 700 CR
Insurance expense	11 200 DR	Building	243 000 DR
Share capital	200 000 CR	Trucks and equipment	182 500 DR
Office expenses	31 100 DR	Salaries payable	4 100 CR
Mortgage payable	114 000 CR	Miscellaneous expenses	8 200 DR
Bank loan owing	21 800 CR	Interest expense	16 800 DR

- 1 Look at the list of accounts (in no particular order) of Geewhiz Productions at 30 November 2021 and decide which ones are income statement accounts.
- 2 Calculate net profit based on your answer to question 1.
- 3 Calculate ending retained profits based on your answer to question 2.
- 4 Prepare the following financial statements, demonstrating that your answers to questions 2 and 3 are correct.
 - a Income statement for the year ended 30 November 2021.
 - b A note calculating retained profits for the year ended on that date.
 - c Balance sheet at 30 November 2021.
- 5 Comment briefly on what the financial statements show about the company's performance for 2021 and its financial position at 30 November 2021.

PROBLEM 3.25

Profit and loss smoothing and ethics

Income (profit) smoothing is a way of manipulating a company's net profit in order to create a desired impression of management's capability and performance. Other kinds of profit manipulation by management have also been alleged. Do you think it is ethical for management to manipulate the figures by which its performance is measured? Why or why not?

CASES

CASE 3A	Woolworths Limited
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Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 What period is covered by the income statement?
- 2 List the main types of revenues.
- 3 List some of the larger expenses incurred in earning revenue.
- 4 What are interest expense and interest revenue for the year?
- 5 What is cost of goods sold for the year?
- 6 What is total depreciation and amortisation for the year?
- 7 Explain the change in retained profits from 2020 to 2021.
- 8 What is income tax expense for the year?
- 9 What are the basic earnings per share for 2021?
- 10 What would be the normal balance (DR or CR) of each of the following accounts included in the Woolworths Limited balance sheet or the relevant notes: trade debtors, inventory, investments, land and buildings, advances to employees, trade creditors, provision for income tax, provision for dividends and retained profits?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

- 3A** (i) Cash at bank (an asset) increases and accounts receivable (an asset) decreases.
(ii) Inventory (an asset) increases and accounts payable (a liability) increases.
(iii) No, because neither transaction affected revenues or expenses.
- 3B** (i) An asset (cash) will decrease by \$300 and there will be an electricity expense of \$300 which will decrease shareholders' equity.
(ii) One asset (inventory) will decrease by \$20 000 while another asset (accounts receivable) will increase by \$30 000 resulting in an overall increase in assets of \$10 000. An expense (COGS) will increase by \$20 000 and a revenue (sales) will increase by \$30 000 resulting in an increase in net profit of \$10 000 and therefore an increase in shareholders' equity of \$10 000.
(iii) An asset (cash) will decrease and a liability (wages payable) will decrease.
- 3C** Decrease by \$300; increase by \$10 000; no effect.
- 3D** (i) No effect; increase \$20 000
(ii) \$16 000; increase \$16 000 (increase accounts receivable \$30 000, decrease inventory \$14 000)
(iii) No effect; decrease \$20 000
(iv) No effect; no effect
(v) \$12 000; decrease \$10 000
(vi) No effect; increase \$50 000
(vii) No effect; decrease \$5000
- 3E** (i) \$36 040 (\$29 490 + \$112 350 – \$91 170 – \$6210 – \$3420 – \$5000)
(ii) Cash is decreased by \$1200 and an expense of \$1200 has been incurred; therefore assets decrease by \$1200; no effect on liabilities; profit and therefore retained profits and equity are all decreased by \$1200.

3F

	Revenues	Expenses	Assets	Liabilities
a	NE	NE	+50 000	NE
b	NE	NE	+25 000	+25 000
c	+400 000	+240 000	+160 000	NE
d	NE	NE	NE	NE
e	NE	+58 000	-50 000	+8 000
f	+10 000	NE	+10 000	NE
g	NE	+4 000	NE	+4 000
h	NE	+13 000	-13 000	NE
i	NE	NE	-10 000	NE

- 3G** (i) Cash increases by \$20 000, share capital increases by \$5000 and long-term loan increases by \$15 000. The result is total increase to assets \$20 000, and total increase in liabilities and shareholders' equity of \$20 000.

(ii) DR Truck \$89 000
CR Cash \$20 000
CR Loan \$69 000

The result is a net total increase to assets of \$69 000 and total increase to liabilities of \$69 000.

- 3H** (i) \$3830 (remember accounts receivable go up via credit sales and down by receipts from accounts receivable).
(ii) \$9450 (remember retained profits go up when there is a profit but go down when a dividend is declared because it is a distribution of profit to shareholders).

3I

	\$	\$
Current assets		
Cash at bank	90	
Accounts receivable	640	
Inventory	<u>210</u>	
	940	
Noncurrent assets		
Equipment*	890	
Accumulated depreciation*	<u>(470)</u>	<u>420</u>
Total assets	<u>1 360</u>	

*Note you could have shown this as Equipment (net) 420

3J (i) Increases profit.

(ii) Does not impact profit (i.e. increases cash, decreases accounts receivable).

(iii) Decreases profit.

3K (i) Cash increased by \$26 000 (\$47 000 cash receipts – \$21 000 cash payments).

(ii) Accrual profit is \$20 350 (revenue of \$47 000 – \$3500 + \$3200 = \$46 700; expenses of \$21 000 – \$700 + \$1450 + \$4600 = \$26 350).

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

1

	Cash	Assets			= Liabilities			+ Shareholders' equity		
		Accounts receivable	Inventory	Accounts payable	Rent payable	Tax payable	Share capital	Retained profits	Revenue	Expenses
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
OB	+800	+400	+900	+600	+700		+300	+500		
a		+10 000							+10 000	
b	+9 600	-9 600								
c			+6 100	+6 100						
d	-6 300			-6 300						
e			-6 400						-6 400	
f					+2 400				-2 400	
g	-2 900				-2 900					
h						+350			-350	
i	<u>-450</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>-450</u>	<u> </u>	<u> </u>
CB	+750	+800	+600	+400	+200	+350	+300	+50	+10 000	-9 150

NB. Increases in expenses have been entered as minus figures.

2

**FLASHY FASHIONS LTD
INCOME STATEMENT FOR THE YEAR ENDED 30 SEPTEMBER 2022**

	\$
Sales	10 000
<i>Less Cost of goods sold</i>	<u>6 400</u>
Gross profit	3 600
<i>Less Operating expenses</i>	
Rent	<u>2 400</u>
Profit before tax	1 200
<i>Less Tax expense</i>	<u>350</u>
Net profit	850

**FLASHY FASHIONS LTD
BALANCE SHEET AS AT 30 SEPTEMBER 2022**

	\$		\$
Current assets		Current liabilities	
Cash	750	Accounts payable	400
Accounts receivable	800	Tax payable	350
Inventory	600	Rent payable	200
		Shareholders' equity	
		Share capital	300
		Retained profits	<u>900</u>
Total assets	<u>2 150</u>	Total liabilities and shareholders' equity	<u>2 150</u>

PRACTICE PROBLEM B

- 1 \$160 000
- 2 \$105 000
- 3 \$180 000
- 4 \$140 000

PRACTICE PROBLEM C

1	Assets =						Shareholders' equity						
	Cash	Accounts receivable	Inventory	Prepayments	Equipment	Accumulated depreciation	Accounts payable	Loan	Share capital	Retained profits	Revenues	Expenses	Dividends
	+90 000	+106 000	+118 000	+45 000	+400 000	-125 000	+110 000	+240 000	+200 000	+84 000			
a	+23 000	-23 000											
b	+80 000								+80 000				
c		+76 000	-32 000										
d				-4 000									
e	-60 000								-60 000				
f	-7 000										-7 000		
g						-9 000					-9 000		
h	-13 000											-13 000	
i	-28 000				+28 000								-6 000
j	-6 000												
k	-36 000												
	+43 000	+159 000	+114 000	+36 000	+400 000	-129 000	+74 000	+180 000	+280 000	+84 000	+76 000	-65 000	-6 000

PRACTICE PROBLEM C (cont'd)

2

NEWCOMBE LTD
INCOME STATEMENT FOR THE MONTH ENDED 30 JUNE 2022

	\$	\$
Sales		76 000
Cost of goods sold		(32 000)
Gross profit		44 000
Operating expenses		
Wages	13 000	
Prepaid expenses	9 000	
Administrative	7 000	
Depreciation	<u>4 000</u>	<u>(33 000)</u>
Net profit		<u>11 000</u>

NEWCOMBE LTD
STATEMENT OF RETAINED PROFITS FOR THE MONTH ENDED 30 JUNE 2022

	\$
Opening retained profits	84 000
Add net profit for the month	<u>11 000</u>
	95 000
Less dividends declared	<u>(6 000)</u>
Closing retained profits	<u>89 000</u>

NEWCOMBE LTD
BALANCE SHEET AS AT 30 JUNE 2022

	\$	\$	
Current assets		Current liabilities	
Cash	43 000	Accounts payable	74 000
Accounts receivable	159 000		
Inventory	114 000		
Prepayments	<u>36 000</u>		
	352 000		254 000
Noncurrent assets		Noncurrent liabilities	
Equipment	400 000	Long-term loan	180 000
Accumulated depreciation	<u>(129 000)</u>		
	<u>271 000</u>		369 000
Total assets	<u>623 000</u>	Shareholders' equity	
		Share capital	280 000
		Retained profits	<u>89 000</u>
			369 000
		Total liabilities and equity	<u>623 000</u>

3

	Net profit	Total assets	Total liabilities	Shareholders' equity
a	No effect	No effect	No effect	No effect
b	No effect	Increase	No effect	Increase
c	Increase	Increase	No effect	Increase
d	Decrease	Decrease	No effect	Decrease
e	No effect	Decrease	Decrease	No effect
f	Decrease	Decrease	No effect	Decrease
g	Decrease	Decrease	No effect	Decrease
h	Decrease	Decrease	No effect	Decrease
i	No effect	No effect	No effect	No effect
j	No effect	Decrease	No effect	Decrease
k	No effect	Decrease	Decrease	No effect

NB: If net profit increases it increases retained profits and therefore shareholders' equity increases.

4

			\$	\$
a	DR	Cash	23 000	
	CR	Accounts receivable		23 000
b	DR	Cash	80 000	
	CR	Share capital		80 000
c	DR	Cost of goods sold	32 000	
	CR	Inventory		32 000
	DR	Accounts receivable	76 000	
	CR	Sales revenue		76 000
d	DR	Depreciation expense	4 000	
	CR	Accumulated depreciation		4 000
e	DR	Long-term loan	60 000	
	CR	Cash		60 000
f	DR	Administrative expense	7 000	
	CR	Cash		7 000
g	DR	Expenses	9 000	
	CR	Prepayments		9 000
h	DR	Wages	13 000	
	CR	Cash		13 000
i	DR	Inventory	28 000	
	CR	Cash		28 000
j	DR	Retained profits	6 000	
	CR	Cash		6 000
k	DR	Accounts payable	36 000	
	CR	Cash		36 000



APPENDIX TO CHAPTER 3

Examples of how debits and credits work

Let's consider an example: CappuMania Ltd, a small company that operates a coffee shop on the ground floor of an office building. Exhibit A3.1 shows the company's balance sheet at the end of June 2021. **LO3**

EXHIBIT A3.1		CAPPUMANIA LTD	
BALANCE SHEET AS AT 30 JUNE 2021			
Assets	\$	Liabilities and shareholders' equity	\$
Current assets		Current liabilities	
Cash	4 000	Accounts payable	1 200
Inventory of unsold food	800	Taxes payable	600
Inventory of supplies	<u>1 900</u>	Total current liabilities	<u>1 800</u>
	<u>6 700</u>		
Noncurrent assets		Noncurrent liabilities	
Equipment	9 000	Loan	5 000
Accumulated depreciation	(1 500)	Total liabilities	<u>6 800</u>
	7 500		
	<u> </u>	Shareholders' equity	
		Share capital	3 000
		Retained profits	4 400
		Total shareholders' equity	<u>7 400</u>
Total assets	<u>14 200</u>	Total liabilities and shareholders' equity	<u>14 200</u>

Now let's see how the following four transactions, all happening on 1 July 2021 are recorded using accounting's double-entry method:

- 1 CappuMania pays \$500 of its taxes owing.
- 2 CappuMania buys \$450 more supplies, paying \$100 cash and owing the rest.
- 3 A shareholder is given more shares in return for personally paying \$1100 on the equipment loan.
- 4 CappuMania buys a new coffee machine for \$200 cash.

Let's look at the entries.

- 1 Resource effect: Cash is reduced. Cash is an asset, so a decrease in an asset would be a credit.
Source effect: Tax liability is reduced. A liability is reduced, so the effect would be a debit.
Entry:

			\$	\$
1 July 2021	DR	Taxes payable (liability)	500	
	CR	Cash (asset)		500

Double-entry method: There is both a debit and a credit and the two amounts are the same.

Note that in the journal entries given in this example the terms asset, liability and equity have been included in brackets for learning purposes. This would not normally be included in a journal entry.

- 2 Resource effects: Inventory is increased by \$450. It is an asset, and an increase in assets is a debit. Cash is decreased by \$100 so this is a credit. Note that there are two different inventory accounts as seen in CappuMania's balance sheet. This question referred to the purchase of supplies so the inventory of supplies account is the account affected.

Source effect: The liability to suppliers is increased by \$350. An increase in a liability results in a credit.

Entry:

		\$	\$
1 July 2021	DR	Inventory of supplies (asset)	450
	CR	Cash (asset)	100
	CR	Accounts payable (liability)	350

Double-entry method: There are both debits and credits, and the sum of the debits equals the sum of the credits. Remember an entry can have any number of debits and credits as long as the sum of each are equal. Note that this debit entry could have been achieved by two entries:

		\$	\$
1 July 2021	DR	Inventory of supplies (asset)	100
	CR	Cash (asset)	100
	DR	Inventory of supplies (asset)	350
	CR	Accounts payable (liability)	350

- 3 Resource effect: None.

Source effects: The equipment loan, a liability, is decreased \$1100, so this is a debit. The share capital, an equity, is increased \$1100, so this is a credit.

Entry:

		\$	\$
1 July 2021	DR	Loan (liability)	1100
	CR	Share capital (equity)	1100

Double-entry method: This transaction affects only the sources side of the balance sheet, but the statement stays in balance because one account increases and another decreases.

- 4 Resource effects: Equipment, an asset, is increased \$200, so this is a debit. Cash is decreased \$200, which is a credit as in transactions 1 and 2.

Source effect: None.

Entry:

		\$	\$
1 July 2021	DR	Equipment (asset)	200
	CR	Cash (asset)	200

Double-entry method: This transaction also affects only one side of the balance sheet – this time, the assets side – but again the balanced entry keeps the balance sheet in balance.

These journal entries form part of the accounting cycle, which records accounting transactions. The sequences of procedures by which these transactions enter the financial statements are discussed in Chapter 5. For an illustration of how a journal entry affects the balance sheet, these entries are recorded here by adding them to, or subtracting them from, the previous (30 June) balances in the accounts. This is done in Exhibit A3.2, using a spreadsheet. Arbitrarily, the debits are recorded as positive and the credits as negative. This does not mean debits are good and credits are bad! It is simply an accounting convention.

You can see from the spreadsheet that at 30 June the total of adding all the debits and subtracting all the credits is zero. The transaction entries are in balance because the sum of the debits equals the sum of the credits. The 1 July debit balances also equal the credit balances.

EXHIBIT A3.2**CAPPUMANIA LTD****EXAMPLE IN SPREADSHEET FORM**

A	B	C	D	E	F
	30 June 2021				1 July 2021
4	Balance	Transactions*			Balance
5	Debit or credit	Debits	Credits	Debit or credit	
1					
2					
3	30 June 2021				
4	Balance	Transactions*			Balance
5	Debit or credit	Debits	Credits	Debit or credit	
6					
7	Cash	+4 000	(1) -500		+3 200
8			(2) -100		
9			(4) -200		
10	Inventory of unsold food	+800			+800
11	Inventory of supplies	+1 900	(2) +450		+2 350
12	Equipment	+9 000	(4) +200		+9 200
13	Accumulated depreciation	-1 500			-1 500
14	Accounts payable	-1 200		(2) -350	-1 550
15	Taxes payable	-600	(1) +500		-100
16	Loan	-5 000	(3) +1 100		-3 900
17	Share capital	-3 000		(3) -1 100	-4 100
18	Retained profits	-4 400			-4 400
19					
20	Total	0	+2 250	-2 250	0

*The numbers in brackets have been added to the spreadsheet printout to refer to the events and transactions described in the text.

It would be unlikely that another balance sheet would be prepared, just one day after the 30 June one, but to complete the example, let's see how the debit balances would also equal the credit balances, after recording the four transactions (see Exhibit A3.3).

EXHIBIT A3.3CAPPUMANIA LTD
BALANCE SHEET AS AT 1 JULY 2021

Assets	\$	Liabilities and shareholders' equity	\$
Current assets			Current liabilities
Cash	3 200	Accounts payable	1 550
Inventory of unsold food	800	Taxes payable	<u>100</u>
Inventory of supplies	<u>2 350</u>		1 650
	<u>6 350</u>		
Noncurrent assets			Noncurrent liabilities
Equipment	9 200	Loan	<u>3 900</u>
Accumulated depreciation	<u>(1 500)</u>		<u>5 550</u>
	7 700		
	<u>—</u>		
Total assets	14 050	Shareholders' equity	
		Share capital	4 100
		Retained profits	<u>4 400</u>
			<u>8 500</u>
		Total shareholders' equity	8 500
		Total liabilities and shareholders' equity	14 050

**HOW'S YOUR UNDERSTANDING?**

- 3L Following on from the CappuMania example, suppose that on 1 July 2021 a fifth transaction had occurred: CappuMania repaid \$800 on its loan to the bank.
- What would the journal entry be for this transaction?
 - What would the following revised figures have been on the 1 July 2021 balance sheet: cash, current assets, total assets, total liabilities and shareholders' equity?

Example

Let's now expand the CappuMania example to bring in revenue and expense accounts to see how these are recorded using accounting's double-entry method.

To keep the example uncluttered, we group all the company's activities for the year ended 30 June 2022 into the following summary list.

- Revenue for 2022 was \$89 740. The coffee bar does mostly cash business, so of this, \$85 250 was in cash and the rest was on credit.
- General expenses for 2022 not including depreciation or income tax, totalled \$67 230. Most of the expenses were on credit, for coffee supplies and so on, so of this, only \$2120 was in cash.
- At the end of the year, it turned out that unsold food on hand cost \$550 and supplies on hand (mainly paper cups and plastic spoons) cost \$1740. Therefore, the food inventory account has to be reduced by \$250 (\$800 – \$550) and the supplies inventory account has to be reduced by \$610 (\$2350 – \$1740). Using up these inventories is part of the cost of earning revenue, so these reductions will be included in the company's general expenses. We could have described these expenses here as a COGS expense and put them as a separate expense category.
- Depreciation expense for the year was \$2380.
- The company's income tax expense for 2022 was estimated as \$4460. (This is an estimate because, until the income tax authorities issue a formal assessment of tax, the company does not know for sure what its tax will be for the year.)
- The company's board of directors declared a dividend of \$1000.

Cash inflows and outflows by 30 June 2022 not already mentioned:

- 7 Collections of the revenue on credit totalled \$3330.
- 8 Payments to suppliers totalled \$59 420.
- 9 The company paid \$3000 towards its income tax.
- 10 Only \$800 of the dividend had been paid.

Here are the journal entries for the 10 items discussed:

			\$	\$
1	DR	Cash (assets increased)	85 250	
	DR	Accounts receivable (assets increased)	4 490	
	CR	Revenue (equity increased)		89 740
		<i>Sales for cash and credit</i>		
2	DR	General expenses (equity decreased)	67 230	
	CR	Cash (assets decreased)	2 120	
	CR	Accounts payable (liabilities increased)		65 110
		<i>General expenses</i>		
3	DR	General expenses (equity decreased)	250	
	CR	Inventory of unsold food (assets decreased)		250
	DR	General expenses (equity decreased)	610	
	CR	Inventory of supplies (assets decreased)		610
		<i>Using up of inventories</i>		
4	DR	Depreciation expense (equity decreased)	2 380	
	CR	Accumulated depreciation (assets decreased)		2 380
		<i>Depreciation of equipment</i>		
5	DR	Income tax expense (equity decreased)	4 460	
	CR	Taxes payable (liabilities increased)		4 460
		<i>Estimated income tax expense</i>		
6	DR	Retained profits (equity decreased)	1 000	
	CR	Dividend payable (liabilities increased)		1 000
		<i>Dividend declared</i>		
7	DR	Cash (assets increased)	3 330	
	CR	Accounts receivable (assets decreased)		3 330
		<i>Collections of accounts receivable</i>		
8	DR	Accounts payable (liabilities decreased)	59 420	
	CR	Cash (assets decreased)		59 420
		<i>Payments of accounts payable</i>		
9	DR	Taxes payable (liabilities decreased)	3 000	
	CR	Cash (assets decreased)		3 000
		<i>Payments towards income tax</i>		
10	DR	Dividend payable (liabilities decreased)	800	
	CR	Cash (assets decreased)		800
		<i>Payment towards dividend</i>		

We can enter these 10 entries into the company's accounts, using the spreadsheet approach discussed in this Appendix. The resulting spreadsheet is shown in Exhibit A3.4. Note that the 1 July 2021 figures, which are what we ended up with in Exhibit A3.2, are now in the first column, as the starting figures. Some new accounts (such as accounts receivable and revenue) are needed to record the entries: the titles of these are shown in italics.

EXHIBIT A3.4

CAPPUMANIA LTD

EXAMPLE IN SPREADSHEET FORM (CONTINUED FROM EXHIBIT A3.2)

A	B	C	D	E	F
		1 July 2021		30 June 2022	
		Balance	Events and transactions*	Trial balance	
		Debit or credit	Debit	Credit	Debit or credit
1					
2					
3		1 July 2021		30 June 2022	
4		Balance	Events and transactions*	Trial balance	
5		Debit or credit	Debit	Credit	Debit or credit
6					
7	Cash	+3 200	(1) +85 250	(2) -2 120	+26 440
8			(7) +3 330	(8) -59 420	
9				(9) -3 000	
10				(10) -800	
11	Accounts receivable	0	(1) +4 490	(7) -3 330	+1 160
12	Inventory of unsold food	+800		(3) -250	+550
13	Inventory of supplies	+2 350		(3) -610	+1 740
14	Equipment	+9 200			+9 200
15	Accumulated depreciation	-1 500		(4) -2 380	-3 880
16	Accounts payable	-1 550	(8) +59 420	(2) -65 110	-7 240
17	Taxes payable	-100	(9) +3 000	(5) -4 460	-1 560
18	<i>Dividend payable</i>	0	(10) +800	(6) -1 000	-200
19	Loan	-3 900			-3 900
20	Share capital	-4 100			-4 100
21	Retained profits	-4 400	(6) +1 000		-3 400
22	<i>Revenue</i>	0		(1) -89 740	-89 740
23	<i>General expenses</i>	0	(2) +67 230		+68 090
24			(3) +250		
25			(3) +610		
26	<i>Depreciation expense</i>	0	(4) +2 380		+2 380
27	<i>Income tax expense</i>	0	(5) +4 460		+4 460
28					
29	Totals	0	+232 220	-232 220	0

* The numbers in brackets have been added to the spreadsheet printout to refer to the 10 events and transactions described in the text.

You can see that everything is still in balance. The sums of the debits and credits in the 10 entries are \$232 220, and the 30 June 2022 accounts add up to zero (remember that, arbitrarily, debits are shown as positive amounts and credits as negative ones).

To highlight the calculation of profit from the expanded set of accounts, a second version of the spreadsheet is shown in Exhibit A3.5. It is the same as in Exhibit A3.4, except that the balance sheet accounts and the profit and loss accounts (part of the income statement) are now separately subtotalled. You will see that profit (the difference between the revenue and expense accounts) equals \$14 810. It is a credit,

EXHIBIT A3.5

CAPPUMANIA LTD

EXAMPLE IN SPREADSHEET FORM (CONTINUED) (WITH SUBTOTALS TO SHOW PROFIT CALCULATION)

A	B	C	D	E	F
		1 July 2021		30 June 2022	
		Trial balance	Events and transactions	Balance	
		Debit or credit	Debit	Credit	Debit or credit
39					
40					
41		1 July 2021		30 June 2022	
42		Trial balance	Events and transactions	Balance	
43		Debit or credit	Debit	Credit	Debit or credit
44					
45	Cash	+3 200	+85 250	-2 120	+26 440
46			+3 330	-59 420	
47				-3 000	
48				-800	
49	Accounts receivable	0	+4 490	-3 330	+1 160
50	Inventory of unsold food	+800		-250	+550
51	Inventory of supplies	+2 350		-610	+1 740
52	Equipment	+9 200			+9 200
53	Accumulated depreciation	-1 500		-2 380	-3 880
54	Accounts payable	-1 550	+59 420	-65 110	-7 240
55	Taxes payable	-100	+3 000	-4 460	-1 560
56	Dividend payable	0	+800	-1 000	-200
57	Loan	-3 900			-3 900
58	Share capital	-4 100			-4 100
59	Retained profits	-4 400	+1 000		-3 400
60	Balance sheet subtotals	0	+157 290	-142 480	+14 810
61	Revenue	0		-89 740	-89 740
62	General expenses	0	+67 230		+68 090
63			+250		
64			+610		
65	Depreciation expense	0	+2 380		+2 380
66	Income tax expense	0	+4 460		+4 460
67	Profit and loss subtotals	0	+74 930	-89 740	-14 810
68					
69	Totals	0	+232 220	-232 220	0

which is what equity is. Also note that, without the revenue and expense accounts, the balance sheet accounts are out of balance by the same \$14 810. In Chapter 5, you will see how these revenue and expense accounts are closed off. A separate note will show that the profit figure will be transferred to retained profits; that is, opening retained profits plus net profit for the year minus dividend declared equals closing retained profits ($4400 + 14 810 - 1000 = 18 210$). A figure of \$18 210 will appear as the balance of the retained profits account in the balance sheet.

The company's income statement showing profit for the year is in Exhibit A3.6. The balance sheet is given in Exhibit A3.7.

EXHIBIT A3.6**CAPPUMANIA LTD****INCOME STATEMENT YEAR ENDED 30 JUNE 2022**

	\$	\$
Revenue		89 740
Less Expenses		
General	68 090	
Depreciation	<u>2 380</u>	<u>70 470</u>
Net profit before income tax		19 270
Income tax expense		<u>4 460</u>
Net profit after tax		<u>14 810</u>

EXHIBIT A3.7**CAPPUMANIA LTD****BALANCE SHEET AS AT 30 JUNE 2022**

Assets	\$	Liabilities and shareholders' equity	\$
Current assets		Current liabilities	
Cash	26 440	Accounts payable	7 240
Accounts receivable	1 160	Taxes payable	1 560
Inventory of unsold food	550	Dividend payable	<u>200</u>
Inventory of supplies	<u>1 740</u>		<u>9 000</u>
	<u>29 890</u>	Noncurrent liabilities	
		Loan	<u>3 900</u>
Noncurrent assets		Total liabilities	<u>12 900</u>
Equipment	9 200	Shareholders' equity	
Accumulated depreciation	<u>(3 880)</u>	Share capital	4 100
	5 320	Retained profits*	<u>18 210</u>
	<u>35 210</u>	Total shareholders' equity	<u>22 310</u>
Total assets	<u>35 210</u>	Total liabilities and shareholders' equity	<u>35 210</u>

* Opening balance + Net profit – Dividends declared = Closing balance ($4400 + 14 810 - 1000 = 18 210$)

This example has illustrated how accounting accumulates information about activities and how the financial statements are prepared from the accounts that are produced as the information is accumulated.

You can see how the two financial statements fit together (articulate) because they are both based on the double-entry accounting system. A set of accounts is created which is in balance (sum of all the debit account balances = sum of all the credit account balances).

From these accounts the income statement is produced, the bottom line (net profit after tax) of which is transferred to the statement of retained profits. The ending retained profits balance is transferred to the balance sheet, which summarises all the accounts.

Activities affecting profit therefore affect the balance sheet through the double-entry system. Looking back at the entries, for example:

- Entry 1 increased the balance sheet's assets and increased revenue on the income statement (thereby also increasing profit, which is transferred to retained profits, therefore increasing equity, which keeps the balance sheet in balance).
- Entry 2 decreased the balance sheet's assets and increased its liabilities and increased expenses on the income statement (thereby also decreasing profit, therefore decreasing equity, which keeps the balance sheet in balance).

You will see this sort of relationship among the financial statements many times. It is the basis of one of the most important uses of financial statements: analysing the financial statements in order to evaluate financial performance and financial position.

HOW'S YOUR UNDERSTANDING? SOLUTION

3L (i) DR Loan \$800
 CR Cash \$800

(ii) Cash (asset) decreases by \$800 and loan (liability) also decreases by \$800. Therefore \$2400, \$5550, \$13 250, \$4750 and \$8500 (no effect).

4

Accrual accounting adjustments



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** describe the criteria used to determine if an event involves an accounting transaction (4.1)
- LO2** identify accounting transactions (4.1)
- LO3** explain how the timing of revenue and expense recognition differs from cash inflows and outflows (4.2, 4.4)
- LO4** explain the purpose of accrual accounting adjustments (4.3)
- LO5** describe prepayments, accrued revenue, accrued expenses, unearned revenue (revenue received in advance), depreciation, doubtful debts and contra accounts (4.3, 4.5)
- LO6** calculate the impact on the financial statements of accrual accounting adjustments (4.3)
- LO7** show the impact on the financial statements for the depreciation of assets and the sale of assets (4.5)
- LO8** explain the implications of these adjustments for managers (4.6).

CHAPTER OVERVIEW

Accrual accounting exists because cash flow information is not complete enough to assess financial performance or financial position. Keeping track of cash flow is crucial for business success, but it is not enough. We have to go beyond cash flow to assess economic performance more broadly and to assess non-cash resources and obligations. We do this although it forces us to make estimates, judgements and other accounting choices that, in turn, make the results less precise than we would wish, and more subjective than transaction-based cash flow figures.

Accrual accounting tries to deal with these complexities and uncertainties, including the following:

- The more you think about it, the more complex measuring performance and position seems to be, and the less satisfactory cash by itself seems to be as a measure. Remember, the vast majority of transactions are on credit.
- Some of what is earned may not yet have been received in cash. Your university lecturer may have worked all week but may not get paid by the university until next month; you or your family may run a consulting company and not bill your clients till the end of the job, and then they may pay you another month later.
- Similarly, some costs incurred may not yet have been paid (an accountant gives you advice).

- Some cash payments result in resources still having economic value at the end of the period (the iPad, the computer you use on your university studies).
- Some cash receipts result in obligations still outstanding at the end of the period (you take out a loan for university fees or an overseas holiday).
- The longer-term resources may have deteriorated during the period (not all the clothes purchased during the summer will still be valuable because fashions change, and your iPad and computer are now used items).
- Obligations may build up during the period (the interest on the loan).
- Generally, how do we relate the timing of cash flows to the period we're concerned with? Most of these items involve cash flows sooner or later; the awkward cases are usually those when the period in which the cash moves and the period for which we're measuring performance don't match.

Think of accrual accounting as an attempt to measure economic performance and financial position in a more complex way than just by using cash. There is always a trade-off here: the closer to cash, the more precise the measure, but also the more limited and less informative the information. The more that accountants try to make the financial statements economically relevant, the more they must include estimates and other sources of imprecision or error.

This chapter starts by describing the criteria that are used to determine if an accounting transaction occurs. It then focuses on the conceptual foundation of accrual accounting and covers the main accrual accounting adjustments.

4.1 Financial accounting's transactional filter

LO1

Accounting is an information system to filter and summarise data. Information systems select observations from the world, collect those results into data banks, and organise and summarise the data to produce specific kinds of information. This is useful because decision-makers cannot cope with masses of raw, unorganised observations, and it is economically efficient to have one system organise data into information on behalf of the various users.

LO2

An information system such as financial accounting is inherently limited. It can report only what its sensors pick up as it seeks out data or filters data from the mass of ongoing events. No information system tells you 'the truth', and certainly not 'the whole truth', because it can only pass along information based on what it has been designed or permitted to gather as data. Figure 4.1 represents the situation. Once a piece of raw data is admitted, recording activity takes place and it is stored in a database (in accounting: stored in manual or computerised accounts, ledgers, journals ['the books'] and supporting records). The data is then organised to produce usable information (in accounting: financial statements and reports).

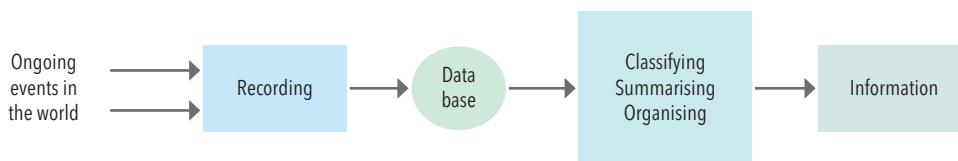


FIGURE 4.1 Steps in the accounting information system

In accounting, we generally refer to the left part of the diagram – the data recording and some routine classifying and summarising – as bookkeeping. We refer to the right part, the turning of data into information for users, as accounting or reporting. Financial accounting information is contained in the system's final product, the financial statements and notes.

Accounting reports are based on, and are limited by, the data that are collected. Therefore, if you are to understand the reports, you have to understand how accounting filters, notices and chooses events to record. Financial accounting's filter is the transaction. Generally, if an event is a transaction, it is recorded in financial accounting's database; if it is not, the routine accounting system ignores the event.

Consider the following list of examples of external accounting transactions (List A). They should be recorded routinely by the accounting system:

- 1 The payroll department pays employees by deposits to their bank accounts.
- 2 A customer pays, in cash or direct debit from their bank account, an account owing since last month and gets a receipt.
- 3 A sales clerk prepares an invoice for a customer for the sale of goods the customer is taking with her and which she promises to pay for.
- 4 The bank charges bank fees on an account.
- 5 The storeroom receives a shipment of spare parts for the delivery trucks, along with an invoice from the parts supplier.

There is no limit to the number or kinds of transactions that human ingenuity can devise. Accounting has to deal with them, and must change as they change. Internet transactions, which have fundamentally changed many accounting systems, have resulted in many efficiencies.

Transactions are partly defined by the legal and economic system. In our society, promises to pay can be enforced in the courts, so they are considered transactions, as in example 3. In general, there are two main kinds of transactions important in accounting: cash transactions, which feature the concurrent exchange of cash, and credit transactions, which feature (partially or fully) promises to exchange cash in the future.

Consider the following list (List B), which shows examples of events that are not accounting transactions and that will therefore not be recorded routinely, if at all, by the accounting system:

- 1 The chief executive officer (CEO) of the company breaks her leg while skiing.
- 2 The company hires a new IT manager who will start in two months' time.
- 3 The main warehouse burns to the ground overnight.
- 4 A customer orders a machine to be delivered next month.
- 5 Real estate reports indicate the company's land has gone up in value by 14 per cent since last year.

Some such events may be brought into the system by special adjustments to the routine recording system that we will learn about later. Events 2 and 3 are examples. But many are never included in financial accounting's information system. Event 1 is an example.

Other events are recorded only after something more has happened. Event 4 is recorded by the accounting system only when the machine is delivered, and event 5 is recorded only if directors decide to revalue land.

What distinguishes accounting transactions, such as those in the first list we discussed, from the sorts of events in the second list? All of those in the second list may be important economically, but they are not routinely recorded by the accounting system. In order to qualify as a financial accounting transaction, an event must normally have all five of the following characteristics:

- Three fundamental economic and legal characteristics:
 - *exchange*: the event must involve an exchange of goods, money, financial instruments (such as cheques), legal promises or other items of economic value
 - *past*: the exchange must have happened, even if just seconds ago (financial accounting is essentially a *historical* information system)
 - *external*: the exchange must have been between the entity being accounted for and someone else, such as a customer, an owner, a supplier, an employee, a banker or a tax collector (the exchange must have been across the entity's boundary, so to speak).
- Two supplementary characteristics:
 - *evidence*: there must be some documentation of what has happened (recorded on paper or electronically)
 - *dollars*: the event must be measurable in dollars or the currency unit relevant in the country where the transaction happened.

The following transaction characteristics define the nature and value of financial accounting information.

- First, transactions are linked to the legal and economic concept of an exchange: completing a contract by giving or receiving consideration in return for the goods or services that change hands. The transactional basis of financial accounting thus has roots in the fundamental legal and economic processes by which society and business operate. It is no accident that accounting recognises, as transactions, events that have a broader legal and business importance too.
- Second, they constitute a large part of the underlying rationale for the historical cost basis of accounting, which is firmly founded on the transaction. If a transaction has *happened*, it should be in the accounting system and in the financial statements. It is history. If it has not yet happened, it is not yet the same sort of legal event and will not yet be in the historical accounting system.
- Third, the characteristics of the transaction provide the basis on which the records can be verified (audited) later as part of the process of ensuring that the accounting information is credible. Events that do not have these characteristics are difficult to verify later, and therefore inevitably lack credibility as measures of financial performance or position.

Let's look at the five events from the list of accounting transactions (List A) on the previous page (1 to 5) and see that they fit the set of transaction characteristics:

	Exchange	Past exchange	External party	Evidence	Dollars
1	Money	Yes	Employee	Direct deposit	Yes
2	Money	Yes	Customer	Receipt	Yes
3	Goods, promise	Yes	Customer	Invoice	Yes
4	Money	Yes	Bank	Bank statement	Yes
5	Goods, promise	Yes	Supplier	Invoice	Yes

The five events in List B, which are not accounting transactions, lack several characteristics, especially that of being a past economic exchange. (Event 4, for example, is not yet an exchange because the machine hasn't yet been delivered.)

What if an accountant is not satisfied with the set of data recorded by an accounting system and wishes to adjust this data to reflect some event he or she thinks is important in measuring financial performance or position? This can be done by recording special alterations called 'adjustments' or adjusting journal entries, which introduce new data or alter the recording of previous data. Deciding whether to make such adjustments and determining the dollar amounts to use in them require expertise and good judgement, since they involve events that are not exchanges, are not always accompanied by normal evidence, or are not readily measurable in dollars. You'll see much more about adjustments in the discussion of accrual accounting later in this chapter (e.g. accrued expenses, accrued revenues).

Most of this book involves deciding on adjustments, deciding on reporting format, making supplementary notes and other such activities. Don't forget that the basic transactional recording system underlies the whole process, and the preceding definition of what is and isn't an external transaction gives the accounting system much of its valuable objectivity. However, also note that accrual accounting is designed to go beyond external transactions and add a further layer of information related to internal transactions such as depreciation, unpaid wages and prepayments. These are discussed in more detail later in this chapter.



HOW'S YOUR UNDERSTANDING?

- 4A** Which of the following transactions would be recorded in the accounting system for Orange Limited?
- (i) Issue of shares by Orange Limited to the public.
 - (ii) Sale of shares from some shareholders of Orange Limited to new shareholders.
 - (iii) Orange Limited received a purchase order for the supply of 100 metres of wire.
 - (iv) Orange Limited delivered the ordered wire to the customer.

4.2 Conceptual foundation of accrual accounting

LO3 Accrual accounting is the dominant form of financial accounting in the world today. This chapter builds on the foundation laid in earlier chapters; it explains why accrual accounting exists and distinguishes the accrual-basis from cash-basis accounting.

Accrual accounting is based on the idea that events, estimates and judgements that are important to the measurement of financial performance and position should be recognised by entries in the accounts (and therefore reflected in the financial statements). This is regardless of whether or not they are yet to be, or already have been, realised by cash received or paid out. To slightly oversimplify, we might say that the objective is to recognise economic flows in addition to cash flows. To clarify this idea, we will focus on revenue and expense recognition.

Let's build the accrual accounting approach from some basics. These three cornerstones have come up already in this book, but we'll give them brief definitions again, then build from there. (We will come back to these concepts in Chapter 15 to provide the more inclusive concepts outlined in the revised International Accounting Standards.)

- 1 Revenues are inflows of economic resources from customers, earned through providing goods or services. You might say that companies are in business to earn revenues.
- 2 Expenses are outflows of economic resources to employees, suppliers, taxation authorities and others, resulting from business activities, to generate revenue and serve customers. You might say that incurring expenses is the cost of earning revenues.
- 3 Net profit is the difference between revenues and expenses over a period of time, such as a month, a quarter or a year. You might say that net profit is the measure of success in generating more revenues than it costs to do so.

Note some features of these cornerstones:

- Revenues and expenses refer to inflows and outflows of economic resources. These flows may be represented by the kinds of events involving cash, but they may also involve other phenomena such as those discussed in section 4.3 below. In particular, they may involve phenomena that arise before or after cash changes hands, as well as at the point of the cash flow.
- Net profit is dependent on how revenues and expenses are measured. Accountants don't (or shouldn't) choose the profit number first, then force revenues and expenses to result in that number, but instead measure revenues and expenses as best they can, then let net profit be whatever the difference is between properly measured revenues and expenses.



HOW'S YOUR UNDERSTANDING?

- 4B** With respect to the current accounting period, state whether each of the following independent transactions:
(a) increases expenses, (b) decreases cash or (c) both.
- (i) Payment of wages for the period
 - (ii) Repayment of a loan
 - (iii) Payment of a cash dividend
 - (iv) Payment of an advertising invoice that was recorded as an expense in the previous period
 - (v) Recognition of depreciation
 - (vi) Purchase of a block of land for cash.

Accrual accounting's purpose is to extend the measurement of financial performance and financial position by recognising phenomena before and after cash flows, as well as at the point of cash flows (which cash basis accounting already does). We need a system, therefore, that covers the following types of events:

- 1 recognition of revenue (resource inflow) or expense (resource outflow) at the same time as cash inflow or outflow
- 2 recognition of revenue (resource inflow) or expense (resource outflow) before cash inflow or outflow
- 3 recognition of revenue (resource inflow) or expense (resource outflow) after cash inflow or outflow.

Accrual accounting derives its value from recognising transactions in categories 2 and 3. These allow measurement of performance and position to be spread out over time. Category 2 extends the time horizon out prior to the cash flow, and category 3 extends the time horizon out subsequent to the cash flow. Category 1 already exists in the cash basis of accounting, so the accrual method includes the cash basis. As will be illustrated, it also does much more.

Implementing the accrual framework

As you review the following examples, try to think about the general accrual accounting framework they represent. They are not the only examples that could be listed, but they will help you understand the

concept, so that you can choose or understand an accounting entry or financial statement item that you might not have seen before. Think about the patterns rather than trying to memorise the entries. Think about how accrual accounting recognises revenue when it is earned and recognises expenses when they are incurred, regardless of when the cash is collected.

In the following illustration, we first show the effect of the transactions on the accounting equation, then follow with the journal entry. This should reinforce your understanding of journal entries.

In considering each of the entries, remember the accounting equation must always balance: $A = L + SE$. An increase in revenue increases SE while an increase in an expense decreases SE.

1 RECOGNITION OF REVENUE OR EXPENSE AT THE SAME TIME AS CASH INFLOW OR OUTFLOW

These examples are simple cash-basis revenue and expense transactions, which you have seen in earlier chapters. We present them again here to provide a complete picture of revenue and expense accounting under the accrual basis.

Revenues

- A retail shop records a cash sale to a customer.

↑ Cash	\$48
↑ Sales revenue	\$48

The journal entry is:

	\$	\$
DR Cash	48	
CR Sales		48

- An investor records a dividend received from BHP.

↑ Cash	\$150
↑ Dividend revenue	\$150

The journal entry is:

	\$	\$
DR Cash	150	
CR Dividend revenue		150

Expenses

- A company pays Acme Rug Cleaners to shampoo the carpets in its customer waiting area.

↑ Office expenses	\$245
↓ Cash	\$245

The journal entry is:

	\$	\$
DR Office expense	245	
CR Cash		245

- A company makes a donation to the accounting department of the local university to support teaching and research.

↑ Donation expense	\$10 000
↓ Cash	\$10 000

The journal entry is:

	\$	\$
DR Donation expense	10 000	
CR Cash		10 000

2 RECOGNITION OF REVENUE OR EXPENSE PRIOR TO CASH FLOW

In the following situations, the revenue or expense is recognised before the cash inflow or outflow. Under accrual accounting, the revenue should be recognised (recorded in the accounting records) when it is earned, not when the cash is collected. Similarly, expenses should be recognised in the period in which the expense is incurred, not when the cash is paid. Assume the year-end is 30 June.

Revenues

- A lawyer performs services for a client in June 2022 and bills the client \$500 to be paid within 30 days.
↑ Accounts receivable \$500
↑ Fee revenue \$500

The journal entry is:

	\$	\$
DR Accounts receivable	500	
CR Fee revenue		500

Expenses

- A company receives a \$2400 advertising bill on 10 June 2022, payable within 30 days.
↑ Advertising expense \$2400
↑ Accounts payable \$2400

The journal entry is:

	\$	\$
DR Advertising expense	2 400	
CR Accounts payable		2 400

- A manufacturer estimates that it will incur future warranty costs of \$3000 in the 2022 financial year on products sold in the 2022 financial year. (The warranty expense should be recognised in 2022, since that is the year in which the sales revenue was recognised and the warranty expense relates to that sale.)

↑ Warranty expense \$3000
↑ Warranty liability \$3000

(Warranty liability is sometimes called provision for warranty expense.)

The journal entry is:

	\$	\$
DR Warranty expense	3 000	
CR Warranty liability		3 000

- On 30 June 2022, a company calculates that its 2022 income taxes are \$1850. The company must pay its taxes by 10 October 2022.

↑ Income tax expense \$1850
↑ Income tax payable \$1850

The journal entry is:

	\$	\$
DR Income tax expense	1 850	
CR Income tax payable		1 850

In the previous examples, revenue and expenses are recognised before the cash flow transactions. When the cash flows occur, there is no longer a need to recognise revenue or expense. The cash flows will be recorded as offsets to the assets and liabilities created when the revenues and expenses were initially recorded. For example, the payment of the tax bill will decrease cash and decrease income tax payable. These entries are illustrated in the following section.

3 CASH COLLECTIONS OR PAYMENTS RELATED TO PREVIOUSLY RECOGNISED REVENUES AND EXPENSES

Revenues

- The lawyer receives full payment from her client in July 2022.

↑ Cash	\$500
↓ Accounts receivable	\$500

The journal entry is:

	\$	\$
DR Cash	500	
CR Accounts receivable		500

Expenses

- The advertising expense is paid on 10 July 2022.

↑ Accounts payable	\$2400
↓ Cash	\$2400

The journal entry is:

	\$	\$
DR Accounts payable	2 400	
CR Cash		2 400

- The manufacturer makes payments under the warranty in July 2022.

↓ Warranty liability	\$3000
↓ Cash	\$3000

The journal entry is:

	\$	\$
DR Warranty liability	3 000	
CR Cash		3 000

- The company pays a cheque to the Australian Taxation Office on 10 October 2022.

↓ Income tax payable	\$1850
↓ Cash	\$1850

The journal entry is:

		\$	\$
DR	Income tax payable		1 850
CR	Cash		1 850

4 CASH INFLOW OR OUTFLOW BEFORE REVENUE AND EXPENSE RECOGNITION

In the following situations, the revenue or expense is recognised after the cash inflow or outflow. Under accrual accounting, the revenue should be recognised when it is earned, not when the cash is collected. Similarly, expenses should be recognised in the period in which the expense is incurred, not when the cash is paid.

Revenues

- A lawyer receives an advance of \$2500 from a client for future services. The revenue will not be earned until a later date when services are performed. Recognition of revenue is deferred until the service has been performed.

↑ Cash	\$2500
↑ Customer advances*	\$2500

*(This is also called 'unearned revenue' or 'revenue received in advance'.)

The journal entry is:

		\$	\$
DR	Cash		2 500
CR	Customer advances		2 500

Expenses

- In June 2022, Dogwood Limited pays \$400 for a one-year fire insurance policy that becomes effective 1 July 2022. The insurance premium provides coverage for one year, and should be recognised as a 2023 expense. Expense recognition is deferred until 2023.

↑ Prepaid insurance	\$400
↓ Cash	\$400

The journal entry is:

		\$	\$
DR	Prepaid insurance		400
CR	Cash		400

- In July 2022, Dogwood Limited purchases, for \$400 000 in cash, a new building to be used as a retail location. Dogwood estimates that the building will be useful for 10 years. The building will be used to produce revenues over 10 future years. Recognition of an expense for the cost of using the building (depreciation expense) will be deferred.

↑ Building	\$400 000
↓ Cash	\$400 000

The journal entry is:

		\$	\$
DR	Building		400 000
CR	Cash		400 000

- Dogwood Limited purchases \$5000 worth of stereo components from a supplier for cash. Dogwood intends to resell these items to its customers. The purchases represent an asset (inventory), and recognising the cost as an expense is deferred until revenue is recognised through sales to customers.

↑ Inventory \$5000
↓ Cash \$5000

The journal entry is:

		\$	\$
DR	Inventory	5 000	
CR	Cash		5 000

5 RECOGNITION OF REVENUE OR EXPENSE AFTER CASH INFLOW OR OUTFLOW

Revenues

- The lawyer completes the work promised for the client. The revenue has now been earned and should be recognised.

↓ Customer deposits \$2500
↑ Fee revenue \$2500

The journal entry is:

		\$	\$
DR	Customer deposits	2 500	
CR	Fee revenue		2 500

Expenses

- Dogwood's fire insurance policy expires in June 2023. Coverage has been used during the year ended 30 June 2023; therefore, the cost of insurance used up should be recognised as an expense in 2023.

↑ Insurance expense \$400
↓ Prepaid insurance \$400

The journal entry is:

		\$	\$
DR	Insurance expense	400	
CR	Prepaid insurance		400

- After a year of occupancy, Dogwood recognises a portion of the cost of the building as an operating expense (cost of \$400 000; useful life of 10 years).

↑ Depreciation expense \$40 000
↑ Accumulated depreciation \$40 000

The journal entry is:

		\$	\$
DR	Depreciation expense	40 000	
CR	Accumulated depreciation		40 000

- Dogwood sells all of the stereo components to customers. The cost of the inventory sold is an expense of earning revenue from the sale.

↑ Cost of goods sold \$5000
↓ Inventory \$5000

The journal entry is:

	\$	\$
DR	Cost of goods sold	5 000
CR	Inventory	5 000



HOW'S YOUR UNDERSTANDING?

4C During the year the following occurred. What are the total expenses for the year?

- (i) Goods which cost \$60 000 were sold on credit for \$100 000.
- (ii) Paid wages of \$40 000.
- (iii) Depreciation expense was \$8000.

4D Given the following transactions, what is total revenue for 2022?

- (i) Received \$50 000 from accounts receivable in 2022, related to sales in 2021.
- (ii) Cash sales of \$200 000 in 2022.
- (iii) Credit sales of \$600 000 in 2022, of which \$450 000 was received in 2022.
- (iv) Received \$70 000 deposit on a consulting job to start in 2023.

4E If a company pays a 12-month insurance premium for \$36 000 on 1 June 2022, covering 1 June 2022 to 31 May 2023; what is the value of the asset at 30 June 2022?

SUMMARY

There are a lot of important ideas on the last six pages under the heading of 'Implementing the accrual framework'. These really are fundamental concepts. After you read the summary below, we suggest it would be beneficial in the long term to reread this section.

There are complications, but the general pattern behind accrual accounting's revenue and expense recognition system is as follows:

- The recognition of revenue before cash collection is done by creating an asset account (accounts receivable, usually), which stands in for the economic value gained until the cash has been collected.
- The recognition of an expense before cash payment is made by creating a liability account (such as accounts payable, wages payable or tax payable), which stands in for the economic value lost until the cash is paid.
- Recognition of unearned revenue when cash is collected by creating a liability account (called 'unearned revenue' or 'revenue received in advance'), which represents the commitment to the customer until the economic value is gained by providing the goods or services the customer has paid for. Revenue is later recognised when the goods or services are actually provided.
- An asset account (such as prepayments, inventory or equipment) is created when cash is paid. These assets represent the available resource until the economic value is lost by consuming the asset. Assets can be acquired by promises to pay, not just by cash; therefore, recorded as accounts payable, mortgage payable or other liabilities rather than cash. But you can see that the 'asset' side of these entries still represents resources that are to be consumed later. Accrual accounting recognises the expense when the consumption happens, not when the asset is acquired, no matter how it is acquired (e.g. purchase of equipment, buildings, investments, etc.).
- Not all cash flows involve revenues or expenses. Such flows need to be included in the accounts, but as they do not affect profit, they are limited to balance sheet accounts; that is, one asset increases (e.g. equipment) while another asset (cash) decreases. Other events are even further removed from the profit calculation. Some examples of these are the receipt of cash from an issue of share capital, the disbursement of cash to make a mortgage payment, the disbursement of cash to pay for an investment in another company, and the receipt of cash from a bank loan.



HOW'S YOUR UNDERSTANDING?

4F Provide an example of each of the following:

- (i) the cash is received in the same period as the revenue is earned
- (ii) the cash is received in a period before the revenue is earned
- (iii) the cash is received in a period after the revenue is earned.

These examples were intended to help you think about what is going on, and to see that there is a pattern behind the great variety of entries used in accrual accounting. For example, the following are all examples of asset consumption:

- reduction in the economic value of a building (depreciation)
- reduction in inventory as goods are sold (cost of goods sold)
- reduction in supplies assets as supplies are used (supplies expense)
- reduction of prepaid insurance asset as the coverage is used (insurance expense).



HOW'S YOUR UNDERSTANDING?

4G In what way can it be said that depreciation expense and cost of goods sold expense are examples of the same thing?

4.3 Accrual accounting adjustments

LO4 The transactional records discussed in section 4.1 provide the foundation of the financial accounting system.

LO5 In order to implement the accrual accounting system outlined, such records usually require adjustments.

LO6 Adjustments involve the implementation of routine accruals, such as those indicated in section 4.2: revenues earned but not yet collected, expenses incurred but not yet paid, cash received from customers before the related revenues have been earned, expenses prepaid before they have been incurred and consumption of assets.

Accrual accounting adjustments follow the same double-entry format as other transactions and after each adjustment, the accounting equation will still balance. Accountants often call such adjustments 'adjusting journal entries'.

The objective of accrual accounting is to improve the measurement of financial performance and position. However, because different choices can be made about what accounts need to be adjusted and by how much, accrual accounting can be a mechanism for manipulating results and producing misleading reports (often referred to as 'earnings management'). Therefore, the auditors give particular attention to the kinds of accrual adjustments a company makes. Most of the criticism of financial reporting is directed at subjective accrual adjustments – made using judgement – rather than at the more objective, verifiable transactional records. In spite of this subjectivity and criticism, most accountants believe the accrual accounting basis to be superior to the cash basis, because it provides a more complete record that is also more representative of economic performance than the cash basis.

There are four main types of routine adjustments that need to be accounted for:

- prepayments
- unearned revenues
- accrual of unrecorded expenses
- accrual of unrecorded revenues.

Prepayments

Prepayments (also called 'prepaid expenses') are assets that arise because an expenditure has been made, but there is still value extending into the future. They are usually classified as current assets because the future value generally continues only into the next year. However, sometimes the value extends beyond a year, and the company may then appropriately show a noncurrent prepaid expense (e.g. payment for a three-year service contract in advance). Prepayments arise whenever the payment schedule for an expense does not match the company's financial period, such as for annual insurance premiums when the policy date is not the financial year-end, or council rates that are based on the council's rate assessment schedule rather than on the company's financial period or rent payments that are often made quarterly in advance.

Prepayments arise from accrual accounting, in cases where the expense recognition follows the cash flow. The asset called 'prepayments' is included on the balance sheet: something of value exists; therefore, its cost should not yet be deducted as an expense. Here, the value is in the fact that, having spent the money already, the company will not have to spend it in the next period. Alternatively, the value can be considered to be the fact that they are entitled to a service in the future for which they have already paid. So, prepayments do not necessarily have any market value, but they have an economic value because future resources will not have to be expended. As the assets are consumed in the process of earning revenue, a portion of the cost is written off in each period as an expense. For example, in the case of prepayments, such as prepaid insurance, 1/12th of the premium would be used up each month, resulting in a reduction in an asset (prepayments) and an increase in an expense (insurance expense).

The accounting for prepayments works as follows. When an amount is paid (e.g. an insurance premium) prepayments (an asset) is increased and cash (an asset) decreases. At the end of the accounting period, some of the prepayment will have been used up. Therefore, the amount of the asset is reduced and the expired portion of the asset is treated as an expense. Consider the following example.

On 1 June 2022, a company pays \$24 000 for a one-year insurance policy. The accounts would be affected as follows.

	Assets		=	Liabilities	+	Equity
	Cash \$	Prepayments \$				Expense \$
1 June	–24 000	+24 000				
30 June	—	—2 000				–2 000
Total	–24 000	+22 000				–2 000

As 1/12th of the asset was used up in June (i.e. an expense of \$2000), the closing balance of the asset is \$22 000. To be clear, the expense is increasing (+\$2000) but equity (SC+RP+R-E) is decreasing because of the negative sign in front of expenses.

The journal entry is:

			\$	\$
1 June	DR	Prepayments	24 000	
	CR	Cash		24 000
30 June	DR	Insurance expense	2 000	
	CR	Prepayments		2 000

These accounts now appear as follows:

Prepayments \$22 000 (\$24 000 – \$2000) in the balance sheet

Insurance expense \$2000 in the income statement

The prepayment balance of \$22 000 represents 11 months of insurance that is prepaid and would be shown in the balance sheet at 30 June 2022 as a current asset. The insurance expense account would appear on the June income statement. The transfer from the asset account (prepayments) to the expense account (insurance expense) will continue each month for the next 11 months, by which time the asset will have a zero balance.

Prepayments are sometimes shown on the face of the balance sheet (the Telstra example) or included in other assets and disclosed separately in the notes to the accounts (the JB Hi-Fi example). Exhibit 4.1 shows that Telstra has \$265 million of prepayments classified as current assets and shown on the face of its 2020 balance sheet (\$457 million in 2019). Examples of prepayments for Telstra would include payments for insurance and rent on premises for future periods, e.g. they make these payments yearly, where part of the payment relates to 2019 and part relates to 2020.

In contrast, JB Hi-Fi Limited, in its 2020 annual report, shows prepayments in the notes as part of 'other assets', i.e. current assets are shown on the face of the balance sheet, then in Note 10 this amount is divided into prepayments and other (see Exhibit 4.1).

EXHIBIT 4.1

TELSTRA AND JB HI-FI LIMITED

EXTRACTS OF CONSOLIDATED BALANCE SHEET AS AT 30 JUNE 2020

Telstra Group	Note	2020 \$m	2019 \$m
Current assets			
Cash and cash equivalents	2.6	499	604
Trade and other receivables and contract assets	3.4	5 121	5 392
Deferred contract costs	3.9	82	95
Inventories	3.5	418	448
Derivative financial assets	4.3	147	179
Current tax receivables		2	7
Prepayments		265	457
Assets classified as held for sale	3.10	—	121
Total current assets		<u>6 534</u>	<u>7 303</u>

Source: Telstra Annual Report 2020. Reproduced with permission Telstra Corporation Limited.

JB Hi-Fi	Note	2020 \$m	2019 \$m
Current assets			
Cash and cash equivalents	18	251.5	119.2
Trade and other receivables	9	220.3	254.4
Inventories	8	739.3	886.7
Other current assets	10	<u>34.7</u>	<u>34.6</u>
Total current assets		<u>1 245.8</u>	<u>1 294.9</u>
OTHER ASSETS			
<i>Current</i>			
Prepayments		30.8	30.0
Other		<u>3.9</u>	<u>4.6</u>
		<u>34.7</u>	<u>34.6</u>

JB Hi-Fi Limited, *Annual Report 2020*, pages 64 and 77.

The entry that decreases prepayments and increases expenses is an example of expiration of assets, i.e. part of the asset has been used up. Another example of the expiration of assets is the using up of supplies. For example, on 3 June a company purchases supplies costing \$10 000, which it pays cash for. At 30 June, it is ascertained that \$3000 of the supplies remains unused. Therefore, the balance of the asset account

(supplies) needs to be reduced by \$7000 ($\$10\,000 - \3000). The fact that \$7000 of supplies has been used up results in an expense.

	Assets		=	Liabilities	+	Equity
	Cash	Prepayments				Expense
	\$	\$				\$
3 June	-10 000	+10 000				
30 June		<u>-7 000</u>				<u>-7 000</u>
Total	-10 000	+3 000				-7 000

The supplies expense balance of \$7000 would appear in the June income statement. The supplies balance of \$3000 would appear as a current asset in the balance sheet as at 30 June.

The journal entry is:

			\$	\$
3 June	DR	Supplies	10 000	
	CR	Cash		10 000
30 June	DR	Supplies expense	7 000	
	CR	Supplies		7 000

Another example of reducing the balance of an asset and treating it as an expense upon consumption is depreciation. This concept has been introduced earlier, and will be discussed in section 4.5 of this chapter and in more detail in Chapter 13.

Unearned revenues

Unearned revenue is future revenue where the cash has been received in advance of earning revenue. Alternative names for the unearned revenue account include 'revenue received in advance', 'advances from customers' and 'customer deposits'. They relate to collections from customers for goods or services not yet provided; therefore, the revenue cannot yet be recognised. Examples include deposits from customers for jobs, insurance premiums received, yearly magazine subscriptions received, golf club membership fees and rental income received in advance. For example, a company that sells magazines by subscription would usually receive these amounts in advance, then send out magazines each month. Assume that at the start of the year the company receives subscriptions of \$240 000 and has promised to send out magazines for 12 months. At the time of collection, the amount received would be a liability because goods or services are owing to the subscriber. As each magazine is delivered, the liability is reduced and revenue can be recognised.

	Assets	=	Liabilities	+	Equity
	Cash		Unearned revenue		Revenue
	\$		\$		\$
January	+240 000		+240 000		
Monthly			-20 000		+20 000

The journal entry is:

			\$	\$
Jan.	DR	Cash	240 000	
	CR	Unearned revenue		240 000

Each month, as the magazines are sent out, the following journal entry would be posted:

			\$	\$
(Date)	DR	Unearned revenue	20 000	
	CR	Sales revenue		20 000



HOW'S YOUR UNDERSTANDING?

- 4H** If the supplies asset account balance was \$4000 at the start of the month and \$6000 at the end of the month, what is the supplies expense if \$30 000 of supplies were purchased during the month?

Qantas Airways Limited, in its 'Summary of Significant Accounting Policies' in the 2020 Annual Report, provides the following details on unearned revenue (described as 'revenue received in advance'):

Passenger, freight revenue, capacity hire and air charter revenue are recognised when the travel or service is provided. Revenue recognised on travel is net of sales discounts, passenger and freight interline/IATA commission and Goods and Services Tax. ...

Passenger travel and freight services are generally paid for in advance of travel and are deferred on the balance sheet as revenue received in advance. Travel credits are classified as revenue received in advance where they are available for future flights or in certain circumstances for refund, if requested. Where customers have made refund claims these are classified as payables, where the balance of refunds is material in aggregate.

Qantas, Annual Report 2020, page 109 © Qantas Airways Limited.

This note indicates that when the cash is received, cash (an asset) will be increased and revenue received in advance (a liability) will be increased. When passengers take their flight or their ticket expires, the revenue received in advance account would be reduced and revenue increased.

Qantas, like many other companies including Telstra, refers to 'unearned revenue' as 'revenue received in advance', that is, both terms can be used interchangeably. Note that revenue received in advance is its largest current liability. In its 2020 Annual Report, Qantas has \$2784 million in current liabilities under the heading 'Revenue received in advance'.

	Qantas Group	
	2020 \$M	2019 \$M
Current liabilities		
Payables	2 351	2 366
Revenue received in advance	20	2 784
Interest-bearing liabilities	21(B)	868
Lease liabilities	16(B)	524
Other financial liabilities	27(C)	89
Provisions	22	1 539
Income tax liabilities	9(D)	—
Total current liabilities	8 304	9 018

Qantas, Annual Report 2020, page 60 © Qantas Airways Limited.

Unearned revenue is also large in some service industries such as telecommunications. As an example, when you pay your phone rental in advance, the payment received by Telstra would increase cash and increase the unearned revenue (also called 'revenue received in advance'). As Telstra provides the service, the revenue would be increased and the liability decreased. Revenue received in advance includes revenue from providing access to the fixed and mobile network. This revenue is initially recorded as a liability and then transferred to earned revenue in line with its revenue recognition policies.

In their 2020 financial statements, Chartered Accountants Australia and New Zealand (CAANZ) and CPA Australia include fees in advance in the balance sheet under liabilities. Note that these items are included in the current liability section because, at year-end, CAANZ and CPA have not yet provided the service. They are recognised as revenue in the following year; that is, the year they provide the service to members. If you are a member of a golf club, the Sydney Cricket Ground or a season ticket holder at the football, the organisation will include the fees under current liabilities when received and then as services are provided (based on number of months or number of games), they will reduce unearned revenue and increase revenue.



HOW'S YOUR UNDERSTANDING?

- 4I** When the unearned revenue account increases, what other account changes? When the unearned revenue account decreases, which other account increases?
- 4J** If the opening balance of unearned revenue is \$100 000 and the closing balance is \$20 000:
- (i) what is revenue for the period assuming there are no other transactions;
 - (ii) where would the closing balance of unearned revenue appear in the balance sheet?

Accrual of unrecorded expenses

Organisations need to determine which expenses have been incurred by the organisation (but not paid in cash) during a particular period of time – generally a month. This usually involves checking which invoices have been received from suppliers, incorporating that information into the accounting system as accounts payable, and making estimates for expenses for which invoices have not yet been received (e.g. telephone, electricity and accounting fees). Generally speaking, accounts payable includes trade suppliers, but accrued expenses include other expenses incurred in running the business.

Accrued expenses are expenses that have been incurred during the current period but will not be paid until the following period. A common example is wages. Because the end of the pay period and the end of the financial period sometimes occur on different days, it is necessary to include an accrual for wages payable from the date of last payment to the day on which the accounting period finishes; that is, the employees have done the work but will not be paid for this work until after the end of the financial year. Therefore, at year-end, the organisation has a liability. It is usually called 'accrued wages' or 'wages payable'.

For example, assume wages are paid weekly (on Thursday) to cover the previous five working days before the Thursday. If 30 June falls on a Friday, two days' wages will be owing at 30 June. If the weekly wages bill is \$500 000, then \$200 000 (Thursday and Friday) will be owing.

Assets	=	Liabilities	+	Equity
		Accrued wages		Expense
		\$		\$
30 June		+200 000		-200 000

Wages expense is increased because it is an expense of the period, and accrued wages (or wages payable) is increased because there is a liability at the end of the period. Other examples of accruals would be interest expense and electricity charges owing at the end of a period.

The journal entry would be:

			\$	\$
30 June	DR	Wages expense	200 000	
	CR	Accrued wages		200 000



HOW'S YOUR UNDERSTANDING?

- 4K** What effect would failure to make adjustments for accrued expenses have on the income statement and the balance sheet?

Accrual of unrecorded revenues

The accrual of unrecorded revenues occurs when a service has been provided but cash will not be received until the following period. Common examples of accrued revenues include interest receivable on loans, commissions earned and unbilled revenues. For example, assume a company deposited \$500 000 with a bank for one year at 4 per cent on 1 January 2022 (interest payable at the end of the period). At 30 June 2022, it would have earned \$10 000 interest, although the total interest of \$20 000 would not be received until 31 December 2022.

Accrued interest revenue (also called 'interest receivable'), which is an asset, would be increased by \$10 000, and interest revenue would be increased by \$10 000.

Assets	=	Liabilities	+	Equity
Accrued interest revenue				Interest revenue
\$				\$
30 June	+10 000			+10 000

Accrued interest revenue is a current asset that will appear in the balance sheet, and interest revenue is a revenue account that will appear in the income statement for the year ended 30 June 2022.

The journal entry would be:

		\$	\$
30 June	DR	Accrued interest revenue	10 000
	CR	Interest revenue	10 000

An interesting example of accrued revenue is provided in the 2020 Telstra accounts. Telstra bills its customers either monthly or quarterly. When it bills customers, it increases accounts receivable and increases sales revenue. When the cash is received, cash is increased and accounts receivable is decreased. However, at 30 June there will be a lot of telephone calls that have been made but not yet billed. For example, if you receive a bill on 10 June (and you are billed monthly), you will not receive another bill until 10 July. As telephone calls have been made between 10 June and 30 June, Telstra has provided the service; therefore, it is entitled to recognise the revenue. The relevant section of Telstra's 2020 financial statements shows 'Accrued Revenue' of \$565 million (\$795 million in 2019) under current assets. That is, at the end of the year, it increased accrued revenue (asset) and increased sales revenue.



HOW'S YOUR UNDERSTANDING?

- 4L** A company has a \$50 000 balance in the company's accrued revenue account. Where would this account appear in the balance sheet?

4.4 The financial period

Financial statements all have a time dimension. Balance sheets are prepared as at specific points in time, and income statements cover specified periods of time. Business, and other economic activity, carries on continuously. Therefore, if the financial statements are to be at (or begin and end at) particular dates, financial accounting must somehow find a way to separate all those activities into periods.

LO3

Making effective cut-offs for revenues and expenses is a major problem for accrual accounting. Much effort is put into determining whether revenues are placed in the appropriate years, whether there are bills outstanding for expenses that should be taken into account, whether inventories of goods and supplies are actually on hand, and so on. It is generally harder to do this if an organisation has larger and less frequent revenue and expense transactions; and easier, therefore, if organisations have many short and simple transactions. But even then, it can be difficult to keep track of just where the organisation stands if there are thousands of transactions in process across a year-end.

When should the financial (accounting) year begin and end? Companies have an initial choice, but once they make it, reasons relating to habit, and legal and tax rules, usually force them to stay with that choice indefinitely. They may select a financial year-end that is a relatively quiet time, so that there aren't many unfinished transactions in process, and the revenue and expense cut-offs can be made more cleanly.

A large majority of Australian public companies have 30 June as their financial year-end. One reason for this is that it coincides with the end of the tax year. However, this is certainly not the only reason to use 30 June, as it is possible in Australia to use a substituted accounting period for taxation purposes, provided permission is received from the Australian Taxation Office. Financial year-ends vary substantially between countries. For example, in the United States, Canada, Singapore and Malaysia, 31 December is the most common date, while in the United Kingdom, New Zealand and Japan, 31 March is most common.

Examples of Australian companies with balance dates other than 30 June include those as follows.

Date	Company
31 March	James Hardie Industries
	Macquarie Bank
31 July	Washington H Soul Pattinson
30 September	Orica Australia
	Australia and New Zealand Banking Group
	Westpac
	National Australia Bank
31 December	Coca-Cola Amatil
	Caltex

4.5 Contra accounts

Most balance sheet accounts can be considered to be a control account. Accounts receivable is the sum of all the individual customers' accounts. Inventory is the amount that should be found if the company lists or counts all the unsold goods physically on hand. Accounts payable is the sum of all the individual suppliers' accounts. The number of shares outstanding should be traceable to the share capital account. (The particular owners may change, for example, because of trading on the stock market, but the company should always know how many shares it has issued and what it originally received for them.) Even the property, plant and equipment asset accounts are controls, as all the assets whose costs are included should be physically present.

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The value of all these accounts as control accounts is that the amounts in them should be supported by, or reconcilable to, records. For example, the accounts receivable account will balance with the sum of all the individual debtor accounts (i.e. individual accounts receivable). What do we do, then, when we want to make

a change in a balance sheet account without changing the underlying records and lists? Here are some examples of when we might want to change an asset account and why, at the same time, we might be reluctant to do it:

- A company has become concerned that it might not collect all the accounts receivable, so, for proper profit measurement, it wants to recognise that it has probably suffered some 'bad debts' expense. However, we do not want to change the accounts receivable control account because it should correspond to the list of customers' accounts, and we have not yet given up on collecting any accounts receivable, so the control feature is still useful. We address this issue in Chapter 11.
- The property and plant assets are being used up gradually so the company wants to record depreciation expense as part of profit measurement. However, it does not want to change the asset cost account balances because their costs are not changing, but rather their economic values are being used up. We address this issue in the following text.

In these examples, the financial statement objectives of proper asset valuation and profit measurement seem to conflict with maintaining the accounts for control purposes. To address this problem a 'contra account' has been invented to allow us to recognise expenses and related value changes to assets without changing the control account.

Here we will focus only on one very common use of contra accounts: accumulated depreciation. Virtually all organisations have this account. The account illustrates how the accounting system can meet one objective (expense recognition) and avoid compromising another objective (control) by creating an account that recognises expenses but does not change the control account related to those expenses (asset costs).

Accumulated depreciation

Contra accounts are used to accumulate depreciation on fixed assets, such as buildings and equipment. For example, for equipment which cost \$500 000 and has a life of five years, the annual depreciation charge of \$100 000 would be recognised as follows: an expense increases (and so would appear in the income statement) and the asset value in the balance sheet is reduced via a contra asset account (called 'accumulated depreciation'). This side of the entry could have been to the asset account 'equipment'. Instead, the contra account is used, so that by leaving the asset cost account unchanged, the balance sheet presents the acquisition cost of the asset (\$500 000) along with the accumulated amount of expense (\$100 000) that has been recognised to date. Showing both these items allows users to determine approximately how long the asset has been in service. Remember that accumulated depreciation on the balance sheet is the amount of depreciation accumulated over the life of the asset to date, whereas the amount of depreciation charged this year (to match the revenues the asset consumption is presumed to have helped generate) can be determined from the depreciation expense account in the income statement.

Assets			=	Liabilities	+	Equity
Cash	Equipment	Accumulated Depreciation				Expense
\$	\$	\$				\$
-500 000	+500 000					
		-100 000			-100 000	

Let's look at a simple example involving an electrician's purchase of a new truck. The truck cost \$40 000 and an annual depreciation expense of \$8000 was determined. Each year, the depreciation expense account would be increased by \$8000 and the contra asset account (called 'accumulated depreciation') would be increased by \$8000. (In Chapter 13 we discuss various depreciation methods. Here we introduce the most important method, called straight-line depreciation.)

On the balance sheet, the asset account for the truck's cost would continue to show a balance of \$40 000, but each year the accumulated depreciation contra asset account would increase by \$8000. Deducting

accumulated depreciation from the long-term asset account leaves a figure known as the net book value. So, we would have:

	Cost \$	Accumulated depreciation \$	Net book value \$
Date of purchase	40 000	0	40 000
End of first year	40 000	8 000	32 000
End of second year	40 000	16 000	24 000

Each year the journal entry to record depreciation would be:

	\$	\$
DR Depreciation expense	8 000	
CR Accumulated depreciation		8 000

If the truck were sold at any time, the cost would be removed from the ledger, but so would the contra account. The contra is meaningful only in comparison to the cost – when the truck is gone, neither account is needed any more. Suppose the truck were sold for \$27 000 at the end of the second year. At this point, the accumulated depreciation is \$16 000 (\$8000 + \$8000) and the book value is \$24 000 (\$40 000 – \$16 000). If the company receives \$27 000, it makes a gain of \$3000. This gain (usually called gain on sale or profit on sale) is a revenue item. These effects are shown as follows:

	Assets			= Liabilities	+	Equity
	Cash \$	Truck \$	Accumulated depreciation \$		Revenue \$	Expense \$
Purchase	–40 000	+40 000				
Year 1			–8 000			–8 000
Year 2		<u>—</u>	<u>—</u>	<u>–8 000</u>		<u>–8 000</u>
Subtotal	–40 000	+40 000	–16 000			–16 000
Sale of truck	+27 000	–40 000	+16 000		+3 000	

The journal entries for the asset disposal discussed are:

	\$	\$
DR Cash	27 000	
CR Truck asset		40 000
DR Truck accumulated depreciation	16 000	
CR Gain on sale of truck		3 000

The gain on sale is just the difference between the proceeds and the net book value at the date of sale. If the proceeds had been \$19 000 instead, the debit to cash would have been \$19 000 and there would have been a debit to loss on sale (an 'other expense' account in the income statement) for \$5000, the difference between the proceeds (\$19 000) and the net book value (\$24 000).

4.6 Managers and accrual accounting assumptions

A key factor that affects executive rewards is the profitability of the company, while other changes such as company valuations are, in turn, affected by profitability. If you want more evidence, have a look at the remuneration report of any listed company. These remuneration reports are provided in annual reports.

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Accrual accounting's purpose is to move beyond cash flows towards a broader economic concept of profit and financial position. From a manager's point of view, this has two important implications:

- 1 As a more inclusive way of measuring performance and position, accrual accounting should reflect more of what a manager is trying to do than cash flow can. This should make accrual accounting attractive to managers who want to be evaluated fairly and who are interested in comparing their companies with others. For example, by including revenues and expenses and the accompanying assets and liabilities (e.g. accounts receivable, accounts payable), the financial statements provide a more complete picture of performance and position.
- 2 The criteria for when and how to recognise revenues and expenses are inescapably judgemental, and therefore have both an arbitrary and a subjective aspect. Earlier chapters have suggested that some managers may be motivated to manipulate accounting results, and accrual accounting procedures can be a way of doing this. However, it should also be said that many managers find accrual accounting too loose and flexible and would prefer less estimation and subjectivity. These are the issues that regulators face as accounting standards evolve over time.

Another reason, therefore, for managers to take financial accounting seriously is so that they can know when the accounting measures seem appropriate and when they do not. Accrual accounting has many advantages and is very widely used, but managers should not accept it uncritically. As a future manager, you can be almost certain that accrual accounting numbers will affect your performance evaluation in your career. It is always good to know the rules by which you are being evaluated and often rewarded.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution, working out the answer always looks easier than it is.

PRACTICE PROBLEM A

Revenues and expenses

The following transactions occurred between 1 July 2021 and 30 June 2022 for AKH Limited.

- a Issued share capital for \$600 000 cash.
- b Purchased \$170 000 of inventory on credit.
- c Paid \$56 000 to accounts payable.
- d Sold inventory costing \$120 000 for \$350 000. All sales are on credit.
- e Received \$220 000 from accounts receivable.
- f Paid dividends of \$60 000.
- g Borrowed \$200 000 on 1 July 2021. The loan is due on 30 June 2024 and carries a 10 per cent p.a. interest rate. Paid \$8000 interest on this loan during 2022.
- h Paid wages of \$180 000; wages of \$40 000 had been earned by employees but not paid at year-end.
- i On 1 June received a deposit of \$80 000 for work to be carried out in the next year.
- j Used \$22 000 of electricity during the year, for which the company has not yet been billed.
- k Paid a \$24 000 insurance policy on 1 October 2021, covering 1 October 2021 to 30 September 2022.

Required:

- 1 List all revenues for the year (including dollar amounts).
- 2 List all expenses for the year (including dollar amounts).
- 3 By how much did the cash balance increase during the year?
- 4 Assuming zero opening balances, what is the balance of the following accounts at year end: inventory, accounts receivable, accounts payable, and prepayments?

PRACTICE PROBLEM B

BROOKLINE LTD
BALANCE SHEET AS AT 30 JUNE 2020

ASSETS	\$	LIABILITIES	\$
Cash	200 000	Wages payable	60 000
Accounts receivable	380 000	Accounts payable	<u>240 000</u>
Inventory	400 000	Total Current Liabilities	300 000
Prepaid rent	<u>20 000</u>		
Total Current Assets	<u>1 000 000</u>	Long-term debt	<u>0</u>
		Total Liabilities	<u>300 000</u>
Land	2 800 000		
Equipment	3 000 000	Shareholders' Equity	
Less accumulated depreciation	<u>(800 000)</u>	Share capital	4 440 000
Total Noncurrent Assets	<u>5 000 000</u>	Retained profits	<u>1 260 000</u>
		Total Shareholders' Equity	<u>5 700 000</u>
TOTAL ASSETS	<u>6 000 000</u>	TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	<u>6 000 000</u>

The following transactions occurred during the year ended 30 June 2021 for Brookline Ltd:

- a Purchased \$80 000 of inventory on credit.
- b Paid \$171 000 to accounts payable.
- c Sold inventory costing \$160 000 for \$380 000. 70% of sales are on credit and 30% are cash.
- d Collected \$165 000 from customers.
- e Depreciated equipment for the year using the straight-line method (20% per annum and no scrap value).
- f On 1 January 2020, borrowed \$500 000 from the bank at 6% per annum interest.
- g Paid \$20 000 cash for supplies received during the year. At year end \$6000 of supplies were still on hand (i.e. had not been used up).
- h Paid wages of \$270 000 in cash.
- i Received interest of \$16 000 in cash from the bank.
- j Dividends declared and paid totalled \$100 000.
- k Principal and interest payable on 30 June 2022.

Additional information as at 30 June 2021:

- l Accrued interest revenue had a balance of \$3000.
- m Prepaid rent had a balance of zero.
- n Wages payable at year end had a balance of \$40 000.

Using the balance sheet as at 30 June 2020, the transactions listed and the additional information provided:

- 1 List all Brookline Ltd's revenues for the year ending 30 June 2021. Include account names and dollar amounts.
- 2 List all Brookline Ltd's expenses for the year ending 30 June 2021. Include account names and dollar amounts.

PRACTICE PROBLEM C

Effect on revenue, expenses, assets and liabilities

The following transactions occurred during 2021–2022 for SATT Ltd, whose year-end is 30 June 2022.

- 1 Paid wages of \$90 000; wages of \$10 000 had been earned by employees but not paid at year-end.
- 2 On 1 June 2022 received a deposit of \$70 000 for work to be carried out in the next year.
- 3 Used \$15 000 of electricity during the year for which the company has not yet been invoiced.
- 4 Purchased supplies costing \$4000 on credit; at year-end \$800 of these supplies remained.
- 5 Paid a \$24 000 insurance policy on 1 October 2021, covering 1 October 2021 to 30 September 2022.

For each of the discussed transactions, events or facts, indicate the impact on revenues, expenses, assets and liabilities for the year ended 30 June 2022 by placing a + or – sign (+ for increase and – for decrease) to indicate direction in the appropriate box. Write NE if there is no effect. Include dollar amounts. Be sure to place an answer in every box.

Revenues	Expenses	Assets	Liabilities
1			
2			
3			
4			
5			

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 What determines whether specific transactions are to be recorded in the accounting records?
- 2 Identify some differences you might expect to find between the transaction filters and accounting books and records of a large corporation and those of a corner shop run by one person.
- 3 State whether or not you agree with statements a and b and, in a few words, say why.
 - a If an event satisfies all five of the transaction criteria, you can be sure it will be recorded by the entity's accounting system.
 - b Purchases and sales by investors of existing issued shares of a company listed on the Australian Securities Exchange are not accounting transactions in the company's records.
- 4 Why is it essential that an accurate source document be prepared for every transaction?
- 5 Indicate the source documents that would be used for making entries for the following transactions:
 - a a cash payment
 - b a cash receipt
 - c a credit sale
 - d cost of goods sold
 - e a purchase of inventory
 - f the receiving of inventory.
- 6 Explain the difference between a revenue and a cash receipt.
- 7 Give examples of items that are revenue for a given period but not receipts for that period, items that are receipts but not revenue, and items that are both revenue and receipts.
- 8 Explain the difference between an expense and a cash disbursement.
- 9 Give examples of items that are expenses for a given period but not cash disbursements for that period, items that are cash disbursements but not expenses, and items that are both expenses and cash disbursements.
- 10 Outline some basic differences between cash accounting and accrual accounting.
- 11 'The closer to cash, the more precise the measure.' Discuss this statement with respect to cash and accrual accounting.
- 12 'The more that accountants try to make financial statements economically relevant, the more they must include estimates and other sources of imprecision or error.' Discuss.
- 13 What is the purpose of accrual accounting adjustments?
- 14 For each of the accrual accounting adjustments, explain the impact on profit for the period and the balance sheet.
- 15 Your old school friend has joined the maintenance group of a large airline. He asks you the following question: 'Our customers pay us large amounts of cash before they fly but we call this a liability. Surely it has to increase profits?' How would you answer?
- 16 The accountant at a large mining company tells you that they have some contractors who do the work but often don't get around to billing for about three months after the job is complete. She notes: 'It's great for our cash flow, but causes us lots of work at year-end.' Explain this comment.
- 17 What is the purpose of depreciating noncurrent assets?
- 18 What is the difference between depreciation and accumulated depreciation?
- 19 For a manager thinking about disposing of some assets, why is book value important?
- 20 Respond, in point form, to the following complaint by a businessperson: 'I find modern financial accounting really annoying. The basis of financial strength is the availability and use of real resources, such as cash and machinery, yet accrual accounting produces a profit measure that is deliberately different from the cash

return earned by the business. Why is this so? Why should accrual accounting diverge from the measurement of cash flow?

21 On 31 December, the end of the accounting period of Ultra Corp., the company accountant is about to make some adjustments. Describe a set of circumstances where, in making the typical year-end adjustments:

- a an expense is debited and a liability is credited
- b an expense is debited and an asset contra account is credited
- c an asset is debited and revenue is credited
- d a liability is debited and revenue is credited.

22 If management wished to overstate profit during the year, consider the implications for each of the following adjustments (that is, what actions could be taken by fraudulent management to increase profits?):

- a prepayments
- b unearned revenue
- c accrued expenses
- d accrued revenue.

23 Accrual-based financial reports prepared by departments or governments will differ significantly from cash-based reports covering the same period. Provide some examples of the information provided in accrual-based financial reports but not cash-based financial reports.

PROBLEMS

PROBLEM 4.1

Identify events as accounting transactions

Beach Ltd experienced the following events. For each, say whether or not it is an accounting transaction and why, or why not.

- 1 The CEO decided that the company's main factory would be reorganised next month.
- 2 The company ordered shop supplies to be delivered in five days. Payment will be made after delivery.
- 3 The company received shop supplies it had ordered earlier in point 2, accompanied by an invoice from the supplier.
- 4 The company signed a new five-year lease on its Windsor warehouse.
- 5 The company sold some land, for which it would receive 10 annual payments, starting next year.
- 6 The company acquired a new truck for cash plus the trade-in of an old truck.
- 7 An employee was discovered to have stolen a large amount of cash.
- 8 The company was sued for a large amount by a customer who fell down in the car park.
- 9 The company announced a 2 per cent pay rise for all staff starting next month.

PROBLEM 4.2

Identifying events as accounting transactions

Which of the following events result in an accounting transaction for Clothing Ltd?

- 1 Clothing Ltd signed a contract to hire a new store manager for a salary of \$150 000 per annum. The manager will start work next month.
- 2 The founder of Clothing Ltd, who is also a major shareholder, purchased additional stock in another company.
- 3 Clothing Ltd borrowed \$230 000 from a local bank.
- 4 Clothing Ltd purchased a sewing machine, which it paid for by signing a note payable.
- 5 Clothing Ltd issued 10 000 shares to a private investor, who is also a car business owner, in return for a new delivery truck.
- 6 Two investors in Clothing Ltd sold their stock to another investor.
- 7 Clothing Ltd ordered some fabric to be delivered next week.
- 8 Clothing Ltd lent \$250 000 to a member of the board of directors.

PROBLEM 4.3

Identify accounting transactions

The following things happened to Bartlett Ltd last month. Decide if each is an accounting transaction and explain briefly why it is or it isn't.

- 1 A customer ordered \$6000 of products, to be shipped next month.
- 2 Another customer paid \$528 for some marketing advice from the company.
- 3 Bartlett's share price went up by \$0.50. As there are 100 000 shares outstanding, this was a value increase of \$50 000.
- 4 Bartlett ran an advertisement on TV, and promised to pay the TV station the \$2000 cost next month.
- 5 One of the company's employees worked overtime, earning \$120 that would be paid next pay period.
- 6 The company paid a teenager \$50 to compensate for a ripped shirt that occurred when the teenager tried to run away after being accused of shoplifting.
- 7 Bartlett received a shipment of new goods for sale, paying \$1000 cash and agreeing to pay the other \$12 250 in a few days.
- 8 Bartlett paid the other \$12 250.
- 9 The company made a donation to a political party of \$500. (The donation turned out later to have been against election law, to the company's embarrassment.)
- 10 Grand Bank made the company a \$20 000 short-term loan.

PROBLEM 4.4

Cash versus accrual accounting

Greenthumbs Ltd opened a gardening consulting company on 1 August 2022 with each of the two owners contributing \$20 000 cash. A one-year bank loan of \$80 000 at 6 per cent per annum was obtained from the bank on 1 August, with principal and interest to be repaid at the end of the loan. An insurance policy for 12 months was taken out on 1 August 2022 for \$600. Three months' office rental for \$900 was paid in advance on 1 August 2022. Consulting revenue of \$12 000 was earned during the month, but \$4000 had not been received at the end of August. A truck that cost \$36 000 was paid for in cash on 1 August. It had an expected life of three years and zero residual value. Cash expenses during the month were: wages, \$600; other expenses, \$400. Unpaid bills at month's end were: electricity, \$100; wages, \$200.

Prepare an income statement for August 2022 under (a) an accrual basis and (b) a cash basis of accounting.

PROBLEM 4.5

Cash versus accrual accounting

Penshurst Ltd began business on 1 July 2021 with each of the two owners contributing \$25 000 cash. The company paid \$2200 in advance for a two-year lease of its retail premises. Inventory worth \$3500 was purchased in the first month of operation; by 30 June 2022, \$1200 of that inventory remained. Sales revenue of \$9500 was invoiced during the year, although \$2000 of this amount is yet to be collected.

During the year, wages totalling \$1300 were paid to employees and \$900 was paid for various administrative expenses. The company received an advertising invoice for \$1100 as well as a utilities bill for \$385; these are yet to be paid as at 30 June 2022.

- 1 Prepare a cash-basis income statement for Penshurst Ltd for the year ended 30 June 2022.
- 2 Prepare an accrual-basis income statement for Penshurst Ltd for the year ended 30 June 2022.
- 3 Calculate the closing balance of the cash account.

PROBLEM 4.6

Revenue, expenses and cash

Mortdale Ltd provides one-day training programs in accounting. It charges \$7000 per day. The following events occurred for the company in the month of June 2022.

- a Received \$62 000 from accounts receivable for sales in previous months.
- b Paid three months' rent of \$36 000 covering 1 June 2022 to 31 August 2022.
- c Received orders for 70 days' training during the month. Delivered 60 days of the training during the month and received payment for 30 of these days.
- d Signed a contract to design a special program for lawyers at a price of \$50 000. Design will commence in July. Received a \$6000 deposit.
- e Paid \$500 000 for new equipment on 1 June and \$100 000 to install it. The equipment has a life of 10 years.
- f A contract was signed with a new CEO for \$1 000 000 per year. The CEO will start on 1 July.
- g Paid wages during the period of \$60 000 with accrued wages of \$10 000 owing at the end of the month.
- h Declared and paid a dividend of \$40 000.
- i Borrowed \$24 000 on 1 June from the bank at 10 per cent per annum. Interest and principal repayable in 10 months.

Required:

- 1 Determine total revenue for the month of June 2022.
- 2 List all expenses for the month of June 2022 (including dollar amounts).
- 3 Assume an opening balance in the cash account of \$600 000. What is the closing balance of this account?

PROBLEM 4.7

Revenue and expenses

Oatley Ltd started business on 1 July 2022 and had the following transactions on 1 July:

- a Issued 300 000 shares of \$1 for \$300 000 cash.
- b Bought equipment for \$400 000, paying cash. The equipment has a five-year life.
- c Bought \$115 000 inventory on credit.
- d Paid \$10 000 for a year's rent on a building.
- e Took out a two-year \$400 000 bank loan at an interest rate of 7 per cent per annum. The interest is not payable until the end of the loan.

Between 1 July and 31 December, the following transactions occurred:

- f Sold inventory that cost \$100 000 for \$180 000. All sales were on credit.
- g Paid \$50 000 to suppliers of inventory for the credit purchases in point c.
- h Collected \$90 000 from customers.
- i Paid salaries of \$20 000.
- j Received an \$8000 deposit from a customer for work to be completed next February.

On 31 December:

- k Salaries of \$6000 had been earned but not paid.
- l Owed \$15 000 by the bank for interest.

For the period 1 July to 31 December 2022:

- 1 List all revenues (including dollar amounts) that will appear in the income statement.
- 2 List all expenses (including dollar amounts) that will appear in the income statement.
- 3 List all operating cash inflows and outflows (refer to Chapter 1).
- 4 Calculate the closing balance of all asset accounts (note that all opening balances are zero).

PROBLEM 4.8

Revenues, expenses and liabilities

COMO LTD
BALANCE SHEET AS AT 31 DECEMBER 2021

Assets	\$	Liabilities	\$
Cash	168 000	Accounts payable	200 000
Accounts receivable	312 000	Wages payable	16 000
Inventory	320 000	Unearned service revenue	<u>256 000</u>
Prepaid rent expense	<u>88 000</u>	Total current liabilities	472 000
Total current assets	<u>888 000</u>	Long-term debt	<u>0</u>
Land	1 520 000	Total liabilities	<u>472 000</u>
Equipment	3 200 000	Shareholders' equity	
Less accumulated depreciation	<u>(640 000)</u>	Share capital	4 240 000
Total noncurrent assets	<u>4 080 000</u>	Retained profits	<u>256 000</u>
	<u> </u>	Total shareholders' equity	<u>4 496 000</u>
Total assets	<u>4 968 000</u>	Total liabilities and shareholders' equity	<u>4 968 000</u>

The following transactions occurred during the year ended 31 December 2022 for Como Ltd:

- a Issued share capital for \$400 000 cash.
- b Expiration of prepaid rent expense (i.e. prepaid rent expense balance to zero).
- c Purchased \$90 000 of inventory on credit.
- d Paid \$56 000 to accounts payable.
- e Sold inventory costing \$200 000 for \$380 000. All sales are on credit.
- f Collected \$120 000 from accounts receivable.
- g Depreciated equipment for the year using the straight-line method (10 per cent per annum).
- h Dividends paid totalled \$65 000.
- i Borrowed \$150 000 on 1 January 2022. The loan is due on 30 June 2024 and carries a 10 per cent per annum interest rate. Paid \$13 000 interest on this loan during the year ended 31 December 2022.
- j On 1 April paid \$30 000 for an insurance policy covering 1 April 2022 to 31 March 2023.
- k Paid wages of \$170 000; wages of \$30 000 had been earned but not paid to the first pay period in 2023.
- l Is owed \$9500 in interest from the bank at year-end.
- m At 31 December 2022 the unearned revenue account balance had reduced to \$10 000.

Required:

- 1 List all revenues (including dollar amounts) that will appear in the income statement for the year ended 31 December 2022.
 - 2 List all expenses (including dollar amounts, ignoring taxation) that will appear in the income statement for the year ended 31 December 2022.
 - 3 List all current liabilities at 31 December 2022 (including dollar amounts).
- Show your calculations for each of the account balances.

PROBLEM 4.9

Adjustments

The financial year-end for Jannali Ltd is 30 June.

- a Prepaid insurance as at 1 July 2021 was \$6000. This represents the cost of an insurance policy that expires on 1 March 2022.
- b Jannali was entitled to a dividend revenue of \$4000 which will not be received until mid-July.

- c Commissions to sales personnel for the five-day working week ending 2 July 2022, totalling \$9600, will be paid on 2 July.
- d Sales revenue for the year included \$5700 of customer deposits for products that have not yet been shipped to them.
- e A total of \$900 worth of stationery was charged to the office supplies expense during the year. On 30 June, \$490 worth of stationery is still considered useful for next year.
- f The company has a bank loan and pays interest annually (in arrears). The estimated interest cost for the calendar year ended 30 June 2022 is \$5000. The interest will be paid in July.

Required:

Show the effect of each of points a–f on the accounting equation at 30 June 2022.

PROBLEM 4.10

Prepayments and accrued expenses

- 1 In a recent annual report the following information is provided:

	2022 \$m	2021 \$m
Prepayments	50.8	52.0

Assume this amount all related to insurance and that \$70 million cash was paid during the year to the insurance company. What is the insurance expense for the 2022 financial year?

- 2 A large soft drink manufacturer, in a recent annual report, included an amount of \$306.7 million in accrued charges (\$297.1 million in 2021). Assume that all these accrued charges related to wages. If the wages paid during the year were \$500 million, what was the wages expense for 2022?
- 3 In note 10 of its 30 September 2022 annual report, OK Limited shows the following:

	2022 \$m	2021 \$m
Prepayment and other assets	36.2	34.4

Assume that this amount is all related to insurance and that \$30 million cash was paid during the year to the insurance company. What is the insurance expense for the year ended 30 September 2022?

PROBLEM 4.11

Adjusting journal entries

The annual accounting period for DEF Ltd ends on 30 June. Prepare adjusting entries for each of the following:

- 1 DEF was entitled to a commission of \$2000 during June, but the commission will not be received until July.
- 2 Wages of \$3000 for the five-day work period ending 3 July will be paid on 3 July. This is a Friday.
- 3 DEF Ltd has a \$100 000 fixed deposit at 12 per cent, where interest is paid in arrears on 30 April and 30 November.
- 4 The office supplies account had an opening balance of \$1000 on 1 July 2021. Supplies of \$8000 were purchased during the year, and \$900 of supplies are on hand on 30 June 2022.

PROBLEM 4.12

Effects on the income statement and balance sheet

Forbes Ltd's annual accounting year ends on 30 June. It is 30 June 2022 and all of the 2022 entries except the following adjusting entries have been made.

- a On 1 April 2022 the company borrowed \$80 000 from a local bank at 5 per cent per annum interest. The principal and interest are payable on 30 June 2023. The borrowing was correctly recorded but no adjustment has been made for interest.
- b On 1 March 2022 Forbes collected six months' rent of \$18 000. At that date Forbes debited Cash and credited Unearned rent revenue for \$18 000.

- c On 1 October 2021 Forbes paid a one-year premium for fire insurance, \$18 000, for coverage starting on that date. Cash was credited and prepaid insurance was debited for this amount.
- d At 30 June 2022 wages earned by employees totalled \$43 000. The employees will be paid in July 2022.
- e On 30 June 2022 the company estimated it owed \$7000 for 2022 electricity costs. The amount will be paid when the invoice is received in July 2022.
- f Office supplies on hand at 30 June 2021 totalled \$1000. Additional office supplies costing \$2400 were purchased and debited to Office supplies (asset account). The count of supplies on hand at year-end was \$800.

Required:

Using the following headings, indicate the effect of each adjusting entry and the amount of the effect. Use + for increase, – for decrease and NE for no effect.

Assets	Liabilities	Revenues	Expenses
a			
b			
c			
d			
e			
f			

PROBLEM 4.13

Adjusting entry for prepaid expense

NOP Ltd purchased a one-year insurance policy on 1 April. The entire premium of \$8000 was recorded by debiting prepayments. Year-end is 30 June.

- 1 Give the 30 June entry using transaction analysis.
- 2 What amount should be reported in the 30 June balance sheet for prepayments?
- 3 If no adjusting entry was made on 30 June, by how much would net profit be overstated or understated? Would assets be overstated or understated?

PROBLEM 4.14

Adjusting entry for accrued expense

ABC Ltd pays its employees every Friday for a five-day working week from Monday to Friday. The weekly payroll amounts to \$150 000. The accounting year-end is 30 June.

- 1 Assuming that 30 June falls on Wednesday, show the effect on the accounting equation using transaction analysis.
- 2 If no adjusting entry was made on 30 June, by how much would net profit be overstated or understated? What errors would be in the balance sheet?
- 3 Using transaction analysis, show the entry to pay the staff on 2 July.

PROBLEM 4.15

Adjusting entry for revenue received in advance

XYZ Ltd rents one office to a tenant who paid three months' rent in advance on 1 June. The firm credited unearned rental revenue to record the \$6000 received. Year-end is 30 June.

- 1 Prepare the adjusting entry for 30 June.
- 2 What would be the effects on the firm's financial statements if the adjusting entry was omitted?
- 3 Prepare the entry in the next period to recognise the remaining portion of the rent revenue.

PROBLEM 4.16

Effects of errors on the financial statements

CBD made the following errors in adjusting the accounts at year-end (30 June).

- a Did not accrue \$1400 owed to the company by another company renting part of the building as a storage facility.
- b Did not record \$15 000 depreciation on equipment costing \$115 000.
- c Failed to adjust the unearned fee revenue account to reflect that \$1500 was earned by the end of the year.
- d Recorded a full year of accrued interest expense on a \$17 000, 9 per cent loan payable that has been outstanding only since 31 May.
- e Failed to adjust prepaid insurance to reflect that \$650 of insurance coverage has been used.

Required:

- 1 Using the following headings, indicate the effect of each error and the amount of the effect (i.e. the difference between the entry that was or was not made and the entry that should have been made). Use O if the effect overstates the item, U if the effect understates the item, and NE if there is no effect.

Transaction	Balance sheet			Income statement		
	Assets	Liabilities	Shareholders' equity	Revenues	Expenses	Net profit
a						
b						
c						
d						
e						

- 2 For each error, prepare the adjusting journal entry:

- a that was made (if any)
- b that should have been made at year-end.

PROBLEM 4.17

Journal entries for revenue and expense recognition

Entertainment Ltd will be hosting a concert on 29 August 2022. Entertainment Ltd has the following transactions in August 2022 associated with the concert and its business. Prepare the journal entries (for 1–3) in good form using the most appropriate account titles (as referenced in the table shown).

Accounts payable	Concert equipment	Prepaid venue expense
Accounts receivable	Concert revenue	Retained earnings
Building	Long-term investment	Unearned revenue
Cash	Note payable	Venue expense
Cost of goods sold	Note receivable	Wages expense

Transactions:

- 1 Entertainment Ltd sold 10 000 tickets and collected payment on 1 August for the 29 August concert. Tickets were priced at \$50 each.
- 2 Entertainment Ltd paid \$90 000 cash to TEK Arena on 4 August to host the 29 August concert.
- 3 Entertainment Ltd performed the concert on 29 August. (Note: there are two transactions necessary to be recorded on 29 August.)

PROBLEM 4.18

Adjusting entry for accrued expenses

- 1 Employees of Donovan Ltd are paid every Friday for the five-day working week from Monday to Friday. The weekly wages expense is \$115 000. The accounting year-end is 31 December. Assume this falls on a Thursday.
 - a Prepare the adjusting entry for the year-end.

- b If no adjusting entry is made on 31 December, what will be the impact on net profit? What will the errors in the balance sheet be?
- c What is the journal entry made on 1 January when the staff are paid?
- 2 On 1 July 2022, Donovan obtained a bank loan of \$100 000 at 12 per cent interest, payable yearly in arrears. The accounting year-end is 31 December.
- a What is the adjusting entry required on 31 December 2022?
- b The company's accountant forgets to prepare the entry for point a. What will the effect of this omission be on Donovan's financial statements?
- c Prepare the journal entry for 1 July 2023, when the first interest payment is made.

PROBLEM 4.19

Adjusting journal entries

Jindabine Trust Ltd cleans trucks for customers. It is completing the account process for the year just ended 30 June 2022. The transactions during 2022 have been posted to the ledger accounts. The following data with respect to adjusting entries are available:

- 1 Jindabine cleaned three trucks for customers at the end of June, but did not record the service for \$2700.
- 2 On 1 May 2022, Jindabine paid \$1200 to the local newspaper for an advertisement to run each Thursday for 12 weeks. All ads have been run except for three Thursdays in July to complete the 12-week contract.
- 3 Jindabine borrowed \$250 000 at 12 per cent annual interest rate on 1 November 2022 to expand its storage facility. The loan requires Jindabine to pay the interest quarterly until the note is repaid in two years. Jindabine paid quarterly interest on 1 February and 1 May.
- 4 Jindabine received \$4500 on 1 June 2022 to store and maintain a truck until 1 November 2022. Jindabine credited the full amount to *Unearned revenue* on 1 June.
- 5 Jindabine's new equipment cost \$220 000; \$22 000 was the estimated depreciation in 2022.
- 6 Supplies on hand at 1 July 2021 totalled \$16 500. Supplies purchased debited to *Supplies on hand* during the year amounted to \$46 000. The year-end count showed \$12 400 of supplies on hand.
- 7 Wages earned by employees during June 2022, unpaid and unrecorded at 30 June 2022, amounted to \$3800. The next pay date will be 5 July 2022.

Prepare the adjusting entries that should be recorded for Jindabine at 30 June 2022.

PROBLEM 4.20

Accrual versus cash accounting

The balance sheet of ABC Ltd as at 31 December 2021 and the cash receipts and payments for the year ended 31 December 2022 are as shown.

ABC LTD
BALANCE SHEET AS AT 31 DECEMBER 2021

	\$		\$
Assets		Liabilities	
Cash	5 000	Accounts payable	10 000
Accounts receivable	10 000	Bank loan	80 000
Inventory	20 000		
Plant and equipment	200 000	Shareholders' equity	
Land	<u>100 000</u>	Share capital	200 000
Total	<u>335 000</u>	Retained profits	<u>45 000</u>
		Total	<u>335 000</u>

CASH RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED 31 DECEMBER 2022

Receipts	\$	Disbursements	\$
Cash sales	150 000	Salaries	65 000
Total collected from accounts receivable	100 000	Repairs	2 000
		Rates and taxes	3 000
		Interest	6 000
		Total payments to accounts payable	130 000
		Insurance	8 000
	<u>250 000</u>		<u>214 000</u>

Additional information:

- a As at 31 December 2022, the balance of accounts receivable was \$25 000 and the balance of accounts payable was \$15 000.
- b Salaries are now paid monthly on the second of the month for the preceding month. Wages and salaries total \$7000 for the month of December. This was paid on 2 January 2023.
- c Plant and equipment is shown net of accumulated depreciation of \$50 000. Depreciation expense for the year is calculated using the straight-line method at 10 per cent per annum.
- d The bank loan accrues interest at a rate of 10 per cent per annum, payable on 30 March and 30 September. The loan was taken out on 31 December 2021.
- e A physical stocktake, as at 31 December 2022, revealed that inventory costing \$23 000 was on hand. Cost of goods sold for the year was calculated as \$132 000.
- f The insurance premium of \$8000 provides cover for the year ended 30 September 2023.

Required:

- 1 Calculate the following:
 - a total sales for the period
 - b gross profit
 - c salaries expense and accrued salaries
 - d interest expense and accrued interest
 - e insurance expense and prepaid insurance.
- 2 What was the profit/(loss) for the period?
- 3 Prepare the balance sheet as at 31 December 2022.

CASES**CASE 4A****Woolworths Limited**

Refer to the extracts of the annual report of Woolworths Limited in the appendix. All questions relate to the consolidated accounts.

- 1 What would be the most likely source document used by Woolworths Limited to record:
 - a a sale?
 - b a purchase of goods for sale?
 - c a payment to suppliers?
 - d a payment of wages?
 - e interest expense?
- 2 Is there any indication of the following in the accounts:
 - a prepayments?
 - b unearned revenue?

- c accrued expenses?
 - d accrued revenues?
- 3 What is the net book value for:
- a freehold land, warehouses, retail and other properties?
 - b plant and equipment?
- 4 Give examples from Woolworths' financial statements to indicate that it uses accrual accounting.
- 5 What is the depreciation for the year on plant and equipment and what is the balance of accumulated depreciation at year-end for plant and equipment?

CASE 4B**Accrual accounting adjustments**

Following are extracts of the 2020 Telstra Limited Statement of Financial Position:

**TELSTRA GROUP
STATEMENT OF FINANCIAL POSITION AS AT 30 JUNE**

	2020 \$m	2019 \$m
Current assets		
Cash and cash equivalents	2.6	499
Trade and other receivables and contract assets	3.4	5 121
Deferred contract costs	3.9	82
Inventories	3.5	418
Derivative financial assets	4.3	147
Current tax receivables	2	7
Prepayments	265	457
Assets classified as held for sale	3.10	—
Total current assets	6 534	7 303
Current liabilities		
Trade and other payables	3.6	3 980
Employee benefits	5.1	727
Other provisions	7.3	124
Lease liabilities	3.3	611
Borrowings	4.3	2 763
Derivative financial liabilities	4.3	54
Current tax payables	2.4	224
Contract liabilities and other revenue received in advance	3.7	1 611
Liabilities classified as held for sale	3.10	—
Total current liabilities	10 094	9 553

Source: Telstra Annual Report 2020. Reproduced with permission Telstra Corporation Limited.

State where you believe the following items would be included. If an item is listed under a different name, state what it is.

- a Prepayments
- b Accrued expenses
- c Unearned revenue
- d Accrued revenue

CASE 4C

Accrual accounting adjustments

Go to the 2020 financial statements of Australia Post (https://auspost.com.au/content/dam/auspost_corp/media/documents/2020-australia-post-annual-report.pdf) and find where the following items are located (they will be on the balance sheet or in one of the notes related to the balance sheet):

- 1 Prepayments
- 2 Accrued expenses
- 3 Unearned revenue
- 4 Accrued revenue.

State where you found the items and the dollar amount of each. If an item is listed under a different name, state what it is.

HOW'S YOUR UNDERSTANDING? SOLUTIONS

4A (i) and (iv) are transactions that should be recorded.

- 4B** (i) both
(ii) decreases cash
(iii) decreases cash
(iv) decreases cash
(v) increases expenses
(vi) decreases cash.

4C \$108 000 (\$60 000 + \$40 000 + \$8000).

4D \$800 000 (\$200 000 + \$600 000).

4E \$33 000 asset in the balance sheet (11/12 x \$36 000).

- 4F** (i) Cash sale
(ii) Receipt of payment by a company such as an airline with the service to be delivered in next financial year
(iii) Credit sale

4G They both result in an expense when assets are used up (e.g. equipment and inventory).

4H \$28 000 (\$4000 + \$30 000 – x = \$6000; x = \$28 000).

4I Cash increases; revenue increases

- 4J** (i) $\$100\ 000 - \$20\ 000 = \$80\ 000$.
(ii) Current liabilities

4K Income statement: expenses would be understated and therefore profit overstated. Balance sheet: liabilities would be understated and retained profits would be overstated (because profit was overstated).

4L Current assets.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

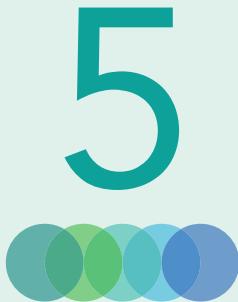
- 1 Revenues: \$
Sales 350 000
- 2 Expenses:
COGS 120 000
Interest ($\$200\ 000 \times 10\%$) 20 000
Wages ($\$180\ 000 + \$40\ 000$) 220 000
Electricity 22 000
Insurance ($\$24\ 000 \times 9/12$) 18 000
- 3 $\$600\ 000 - \$56\ 000 + \$220\ 000 - \$60\ 000 + \$200\ 000 - \$8\ 000 - \$180\ 000 + \$80\ 000 - \$24\ 000 = \$772\ 000$
- 4 Inventory: $\$170\ 000 - \$120\ 000 = \$50\ 000$
Accounts receivable: $\$350\ 000 - \$220\ 000 = \$130\ 000$
Accounts payable: $\$170\ 000 - \$56\ 000 = \$114\ 000$
Prepayments: $3/12 \times \$24\ 000 = \$6\ 000$.

PRACTICE PROBLEM B

1	Account Name	Dollar Amount
	Sales revenue	380 000
	Interest revenue ($\$16\ 000 + \$3\ 000$)	19 000
2	Account Name	Dollar Amount
	COGS	160 000
	Depreciation expense ($\$3M \times 20\%$)	600 000
	Interest expense ($\$500\ 000 \times 6\% \times 6/12$)	15 000
	Supplies expense	14 000
	Wages expense ($\$270\ 000 - \$60\ 000 + \$40\ 000$)	250 000
	Rent expense	20 000

PRACTICE PROBLEM C

	Revenues	Expenses	Assets	Liabilities
1	NE	+ 100 000	-90 000	+10 000
2	NE	NE	+ 70 000	+70 000
3	NE	+ 15 000	NE	+15 000
4	NE	+ 3 200	+ 800	+4 000
5	NE	+ 18 000	-18 000	NE



Annual reports, regulation, internal control, ethics and auditing

ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** list the content of Australian annual reports (5.1)
- LO2** understand the accounting regulatory environment in Australia (5.2)
- LO3** understand the importance of international accounting standards (5.3)
- LO4** describe the type of judgements financial managers need to make in respect of financial reporting (5.4)
- LO5** describe management's responsibilities for maintaining an appropriate internal control system (5.5, 5.6)
- LO6** outline the components of a good internal control system (5.5, 5.7)
- LO7** make judgements of the appropriate responses to certain ethical dilemmas facing managers (5.8)
- LO8** explain the nature and purpose of an audit (5.9)
- LO9** describe the types of audit reports issued (5.9)
- LO10** understand the importance of independence of the audit function (5.10)

CHAPTER OVERVIEW

At this point, you have read about the importance of financial statements for both managers and external users of these reports. These financial statements are used by investors in their decisions on buying and selling of shares and, therefore, are important for capital markets. Lenders, employees, governments and others make considerable use of these financial statements.

So, an important question all users of financial statements need to know is: Are financial statements being prepared reliably? At the most basic level, users want to know that the financial statements are not deliberately misleading. This was referred to as *faithful representation* in Chapter 1, which we listed as one of the two fundamental qualitative characteristics of financial statements. In this chapter we will canvass a range of issues related to increasing the trust of users of financial reports. These include:

- a regulatory framework to ensure credible financial reporting. This would include accounting principles, concepts and standards to give guidance to the judgements of those preparing the accounts
- an internal control system that helps ensure the reliability of financial statements
- a set of ethical standards that govern the behaviour of both those that prepare the financial statements and those that audit the financial statements
- a report on the organisation's financial statements by an independent auditor.

5.1 The annual report and financial statements

Financial reporting is important for many organisations. All incorporated companies, and most other legally constituted organisations, are required to prepare a set of financial statements, at least annually, that explains their financial performance and position. Listed companies, which are those whose shares are traded on a stock exchange, issue half-yearly financial information. Most sole traders and partnerships also prepare annual financial statements, at their bankers' request or for inclusion with the proprietor's or partners' income tax returns, even if there are no other reasons for doing so.

LO1

The conceptual framework and accounting standards require a complete set of financial statements, with five components:

- 1 a statement of financial position at the end of the period (commonly referred to as a balance sheet)
- 2 a statement of financial performance that includes a statement of profit or loss (commonly referred to as an income statement)
- 3 a statement of changes in equity for the period
- 4 a statement of cash flows for the period
- 5 notes to the financial statements, comprising a summary of significant accounting policies and other explanatory information.

Note that accounting standards now use the term 'a statement of profit or loss' but state that other titles can be used. For example, many companies commonly use 'income statement' or 'statement of comprehensive income'.

5.2 Accounting regulation in Australia

LO2

Earlier chapters have emphasised the importance of financial accounting information to various user groups. Credible financial reporting is hard to achieve without an accounting regulatory system. Effective regulation depends on the existence of accounting rules based on the appropriate concepts to guide information processing and disclosure. Also necessary is an enforcement mechanism that ensures sufficient compliance with the rules. The *Corporate Law Economic Reform Program Act 1999* (CLERP Act 1999), which came into effect on 1 January 2000, modified the institutional arrangements for the setting of accounting standards in Australia, recognising that financial reporting requirements can play an important role in Australian companies' ability to compete effectively and efficiently in a global environment.

The purpose of this section is to provide an overview of the Australian regulatory system as it relates to corporate financial reporting. Figure 5.1 depicts the main elements in the system.

The government's role is highlighted in Figure 5.1. After an agreement with the states and the Northern Territory in 1990, the Federal Government took over the responsibility for companies and securities law in order to overcome the constitutional obstacles. The broad legal framework for corporate financial reporting is set out in the *Corporations Act 2001*.

Also shown are two statutory bodies established by the *Australian Securities and Investments Commission Act 2001*: the Australian Securities and Investments Commission (ASIC) and the Financial Reporting Council (FRC). Both play an important role in the operation and oversight of financial reporting in Australia. ASIC is the agency charged with the administration and enforcement of the *Corporations Act 2001*, while the FRC is responsible for broadly overseeing the accounting and auditing standard-setting process in the private and public sectors.

ASIC regulates Australian companies, financial markets, financial services organisations and professionals who deal and advise in investments, superannuation, insurance, deposit-taking and credit. Its roles include:

- the consumer credit regulator: ASIC licenses and regulates people and businesses engaging in consumer credit activities (including banks, credit unions, finance companies, and mortgage and finance brokers)
- the markets regulator: ASIC assesses how effectively authorised financial markets are complying with their legal obligations to operate fair, orderly and transparent markets.

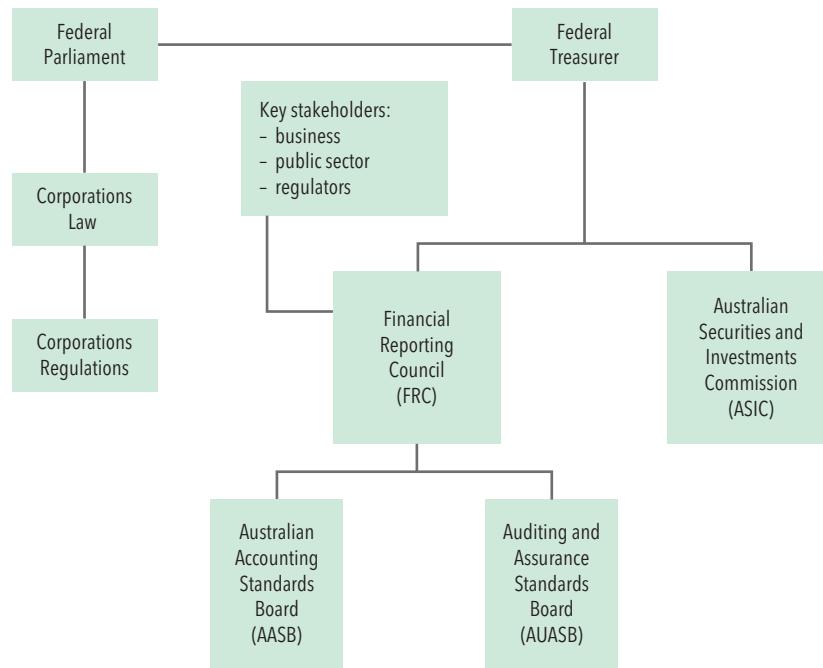


FIGURE 5.1 The regulatory framework

ASIC has responsibility for the supervision of trading on Australia's domestic licensed equity, derivatives and futures markets

- the financial services regulator: ASIC licenses and monitors financial services businesses to ensure that they operate efficiently, honestly and fairly; for example superannuation, managed funds, shares and company securities, derivatives and insurance.

Source: Adapted from Australian Securities and Investments Commission.

The role of ASIC is to regulate and enforce laws that promote honesty and fairness in financial markets, products and services, and in Australian companies. In doing so, it underpins the strength, growth and international reputation of Australia's financial markets. As part of this role, it monitors compliance with accounting standards and takes appropriate enforcement action where necessary. ASIC's responsibilities include oversight of the audit function, including the registration of auditors and enforcing auditor independence. In this latter role it operates an auditor inspection program of all the large audit firms and some of the smaller ones. Each year it publicly reports on the findings of this inspection process.

While the AUASB sets auditing standards, ASIC is responsible for assessing compliance with the auditing standards and for taking enforcement action where appropriate. ASIC carries out a regular inspection process (about every 18 months) of a sample of audits mainly from the larger audit firms. They issue an inspection report covering the period, which includes details of deficiencies found. AUASB and the audit firms work with ASIC to address any matters identified through their inspection program.

The objective of ASIC's audit inspections is to promote improved audit quality. ASIC's reviews focus on audits of listed entities and the largest six audit firms. The purpose of the audit inspection report is to inform all audit firms, the investing public, companies, audit committees and other interested stakeholders of the findings. It should be noted that ASIC's findings do not necessarily mean that the financial reports audited were materially misstated. Rather, it is ASIC's view that the auditor may not have a sufficient basis to support their opinion on the financial report.

The other statutory body, the FRC, is an advisory council that sets the general strategic direction for the development of accounting standards. It reports to the Treasurer, who also appoints the members of the FRC. Members' appointments are based on nominations put forward by key stakeholder groups: representatives from the business community, the public sector, regulatory agencies and the professional accounting bodies.

These groups all have an interest in the standard-setting process, and representation on the FRC allows them an opportunity to provide input to the process, resulting in greater ownership of the resulting standards. The FRC's membership, broadly based upon a variety of stakeholder groups, enables the accounting standard-setting process to be more responsive to the needs of the users and preparers of financial statements.

One of the key functions of the FRC is to oversee the operation of the Australian Accounting Standards Board (AASB). The AASB prepares, approves and issues accounting standards for the purposes of the Corporations Act 2001, and for the public and not-for-profit sectors. It comprises a full-time chairperson, appointed by the Treasurer, and nine part-time members. Members are appointed by the FRC, selected on the basis of their knowledge and experience in business, accounting, law or government. The FRC is also responsible for approving the priorities, business plan, budget and staffing arrangements of the AASB. However, it cannot influence the AASB's technical deliberations, and, therefore, the content of particular accounting standards.

The FRC also oversees the Auditing and Assurance Standards Board (AUASB). The AUASB is responsible for the development and maintenance of auditing and assurance standards. It consists of 10 members appointed by the FRC, with the chairperson appointed by the Treasurer.

In addition to this regulatory framework, accountants will belong to the accounting profession, represented in Australia by CPA Australia, Chartered Accountants Australia and New Zealand (CAANZ) and the Institute of Public Accountants (IPA). The Australian professional accounting bodies have established the Accounting Professional and Ethical Standards Board (APESB). This body issues standards to establish and monitor the independence and ethical behaviour of professional accountants. Of particular interest is APES 110 *Code of Ethics for Professional Accountants*, which is discussed later in this chapter.

Companies that are listed on the Australian Securities Exchange Limited (ASX) must comply with ASX listing rules if they wish to remain listed on the ASX. The listing rules may be enforced by the ASX's power of suspension or delisting. Moreover, the rules have statutory backing in the Corporations Act 2001, as a court order may be obtained to enforce them.

Corporate governance is an important aspect of ASX rules. The rules require a company to state whether it has an audit committee and, if it does not, to explain why not. In addition, companies are required to state, in their annual reports, the main corporate governance practices they had in place during the reporting period. To assist companies, an indicative list of corporate governance recommendations are not in the ASX Listing Rules themselves – they are published by the ASX-convened Corporate Governance Council, which brings together various business shareholder and industry groups. Under the ASX Listing Rules, ASX-listed entities are required to benchmark their corporate governance practices against the Council's recommendations and, where they do not conform, to disclose that fact and the reasons why (see Exhibit 5.1).

EXHIBIT 5.1

THE ESSENTIAL CORPORATE GOVERNANCE PRINCIPLES

- 1 Lay solid foundations for management and oversight:** A listed entity should clearly delineate the respective roles and responsibilities of its board and management and regularly review their performance.
- 2 Structure the board to be effective and add value:** The board of a listed entity should be of an appropriate size and collectively have the skills, commitment and knowledge of the entity and the industry in which it operates, to enable it to discharge its duties effectively and to add value.
- 3 Instil a culture of acting lawfully, ethically and responsibly:** A listed entity should instil and continually reinforce a culture across the organisation of acting lawfully, ethically and responsibly.
- 4 Safeguard the integrity of corporate reports:** A listed entity should have appropriate processes to verify the integrity of its corporate reports.
- 5 Make timely and balanced disclosure:** A listed entity should make timely and balanced disclosure of all matters concerning it that a reasonable person would expect to have a material effect on the price or value of its securities.

- 6 **Respect the rights of security holders:** A listed entity should provide its security holders with appropriate information and facilities to allow them to exercise their rights as security holders effectively.
- 7 **Recognise and manage risk:** A listed entity should establish a sound risk management framework and periodically review the effectiveness of that framework.
- 8 **Remunerate fairly and responsibly:** A listed entity should pay director remuneration sufficient to attract and retain high quality directors and design its executive remuneration to attract, retain and motivate high quality senior executives and to align their interests with the creation of value for security holders and with the entity's values and risk appetite.

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5.3 International financial reporting standards

LO3 Over fifty years ago, the International Accounting Standards Board was established to develop a single set of international accounting standards. The benefit of establishing a single set of global accounting standards is that it enables capital providers to assess and compare intercompany performance in a much more meaningful, effective and efficient way than was possible when hundreds of countries set their own accounting standards. These international financial reporting standards (referred to as IFRSs) are now, along with US GAAP ('generally accepted accounting principles'), one of the two globally recognised financial reporting standards.

While the adoption of IFRSs in most major capital markets, except the United States, represents a considerable achievement for the IASB, there is still uncertainty about the adoption of IFRSs by the USA. Since 2001, the IASB and the US Financial Accounting Standards Board (FASB) have been actively working towards convergence of IFRSs and US GAAP. Convergence means that both financial reporting frameworks will be alike so that international trade, stock markets, transfers of funds and other international business could be assisted, or at least not impeded. Both boards have also acknowledged their commitment to developing high-quality, compatible accounting standards that can be used for both domestic and cross-border financial reporting. However, progress on key convergence projects has been described as mixed and has been slower than anticipated. While progress has been made, many prominent accountants suggest that it could be many more years before financial accounting standard-setting boards achieve their goal of a single global set of accounting standards.

Accounting principles and the use of accounting information

How do accountants decide what accounting is needed and then put their decisions into practice? This section outlines the conceptual background that guides accountants. Doing accounting takes expert knowledge, considerable experience and continuous attention to new problems and solutions. Concepts and principles are very important in accounting, because they form a logical structure that practising accountants use every day to consider problems, make or recommend decisions and explain solutions.

Applying accounting standards and principles depends on the particular accounting entity: the organisation for which the accounting is being done. The local coffee shop is just as appropriate an entity to be accounted for as are the groups of corporations making up Woolworths or Westpac, but decision criteria would imply different accounting needs for the coffee shop entity, the retailer or the bank, so generally accepted accounting principles would be applied differently for these entities.

A phrase often used in relation to accounting's conceptual structure is 'generally accepted accounting principles' (GAAP). These are the rules, standards and usual practices that companies are expected to follow when preparing their financial statements. They are a combination of the authoritative standards and concept statements issued by accounting standard-setters – such as the Australian Accounting Standards Board (AASB) – and the accepted ways of doing accounting that are not included in such standards. Year by year, the set of authoritative standards gets larger, but the world continues to increase in complexity, so the standards are never extensive enough to include everything.

The development of GAAP can be traced back to the evolution of financial accounting, as well as to the efforts of standard-setting bodies that attempted to improve accounting principles and practices by increasing the authoritative, documented part of GAAP. Until the 20th century was well underway, authoritative accounting standards did not exist. The catalyst that produced increased financial disclosure and brought more rules governing it was the stock market crash of 1929. Poor financial reporting and disclosure were seen as contributing to the crash. It was argued that, had investors been better informed, they could have made sounder financial decisions, thus preventing the stock market collapse and its harmful economic and social consequences.

In Australia, the main GAAP consist of accounting standards and the conceptual framework. Think of them as a package that together forms GAAP.

While, for many years, there were significant differences in accounting standards between countries, more recently the International Accounting Standards Board (IASB) issued a whole series of accounting standards. In Australia (and in many other countries), the local standard setter uses the IASB pronouncements as the 'foundation' pronouncements, to which it adds material detailing the scope and applicability of a pronouncement in the Australian environment. Additions are made, where necessary, to broaden the content to cover sectors not addressed by an IASB pronouncement, and domestic, regulatory or other issues.

General concepts and principles to be used in preparing and presenting financial statements are set out in the *Framework for the Preparation and Presentation of Financial Statements*. (This is cited in the Australian Accounting Standards and in this book as the Framework.) This Framework has important implications for the content of financial statements, so we cover it in Chapter 8 in more detail.

Managers should be interested in accounting standards for several reasons. On the positive side, standards should:

- make reports on managers' performance clearer
- make it easier to make comparisons with other companies
- reduce the costs of accounting (each company would not have to work through and invent accounting methods on its own)
- increase the company's credibility in the eyes of important users who utilise financial statements in general.

On the negative side:

- standards may specify general methods that do not work well for, or even mismeasure, some specific companies or situations
- some complex standards may be quite costly to follow for some companies
- new standards may cause difficulty for loan agreements, bonus plans or other arrangements that depend on accounting information, and were agreed to before the implementation of the new standards.

5.4 Background to accounting policy choices

The many differences among organisations, the complexity of users' demands for information and the regulatory authorities generally do not specify a single solution, and in the face of all this variation and complexity, allow a diversity of financial accounting methods, which form part of GAAP. Thus, organisations have some choices as to how to prepare financial statements to suit their circumstances. Analysing financial performance and position, and understanding the effects of such accounting policy, require knowledge of accounting methods, the principles of accrual accounting and GAAP that guide and constrain choices, and methods of analysis. Financial managers need to make many judgements in applying GAAP and in interpreting financial statements. It also means that users of accounting reports need some form of verification that appropriate choices and judgements have been made.

LO4

What is an accounting policy?

Imagine the following scenario: a new financial manager for MegaMega Stores Ltd has to decide whether or not each sales invoice should be recorded as revenue and so, each time, phones the CFO and asks whether that invoice should be recorded. You are probably thinking this is pretty silly and a waste of time and you

would be correct in thinking that. What the company needs to do is decide, *in advance and in general*, what sort of transaction constitutes a sale that is to be recorded as revenue. This decision can then be communicated to all accounting staff, who can apply the criteria to each invoice, and therefore decide what to record without phoning the CFO. In fact, it will be built into the software that is used to record the accounting data.

An accounting policy is a decision made in advance about how, when and whether to record or recognise something. When you choose the location of an account in the financial statements (such as putting it in current liabilities rather than noncurrent liabilities), you are making an accounting policy choice!

Typically, companies make policy choices in areas such as:

1 What accounting methods will be used:

- how to value receivables, including how to estimate an allowance for uncollectable amounts (Chapter 10)
- how to value inventory including cost flow assumptions (Chapter 11)
- how to compute depreciation; for example, the method and the life of the asset (Chapter 12)
- which expenditures on fixed assets should be capitalised (added to the asset accounts) and which should be included with expenses such as repairs and maintenance (Chapter 12)
- which product development expenditures should be expensed and which (if any) should be included in assets (called 'capitalisation') (Chapter 12)
- when to recognise liabilities (Chapter 13)
- what method to use to determine revenue recognition for partly completed projects (Chapter 15).

These choices are generally outlined in Note 1 of the financial statements in the annual report.

2 What information should be disclosed. Examples of disclosure policy include:

- how much detail to disclose of certain operating expenses (Chapter 13)
- how much to disaggregate financial information for segments of a company (e.g. by geographical area)
- the amount of detail given in the accounting policy choice note (Note 1 of the financial statements).

3 How accounting estimates will be determined. Examples of accounting estimates include:

- allowance for doubtful debts (Chapter 10)
- the useful life of plant and equipment (Chapter 12)
- estimate of future employee entitlements such as holiday pay and long service leave (Chapter 13).

4 What events or transactions will be recognised. Examples of accounting recognition decisions include:

- the write-down for inventory obsolescence (Chapter 11)
- recognition of intangible assets; for example, brand names (Chapter 12)
- recognition of revenue on partially completed sales, such as under long-term contracts (Chapter 15).

Accounting policy choices are very important to the interpretation and analysis of the financial statements. Without knowing how the statements were assembled, it is difficult to use them intelligently. For this reason, the first of the notes following the financial statements is usually a summary of the company's significant accounting policies (often in Note 1 of the financial statements). The other notes provide further details on important policies.

Why is there a choice?

Accounting, in spite of being numerical, is not mathematically cut and dried. Preparers of financial statements are forced to make choices, whether they like it or not, for the following main reasons:

- 1** There is information value in the location of an account in the statements (such as current versus noncurrent liability recording cash receipts and payments). Choice of location (classification) of accounts is, therefore, potentially important.
- 2** Even the basic transactional records of accounting – the bookkeeping records – require decisions about what is a transaction, which accounts should be used, and how and when transactions are to be recorded. For example, is an amount paid to a builder for renovations an asset or maintenance expense?

- 3 The basis of accrual accounting, as you have seen, is to augment the transactional records to produce a more complete (in the economic sense) picture of the organisation's performance and position. How to do this is a matter of professional judgement. Accrual accounting therefore necessitates choices about accounting figures, notes and methods. For example, what percentage of a contract has been completed at year end in order to estimate revenue recognition on a contract that goes over more than one accounting period; or the amount of depreciation for the period.
- 4 In Australia, the United Kingdom, Canada, New Zealand and many other countries, governments and professional accounting standard-setters have been reluctant to specify all the solutions or require all organisations to follow them. Such authorities believe that choices in accounting are appropriate, in order to fit accounting to each organisation's circumstances. Stock market participants, financial analysts and others who rely on financial statements are expected to attain sufficient knowledge of accounting and the organisation to make informed decisions, just as they would when buying the organisation's products or having other interactions with the organisation.

How much freedom of choice is there?

Most countries, including those adopting international accounting standards, rely on a principles-based approach to accounting standards and accounting policy choice; that is, that the guidelines provided by the accounting standards provide a framework (as discussed in Chapter 1) in which managers can select the most appropriate accounting policy choice for their context. However, there are limits on these choices. Some laws specify the use of particular reporting methods; for example, information about a company's transactions with its shareholders. But, more importantly, there is now a vast array of accounting standards that operate to constrain organisations' choices about their accounting.

Manipulation

Does accounting policy choice provide a way for company management to alter the picture presented in the financial statements – to present the story they want to tell rather than the truth? The short answer is yes. However, there is a fine line between choosing the accounting policies that suit the company's circumstances and therefore produce fair reporting, and choosing policies that tell a desired story that may not be fair. *The vast majority of companies and their managers are scrupulous about their accounting* and consider producing fair financial statements to be both ethical and good business practice. But we do learn of companies that have stepped over the line and manipulated their financial statements to make themselves look better or to hide some embarrassing result.

Here are some examples that the user of financial statements may want to consider:

- A company may choose accounting methods for receivables, inventories, depreciation or any other accounts that tend to make profits higher than would have been produced by other methods. This could involve optimistic estimates of future bad debts, the useful life of assets or the value of patents.
- There are many areas where different judgements have to be made in revenue and expense recognition. For example, building a major tunnel that spans a number of years and estimates need to be made on the percentage of completed work in each period.
- Having promised the bank that a current ratio would be maintained at a certain level, a company may choose accounting methods that help the ratio look as high as possible, such as classifying longer-term receivables as current assets or short-term obligations as noncurrent liabilities.

There may be reasons for manipulating the financial statement figures in any direction, but good knowledge of the organisation may be necessary to predict what that direction is likely to be.

A dramatic example of profit manipulation is the 'big bath'. The big bath method works in the following way: the management of a company that has had a bad year may write off extra costs (e.g. writing inventories, receivables or intangibles way down) on the assumption that the company is already going to be criticised, so the criticism won't be much stronger if the results appear even worse. By transferring such costs to expenses now, instead of in later years, future expenses are reduced and, therefore, future profits will look better. The company

will appear to bounce back quickly. Management will hope for praise for this recovery, even though it is not all real, because of the manipulation. Large write-offs become more critical when executive compensation packages are tied to changes in accounting profits. For example, if the compensation package included an incentive related to the change in profit from year one to year three, there are incentives for management to write off some assets (e.g. obsolete inventory, increasing the allowance for doubtful debts and higher depreciation) in year one, with the effect of decreasing year-one profit and increased profits in later years (e.g. year three), than if the changes were not made in year one.

Manipulation dangers can be overrated. First, managers cannot simply change accounting policies wherever and whenever they wish. There is a need for consistency, and if there is a change it must be disclosed in the notes to the accounts, together with the effect of the change on profit. Second, most managers are honest and anxious that their accounting be fair and truthful. Most consider that good financial reporting is important to the company's reputation and ability to borrow, raise share capital and generally do business. Most also consider good financial reporting to be part of good business and professional ethics. Third, there are many checks in place including the role of the auditor and surveillance activities by the Australian Securities and Investments Commission (ASIC) and the equivalent in other countries. However, the danger of manipulation is always there, so accountants, auditors and users who rely on profit and other measures for their decisions must be vigilant. The role auditors play will be discussed in the next section.

5.5 Internal control

LO5

Internal control is:

LO6

a process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

- 1 effectiveness and efficiency of operations, including safeguarding assets against loss
- 2 reliability of internal and external financial and non-financial reporting
- 3 compliance with applicable laws and regulations.

Source: *The Internal Control – Integrated Framework* by the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2013).

Let's consider some of the points in this definition. First, internal control is not one event or circumstance but a process integrated with other basic management processes, including planning and monitoring. Its effectiveness is a state or condition of the process at one or more points in time; that is, particular parts of the process working on particular days.

It is affected by the actions of people in the organisation including management, the board of directors and other personnel. It has an impact on people in the organisation; for example, management sets 'the tone at the top', which affects integrity and ethics and other positive control features. The chief executive officer (CEO) is ultimately responsible for internal control. Management is accountable to the board of directors, and this board provides governance, guidance and oversight to the organisation. Other personnel are also involved as they provide information used in the internal control system and take actions needed to affect controls, such as authorising the payment of an account. Internal control affects the working life of most personnel; for example, having an impact on what responsibility they have and limiting the authority they have (such as being authorised to make payments up to \$5000).

Internal control, regardless of how well it is operated and designed, can only provide reasonable assurance rather than absolute assurance to management and the board of directors regarding the achievement of an organisation's objectives. All internal control systems have certain inherent limitations. First, they are limited by the problems of human judgement. Even if a control system is well designed, individuals may make judgement mistakes, including misunderstanding instructions. Second, managers may override effective internal control systems; that is, override prescribed policies or procedures, such as the need to do a credit check on a new customer or not getting appropriate authorisation. This may be due to time pressures or other possibilities

including increasing revenue to cover up falls in profits, enhancing reported profit to meet analysts' forecasts or covering up breaches of bank borrowing conditions. Third, collusion between two or more individuals can result in control failures. Finally, internal controls cost money, and there are always cost-versus-benefit discussions in implementing and checking on controls; for example, you would not spend \$1 million a year protecting inventory that was worth \$10 000. Finally, internal control should be adaptable to the size and structure of the organisation. The internal controls you would expect at Woolworths will be very different from those you see at your local family-run corner shop.

Internal control covers three objectives:

- effectiveness and efficiency of operations that relate to the organisation's basic business objectives and safeguarding of resources
- reliability of internal and external financial and non-financial reporting, including published financial statements, such as extracts of financial data from these statements (e.g. earnings announcements)
- compliance with the laws and regulations to which the organisation is subject.

Based on these three objectives, internal controls can be considered to be effective for each of the three categories if management and the board of directors have reasonable assurance that:

- they understand the extent to which the organisation's objectives are being achieved; for example, particular returns on investment
- financial statements are being prepared reliably
- there is compliance with relevant laws and regulations.

Internal control consists of the following five interrelated components:

- 1 **Control environment:** The control environment incorporates all the written policies and procedures of the organisation as well as the unwritten practices of those within an organisation. The control environment sets the tone of an organisation, influencing the control consciousness of its board, management and employees. It is the foundation for all other components of internal control, providing discipline and structure. Control environment factors include the integrity, ethical values and competence of the organisation's employees; management's philosophy and operating style; the way management assigns authority and responsibility, and organises and develops its people; and the attention and direction provided by the board of directors.
- 2 **Risk assessment:** Every organisation faces a variety of risks from external and internal sources that must be assessed. A precondition to risk assessment is establishment of objectives, linked at different levels and internally consistent. Risk assessment is the identification and analysis of relevant risks that may adversely impact the achievement of the organisation's objectives. This forms a basis for determining how the risks should be managed. Because economic, industry, regulatory and operating conditions will continue to change, mechanisms are needed to identify and deal with the special risks associated with change, both internal and external.
- 3 **Control activities:** Control activities are the policies and procedures that help to ensure management directives are carried out. They help to ensure that necessary actions are taken to address risks to achievement of the entity's objectives. Control activities occur throughout the organisation, at all levels and in all functions. They may be preventative or detective in nature and include both manual and automated processes. They include a range of activities as diverse as approvals, authorisations, verifications, reconciliations, reviews of operating performance, security of assets and segregation of duties.
- 4 **Information and communication:** Pertinent information must be identified, captured and communicated in a form and a timeframe that enable employees to carry out their responsibilities. Information systems produce reports containing operational, financial and compliance-related information, which make it possible to run and control the business. They deal not only with internally generated data but also information about external events, activities and conditions necessary to informed business decision-making and external reporting. Effective communication also must occur in a broader sense, flowing down, across and up the organisation. All personnel must receive a clear message from top management that control responsibilities must be taken seriously. They must understand their own role in the internal control system, as well as how individual activities relate to the work of others. They must have a means

of communicating significant information upstream. There also needs to be effective communication with external parties, such as customers, suppliers, regulators and shareholders.

- 5 **Monitoring:** Internal control systems need to be monitored – a process that assesses the quality of the system's performance over time. This is accomplished through ongoing monitoring activities, separate evaluations or a combination of the two. Ongoing monitoring occurs in the course of operations. It includes regular management and supervisory activities, and other actions personnel take in performing their duties. The scope and frequency of separate evaluations will depend primarily on an assessment of risks and the effectiveness of ongoing monitoring procedures. Internal control deficiencies should be reported upstream, with serious matters reported to top management and the board (adapted from Committee of Sponsoring Organizations of the Treadway Commission [COSO] 2013, *The Internal Control – Integrated Framework*).

All five components are relevant to each of our previously stated three objectives. For each objective (such as reliability of financial reporting), all five components must be present and function effectively to demonstrate that internal control over the reliability of financial reporting is effective.

Control activities

While all of the components of internal control are important, for illustration here we provide four examples of control activities:

- **Top-level reviews:** Managers carry out reviews of actual performance compared to budgets, forecasts and prior period results. They assess which targets are being achieved. Management actions taken to analyse progress made and to follow up on reporting actions are examples of control activities. A very common part of a performance review is to compare actual performance with budget, follow up unexpected differences, and take corrective action where necessary. For example, a drop in sales revenue at certain times of the year may be an example of unauthorised discounts in order to meet sales targets.
- **Information processing:** Controls are used to check accuracy, completeness and correct authorisation of transactions. Data entered are subject to edit checks, such as no payroll amount above \$x. There is matching to approved control files (e.g. a customer's order is accepted only after reference to an approved customer file) and a credit limit. Numerical sequences of transactions are accounted for, such as a missing invoice number. Reconciliations are used to compare various items that should agree and involve follow-up when they do not agree. For example, the balance of accounts receivable should reconcile with a list of all individual accounts receivable. In Chapter 11, we will consider bank reconciliations where the balance of cash in the company's records are compared to bank statements and any differences reconciled.
- **Segregation of duties:** involves assigning different people the responsibility of authorising transactions, recording transactions and maintaining custody of the assets. Authorisation is a form of approval by a higher level of management verifying the validity of the transaction (e.g. order new equipment, pay a supplier, reimburse staff expenses); usually the higher the dollar amount, the higher the level of management that needs to approve the transaction. Recording transactions is the entry of the transaction into the accounting system (e.g. a journal entry). Custody of the asset refers to the physical act of accepting, delivering or storing the asset such as inventory. For example, an effective way of providing security over assets like cash, accounts receivable and inventories is to have records showing how much of each asset is supposed to be on hand at any time. However, if the person who physically handles the asset (say, cash) also keeps the records of it, errors or fraud can be hidden by altering the records. Accountants call the separation of record-keeping and handling assets 'segregation of duties'. One person collects the cash while another person maintains the cash records. If one or the other makes a mistake, a difference will arise between the count of cash on hand and what the record shows should be on hand. This difference can then be investigated and the cause corrected. It is hard for smaller organisations with few employees to spread the jobs around enough to segregate all the important tasks, but it should be done as much as possible. If segregation of duties doesn't exist, the manager needs to keep a close eye on important assets, such as cash and inventories.
- **Physical or logical controls:** These controls are aimed at the security of assets against theft, unauthorised access, use or disposal (ISA 315). Examples include: the physical security of assets (including safeguards

to prevent access), authorisation of access to computers and data files (e.g. use of passwords, regular update of passwords), periodic counting and inspection of certain sorts of assets and comparing them with the amounts shown on the accounting records. For example, an inventory stock count at the end of the month where physical inventory is counted and compared to the numbers recorded in the accounting records. Sensitive assets, such as cash, inventories and computer equipment, should be in locked areas or kept in particular storage areas, or otherwise protected from unauthorised or casual access. Examples of physical controls include safes, locked storage areas, security guards and employee identification cards. Electronic devices are being used with increased frequency; for example, most university libraries have electronically coded their books so that an alarm goes off if anyone tries to remove them without first taking them to the front desk to have them checked out. Computers are password-protected and there are inbuilt checks when they are accessed from unusual locations.



FOR YOUR INTEREST

Some organisations are sloppy about access to their inventories, in particular, and sometimes protection is a good idea for assets you might not think of. For example, manufacturers produce scrap as a by-product, and the scrap can be very valuable. One manufacturer put its scrap in the backyard and found out later that many thousands of dollars' worth had been lifted over the back fence and sold on the scrap market.

There is much more to internal control than the points listed previously. Designing effective control systems requires an understanding of management's objectives; a sensitivity to the cost–benefit balance needed between tight, but costly, controls and loose, but cheap, controls; knowledge of computer systems and other record-keeping methods; and considerable insight into the subtleties of human motivation and behaviour. It also requires some common sense: complete protection is not possible, and tying the organisation up in red tape to gain complete protection is not what a good internal control system should do.

Some specific examples of internal control procedures include:

- *independent approval and review*: for example, the authorisation of purchase orders or sales invoices; subsequent review of large and unusual transactions; and approval of transactions over a certain limit (such as giving credit over \$100 000)
- *matching independently generated documents*: for example, matching sales invoices and shipping documents to ensure all items shipped are invoiced; matching purchase orders and receiving reports with payment vouchers to ensure goods were actually ordered
- *prenumbering and sequence checking of documents*: for example, prenumbering shipping documents, sales invoices, cheques or vouchers to prevent unauthorised use
- *comparison with independent third-party information*: for example, bank reconciliations of ledger accounts with bank statements
- *cancellation of documentation*: for example, physically stamping 'paid' on an invoice presented for payment; defacing spoiled or cancelled cheques to prevent them being used
- *segregation of duties relating to transaction initiation, approval and recording*: for example, the person who handles the physical asset (such as cash inventory) should not also be involved in the recording of the transactions
- *demanding timeliness of operations*: for example, the prompt deposit of cash receipts and depositing cash intact; that is, not removing part of it to pay for small petty cash items
- *rotating duties between staff*: this has the added benefit of improving the skills of the staff members involved, as well as providing opportunities for errors to be discovered. Ensuring individuals take regular holiday leave has the benefit of ensuring a different person does a job for a certain period of time and if controls have not been operating appropriately, this is likely to show up.



HOW'S YOUR UNDERSTANDING?

- 5A** Provide an example of each of the following controls:
- (i) information processing controls
 - (ii) segregation of duties
 - (iii) physical protection of sensitive assets.

5.6 Internal control of cash

LO5 Cash is the asset that is usually most susceptible to theft because of its liquid, and generally anonymous, nature.



FOR YOUR INTEREST

Mike, a junior auditor, was assigned to do a surprise count of the cash on hand at a local clothing shop. The cash counted was short compared with what was expected, based on the auditor's projections of cash from sales and bank deposit records. Mike was accused by the shop's accounting clerk of stealing the cash himself while counting it, and he had to call the police and insist that they search him and so demonstrate that he had not stolen it.

It turned out that the accounting clerk had been stealing cash and covering up the thefts by changing the sales records: a classic case of poor internal control through lack of segregation of duties, because the clerk had access to both the cash and the records of the cash. The theft was discovered only because Mike's surprise cash count referred to sales records that the clerk had not yet altered to cover up the shortage. The clerk was fired and legal action taken, though it was difficult to tell how much had been stolen because sales records had been altered for several years.

The owner of the store was critical of the auditors for 'not preventing the loss', but the auditors showed that they had indeed warned the owner, who had said that it would be too expensive to employ someone else to keep the sales records or control the cash.

For cash sales, a common control is to have locked-in sales registers or other carefully controlled records. Registers (such as you would see at any supermarket) usually print a consecutive number on the locked-in tape for each transaction. The access key is kept by a single person, perhaps a supervisor, who balances cash to sales records. The proceeds that should have been received will be recorded on the tape. The person who keeps the key should count the cash and credit card totals with the cashier, compare it with the sales proceeds, and check that the tape numbers are consecutive from one person's shift to that of the next person. If this sort of system is to work, there has to be no collusion between the people controlling the cash and checking the records – often, collusion is difficult to prevent, so having yet another person provide overall monitoring of the process is a good idea. With the greater use of credit cards and the advent of electronic commerce, there are now many forms of 'cash' needing control attention, including currency, cheques, gift cards, direct payments, credit cards and electronic funds transfers.

Another way to control cash from sales is to have multi-copied, prenumbered sales invoices. The invoice copies are then removed by one person. For cash sales, the amounts are cross-checked against cash records, and for credit sales, the amounts are cross-checked against accounts receivable records. Any gaps in the numerical continuity of the invoices are investigated. For this control to work, supervisors must ensure that an invoice is prepared for each sales transaction. An additional control is to regularly check inventory and compare it with the sales records. This should prevent, or at least detect, someone selling inventory and pocketing the cash.

Take, for example, the Mayfield Pro Shop, which recorded sales of goods for the month (either on credit card or cash) that had a cost price of \$100 000 according to the invoice copies in the locked box. If the inventory at the start of the month was worth \$250 000 and at the end of the month was worth \$140 000 (based on the retail price of the goods), the shop should have sold \$110 000 worth of goods. The \$10 000 difference could be the result of one of the following:

- Someone could have kept \$10 000 worth of cash from sales and not written any invoices for those sales.
- Someone could have shoplifted \$10 000 worth of goods.
- The inventory could be inaccurate, or other errors could have occurred.

Thus, there could be other reasons for shortfalls besides theft by employees, but keeping track of cash and inventory together is one method of highlighting the possibilities and investigating them.

These procedures are based on the separation of record-keeping from handling assets. There also needs to be good internal control over the payment of cash. Internal controls are needed to prevent payment for goods or services that have not been received or payment of an invoice more than once. Some internal controls that are used by most larger companies include the following:

- Payments should only be made if documentation has been properly authorised. Before authorising the payment, a staff member should ensure that the relevant invoice is accompanied by some evidence of ordering and receiving the goods or service (such as a copy of the purchase order and goods received advice).
- The original invoice should be notated as 'paid' to ensure that it is not subsequently represented for payment.

The examples of cash control problems are presented here to illustrate the fact that accounting records have a variety of uses beyond the preparation of financial statements. The examples are not intended to suggest that employees or customers are crooks. Their intention is to show that management must be prudent in meeting its responsibility of good stewardship in taking care of the owners' assets. Part of that responsibility lies in not putting employees, or others, in such poorly controlled situations that they are tempted to steal. It also involves adequately paying people with the responsibility for cash so that they do not start thinking of themselves as underpaid, and therefore deserving of more money from the company!

5.7 Disclosure of internal control in annual reports

Australian companies that are listed with the Australian Securities Exchange (ASX) are now required to include a section in their annual reports on corporate governance. A number of companies include a description of their internal control systems in this section. Examples from the annual reports of BHP Group Limited and Tabcorp Holdings Limited are given in Exhibits 5.2 and 5.3.

LO6

Note some common aspects of these descriptions:

- The board of directors has responsibility for the internal control system.
- The role of various subcommittees of the Board in the evaluation of internal controls is noted.
- Operating budgets are used to monitor performance.
- Internal audits are an important part of the internal control system.
- Controls are important in certain key areas including treasury.
- There are clearly defined guidelines for capital investment and investing cash surplus as part of cash management (discussed in Chapter 7).

EXHIBIT 5.2

BHP GROUP LTD

EXTRACT FROM 2020 ANNUAL REPORT

Effectiveness of systems of internal control and risk management (RAC and Board)

In delegating authority to the CEO, the Board has established CEO limits, outlined in the *Board Governance Document*.

Limits on the CEO's authority require the CEO to ensure there is a system of control in place for identifying and managing risk in BHP. Through the RAC, the Directors regularly review these systems for their effectiveness. These reviews include assessing whether processes continue to meet evolving external governance requirements.

The RAC oversees and reviews the internal controls and risk management systems. Any material breaches of *Our Code*, including breaches of our anti-bribery and corruption requirements, as well as any material incidents reported under our 'speaking up with confidence' requirements are reported quarterly to the RAC by the Chief Compliance Officer. These reports are then communicated to the Board through the report-out process. In undertaking this role, the RAC reviews:

- procedures for identifying, assessing and managing material risks and controlling their impact on the Group, and other stakeholders where relevant, and the operational effectiveness of these procedures
- processes and systems for managing budgeting, forecasting and financial reporting
- the Group's strategy and standards for insurance
- the Group's standards and procedures for reporting reserves and resources
- the Group's standards and procedures for closure and rehabilitation provision
- standards and practices for detecting, reporting and preventing fraud, serious breaches of business conduct and whistle-blowing procedures supporting reporting to the Committee
- procedures for ensuring compliance with relevant regulatory and legal requirements
- arrangements for the protection of the Group's information and data systems and other non-physical assets
- operational effectiveness of the Business RAC structures
- overseeing the adequacy of the internal controls and allocation possibilities for monitoring internal financial controls

BHP, *Annual Report 2020*, p. 134

RAC = Risk and Audit Committee

EXHIBIT 5.3

TABCORP HOLDINGS LIMITED

EXTRACT FROM CORPORATE GOVERNANCE STATEMENT 2021

5.5. Internal control framework

The Group's internal control structure is overseen by the Board Risk and Compliance Committee and Board Audit Committee (having regard to their respective roles and responsibilities) and approved by the Board. This includes the roles performed by the Group's internal audit, risk management and compliance functions.

The design, operation and effectiveness of controls relating to material risks is assessed through declarations by senior executives who are responsible for the operation of those controls, together with assurance activities undertaken by the CLRO team, internal audit team, external auditor, and other assurance providers, where applicable.

The Group's strategic plan and a detailed budget are prepared annually and subject to the approval of the Board. Forecasts for the Group and each of the operating business units are regularly updated and reported to the Board throughout the year to enable the Board to monitor performance against the annual budget.

The Group has detailed policies and guidelines for the approval of capital expenditure including annual budgeting, review and approval of individual proposals and specific levels of authority between the Board and management as set out in the Delegated Authorities and Approval Limits Policy.

Tabcorp has a Treasury Policy approved by the Board which outlines a framework for the management of financial risks and sets out processes for the investment of surplus cash, management of debt and currency, interest rate risk management and ongoing reporting requirements to the Board. Tabcorp enters into interest rate and cross currency swaps to hedge interest rate and foreign exchange risk on debt. The Treasury department, overseen by the CFO, is responsible for managing the Group's finance facilities and interest rate, credit, liquidity and currency risks in line with policies approved by the Board.

© Tabcorp Holdings Limited, Corporate Governance Statement 2021, p. 18

CLRO = Chief Legal and Risk Officer

Managers and internal control

Financial managers need to be familiar with internal controls as they are fundamental to the accurate recording of transactions and reliable financial reports.

A system of internal control should minimise and, where possible, eliminate errors and irregularities. Errors are unintentional mistakes whereas irregularities are intentional. Even with a strong system of internal control, errors can still occur, but the system should detect these errors. Irregularities should also be detected, except where there is collusion (two or more employees working together to cover up the irregularities) or management override (management using its power to instruct employees to ignore a particular control). Thus, no system of internal control can eliminate, with certainty, all errors and irregularities, but it can decrease substantially the possibility of them occurring and increase the chances of detecting them.

An important question for management is how much internal control is necessary. As each additional control is added, the risk of error and irregularity decreases, but there is a cost for implementing the controls. Therefore, a cost-benefit analysis is required. However, this is difficult to do because the benefits of having the controls are often difficult to quantify. It becomes a matter of judgement on the part of management as its estimate of the potential losses from errors and irregularities is compared with the cost of additional controls.



HOW'S YOUR UNDERSTANDING?

- 5B** Shown below are extracts from the financial statement audit report of Australia Post with references to internal control highlighted.

Directors' responsibility for the financial statements

The Directors of the Australian Postal Corporation are responsible under the *Public Governance, Performance and Accountability Act 2013* for the preparation and fair presentation of annual financial statements that comply with Australian Accounting and the rules made under that Act. The Directors are also responsible for such internal control as the directors determine necessary to enable the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error. ...

Auditor's responsibilities for the audit of the financial statements ...

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control. ...

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit. ...

Excerpts from Australia Post, Annual Report 2020, pages 92–93

Based on the above extract of the audit report of Australia Post:

- Who is responsible for the internal controls: directors or auditors?
- Why is override of internal control important?
- Does the auditor express an opinion on the effectiveness of internal control?
- Are deficiencies in internal control formally communicated to directors?

5.8 The nature of a profession and professional ethics

LO7 Many of the people involved in financial accounting consider themselves to be professionals. Evolving systems of standards, such as GAAP, work reasonably well, partly because professionals, who are both expert and ethical, are involved. Ethical behaviour comes from personal standards plus various written codes of ethical conduct.

For many people today, there is a strong concern with being professional. There are, however, certain occupations that have established status as 'the professions'. In today's world, some groups that have this status are physicians, lawyers, engineers, architects and professional accountants.

Part of the reason these groups stand out is that entry into each of them requires a post-secondary education, including training and examination by practitioners, and members are bound by a code of conduct or professional ethics. Members of each professional group usually enjoy a monopoly in their particular area of expertise. Associations of architects, physicians, engineers, lawyers and other members of legally recognised professions can usually prevent people from calling themselves members of their particular professions and practising in that capacity. Such groups have to convince the public, as represented by governments, for example, that they have expertise and appropriate codes of ethical conduct, but also that entrance to their area of expertise should be regulated for the public good.

In Australia, Chartered Accountants Australia and New Zealand (CAANZ), CPA Australia (CPA) and the Institute of Public Accountants (IPA) are the professional accounting bodies. There are no legal requirements governing the employment of accountants in Australia, although some specialist accounting functions (such as auditing, taxation and liquidation) are subject to statutory requirements. However, professional designations, such as CA, CPA and IPA, are protected by law, and can only be attained if you meet the various requirements specified by the relevant accounting body. For these accountants, there are both powers and restrictions (e.g. advertising must meet certain standards of content and decorum).

The rights that a particular profession enjoys come in return for promises made concerning the quality and ethics of its members' work. If a professional accountant has not lived up to the standards of conduct held by the profession, he or she can be reprimanded or expelled by the profession and/or sued in court. (Anyone can be sued, of course, but professionals are usually held to a higher standard of performance than are non-professionals.)

For members of the professional accounting bodies there are ethical standards, including APES 110 *Code of Ethics for Professional Accountants*. This Code notes that the mark of the accounting profession is its acceptance of the responsibility to act in the public interest. This means that their responsibility is not exclusively to satisfy the needs of an individual client or employing organisation.

The Code sets out five fundamental principles, which are outlined as follows:

- 1 *Integrity*: an obligation on accountants to be straightforward and honest in professional and business relationships.
- 2 *Objectivity*: an obligation on accountants not to compromise their professional or business judgements because of bias, conflict of interest or the undue influence of others.
- 3 *Professional competence and due care*: the principle of professional competence and due care, which imposes the following obligations on accountants:
 - to maintain professional knowledge and skill at the level required to ensure competent professional service
 - to act diligently in accordance with applicable technical and professional standards when providing their services.
- 4 *Confidentiality*: an obligation to refrain from:
 - disclosing confidential information acquired through business relationships without proper and specific authority from the client or employer
 - using confidential information acquired as a result of professional and business relationships to their advantage.

- 5 *Professional behaviour:* an obligation on accountants to comply with relevant laws and regulations and avoid actions that may discredit the profession; for example, making disparaging references or unsubstantiated comparisons to the work of others.

When dealing with an ethics issue, accountants are required under APES 110 (revised 2018) to identify threats to compliance with the fundamental principles identified above, evaluate the threats identified, and then address those threats by eliminating or reducing them to an acceptable level. Thus, there are three steps: identify, evaluate and address. Below we consider them in turn.

In respect of identifying threats, it should be recognised that threats to compliance with fundamental principles can arise from a broad range of circumstances. Generally, they fall into the following five categories:

- self-interest threats occur when a financial or other interest will inappropriately influence judgement or behaviour of the individual; for example, a financial interest in the client, undue dependence on the total fees of a client, or a loan to or from a client
- self-review threats occur when previous work done by a person or their organisation is part of the information being reviewed, such as auditing systems on reports in whose design or development you had been involved
- advocacy threats that may affect objectivity, such as promoting shares in a listed company when you are also auditor of that company
- familiarity threats, such as having a close or immediate family relationship with a director or officer of a client, or a long association with senior personnel of an audit client
- intimidation threats that may deter an individual from acting objectively, such as being threatened with dismissal, or being pressured to reduce the extent of the work performed in order to reduce fees (adapted from APES 110 Code of Ethics for Professional Accountants).

When a potential threat to compliance with the fundamental principles exists, it is necessary to evaluate whether such a threat is at an acceptable level. This is done by using 'the reasonable and informed third party test' (APES 120.7 A1). Such a test is defined as a 'reasonable and informed third party, who weighs all the relevant facts and circumstances that the Member knows, or could reasonably be expected to know, at the time the conclusions are made. The reasonable and informed third party does not need to be a Member, but would possess the relevant knowledge and experience to understand and evaluate the appropriateness of the Member's conclusions in an impartial manner' (APES 120.5 A4).

When the above identified threat to compliance with the fundamental principles is not at an acceptable level, it is necessary to eliminate the threat or reduce it to an acceptable level. This can be done in one of three ways:

- eliminate the circumstances that are creating the threat; for example, if the threat was that the auditor owned shares in a particular client, selling those shares before accepting the role may be appropriate. If the accountant was advising two parties regarding the same transaction (e.g. purchase of a property), declining the appointment to one of the parties may be appropriate
- apply safeguards to reduce the threats to an acceptable level
- decline or end the specific activity causing the threat.

Various safeguards to eliminate or reduce the threats to an acceptable level are developed by the profession, by legislation and in the work environment. For example, accounting firms involved in audit work have a vast range of rules related to their staff owning shares, and elaborate procedures to ensure that taking on a new client will not create independence problems; for example, one firm providing advice to two different companies in the one industry by having one role handled by the Melbourne team and the other by the Sydney team and at the same firm setting up constraints on communications between the teams.

5.9 The external auditor's report

LO8 Several references to auditors were made in the previous paragraphs. The auditor's report is normally a routine statement by the auditors that provides an opinion on whether the financial statements present a true and fair view and are in accordance with accounting standards. However, if it is not routine, the auditors are trying to tell the users something they think is important. The auditor's report may be qualified in some way, indicating that the auditors have some concern about the statements. In extreme cases, the report may even 'deny' the fairness of the statements, saying that the auditors have some very serious objections. This is called an adverse opinion. We discuss the various types of audit reports in the following text.

While you have probably heard of the term 'audit', it will help to be aware of the broader term of 'assurance'. Assurance is an expression of a conclusion on particular subject matter or information (e.g. financial statements or levels of greenhouse gas emissions) that is intended to increase the confidence of the users of that information.

Figure 5.2 illustrates different levels of assurance. As you can see, an audit of financial statements is a reasonable assurance engagement. The auditor provides an opinion on whether the financial statements provide a true and fair view and whether they are in accordance with accounting standards. The fact that an audit provides a reasonable level of assurance rather than absolute assurance means that the auditor is not guaranteeing the financial statements are correct. This is the case because, as you have already discovered, there are numerous estimates and judgements in the financial reports, and some accounting numbers are contingent on future events (e.g. whether inventory can be sold, and whether accounts receivable can be collected). In addition, it is impractical for an auditor to test every transaction. For example, consider how many transactions per year companies like Woolworths and the Commonwealth Bank would have.

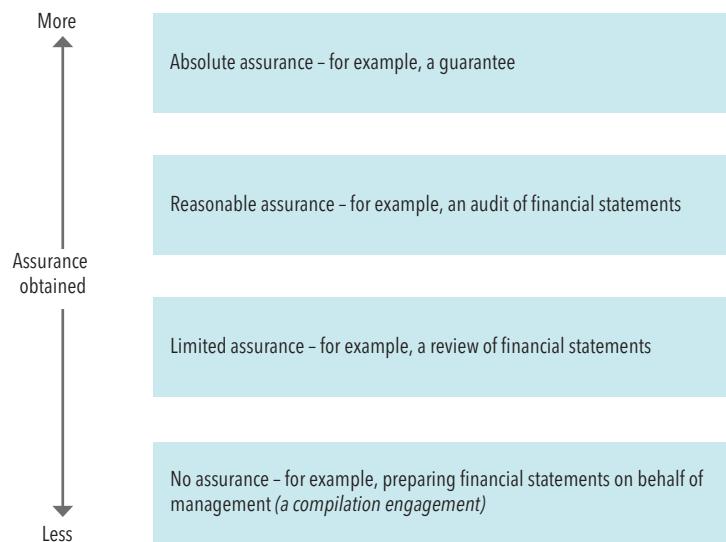


FIGURE 5.2 Levels of assurance

CPA Australia. 'A Guide to Understanding Auditing and Assurance: Listed Companies, 2019'.

Exhibit 5.4 compares reasonable, limited and no assurance in terms of the nature of the work performed and the wording of the conclusion. In Chapter 9 we will consider sustainability assurance reports and give examples then of both reasonable and limited assurance.

So *external auditing* refers to the evaluation of an organisation's financial statements by an auditor who should be independent of the management of the organisation. The role of the external auditor has two fundamental parts:

- to have an independent, unbiased and professional perspective
- to render a competent opinion on whether the financial statements present a true and fair view.

EXHIBIT 5.4

WHAT IS THE IMPACT OF THE LEVEL OF ASSURANCE?

Type of assurance	For example	Nature of key work performed	Example form of conclusion
Reasonable assurance	An audit of a financial report	Gathering of sufficient appropriate audit evidence based on an assessment of risk and materiality to support the auditor's opinion.	In our opinion, the financial report is in accordance with the <i>Corporations Act 2001</i> , including giving a true and fair view of the company's financial position at year end and of its financial performance for the year then ended and complying with the Australian Accounting Standards and the Corporations Regulations 2001. This is commonly referred to as positive assurance.
Limited assurance	A review of a half-year financial report	Primarily enquiries and analytical review, with less detailed procedures, based on an assessment of risk and materiality to support the auditor's conclusion.	Based on our review, which is not an audit, we have not become aware of any matter that makes us believe that the half-year financial report of the company is not in accordance with the <i>Corporations Act 2001</i> including: giving a true and fair view of the company's financial position as at 31 December 20XX and of its performance for the half-year ended on that date; and complying with Accounting Standard AASB 134 <i>Interim Financial Reporting</i> and Corporations Regulations 2001. This is commonly referred to as negative assurance.
No assurance	<ul style="list-style-type: none"> • Preparing financial statements (compilation engagement) • Agreed-upon procedures 	<ul style="list-style-type: none"> • Preparation of the financial statements • Performing an agreed set of procedures 	<ul style="list-style-type: none"> • No conclusion provided • Factual findings from performing the procedures reported but no opinion (either positive or negative) is provided to the users on the work that has been undertaken.

Source: CPA Australia. 'A Guide to Understanding Auditing and Assurance: Listed Companies', p. 6.

Let's begin with independence. Management prepares the financial statements and the auditor provides an opinion on those financial statements. The auditor needs to be independent from management. The concept of independence is so important to auditing that we devote section 5.10 to the topic.

The second part of the auditor's role is to render a competent opinion on the financial statements. If you refer to an audit report, such as that for Woolworths Limited in the appendix of this book, you will see that it says the auditors have reached an opinion as to whether the financial statements have been properly drawn up to give a true and fair view in accordance with the provisions of the *Corporations Act 2001* and applicable accounting standards. As noted, it is an opinion, not a guarantee; nor does it say that the company has performed well or badly. It simply says that the performance and the position have been measured and presented in a generally accepted and unbiased way. Since December 2016, auditors are also required to include in their auditor report the key audit matters which have come to the attention of the auditors during the course of the audit.

Given the complexity of accounting, auditing and business in general, the auditor's opinion is fundamentally a professional judgement. The auditor not only must be competent, but also must weigh all sorts of factors in arriving at his/her opinion. Auditing firms have sponsored a great deal of research into the professional judgement of auditors. The results of much of this research have been incorporated into international practices, including those in Australia.

The form and content of the auditor's report changes every few years as auditors rethink how best to communicate with the users of financial statements. Because the auditors are formally reporting to the shareholders of the company, not to management, the report is usually specifically addressed to the shareholders (the owners). The usual title of the report is 'Independent auditor's report'. Typically an audit report would:

- 1 identify the company, the set of statements and their date, and state that the statements are the responsibility of management
- 2 state that the directors are responsible for preparing the financial statements and for the internal controls of the company

- 3 include a statement that the auditors are responsible for auditing the financial statements and that the audit involves performing procedures to obtain evidence about the amounts and disclosures in the financial report; and also that the evidence obtained is sufficient and appropriate to provide a basis for the audit opinion
- 4 include a statement by the auditor confirming that they have met the required independence standards
- 5 include the matters that in the auditor's judgement were of the most significance in the audit (key audit matters)
- 6 present the auditor's opinion that the financial statements give a true and fair view, and that they are in accordance with the provisions of the *Corporations Act 2001* and accounting standards.

The auditor's report contains the auditor's opinion on the financial statements. The most common type of audit opinion is an unmodified opinion. An unmodified auditor's opinion indicates that the auditor believes the financial statements present a true and fair view and are in accordance with accounting standards and relevant legislation. Modified auditor's reports are issued when the auditor believes the financial statements contain a material misstatement, or when the auditor is unable to obtain enough evidence to form an opinion. Exhibit 5.5 sets out the different types of modified auditor's reports that may be issued in these situations.

EXHIBIT 5.5**TYPES OF MODIFIED AUDIT OPINIONS**

Type of modified audit opinion	Description	Situations where this type of report may be issued	Examples
Qualified or 'except for' opinion	The opinion states the financial report is in accordance with the <i>Corporations Act 2001</i> , in that it gives a true and fair view and complies with the Australian Accounting Standards and the Corporations Regulations 2001, except for the effect of a specific matter or matters.	A qualified opinion is issued when a specific part of the financial report contains a material misstatement or adequate evidence cannot be obtained in a specific, material area, but the rest of the financial report is found to give a true and fair view.	The auditor has a different view on the valuation of a material asset than that applied by management in the financial report, but the rest of the financial report was found to be free of material misstatements.
Disclaimer of opinion	The auditor does not express an opinion on the financial statements because of the significance of the matters described. They are unable to obtain sufficient appropriate audit evidence to provide a basis for an opinion.	A disclaimer of opinion is very rarely issued as it indicates that either: <ul style="list-style-type: none">• the auditor cannot obtain sufficient appropriate evidence on which to base an opinion on the financial report overall and the possible effects on the financial report could be both material and pervasive; or• the auditor cannot form an opinion due to the cumulative effect on the financial report of potential interaction of multiple uncertainties.	The company's financial reporting information system was corrupted and key data was lost, so that sufficient appropriate evidence is not available to support all of material disclosures in the financial report.
Adverse opinion	The opinion states that the auditor believes the financial report is not in accordance with the <i>Corporations Act 2001</i> , including giving a true and fair view and complying with the Australian Accounting Standards or the Corporations Regulations 2001.	An adverse opinion is issued when the auditor identifies misstatements which are both material and pervasive to the financial report.	The auditor believes that due to a significant economic downturn, a credit provider's management has inadequately provided for impairment of the company's loan portfolio which represents a very significant proportion of their assets. The auditor believes that the financial assets are overstated, so the financial report is materially misstated.

Source: CPA Australia. 'A Guide to Understanding Auditing and Assurance: Listed Companies', p. 19.

In certain limited circumstances, the auditor will issue an unqualified opinion, but will draw attention to or emphasise a matter that is relevant to the users of the audit report, but is not of such a nature that it affects the audit opinion. For example, there may be a major uncertainty that could affect the company's ability to remain a going concern, but this uncertainty is adequately disclosed by the company. It is a paragraph normally after the standard opinion paragraph that highlights a matter affecting the financial report, which is included in a note to the financial statements that more extensively discusses it. The main idea is to alert the reader to the facts in this note.

While previously you could have expected most auditors' reports to be worded pretty much the same, the introduction of key audit matters has introduced new information to the auditor's report and provides additional insights into the audit process that may be useful for the users of the financial statements in decision-making.

Key audit matters (KAM) are matters which are, in the auditor's professional judgement, of most significance in the audit. They are selected from matters communicated with the audit committee that required significant auditor attention in performing the audit, including areas of higher assessed risk and significant auditor judgements.

The KAM section of the audit report describes why the matter was considered to be a KAM, reference to the related disclosure, and how the matter was addressed in the audit. Standardised wording is not used in the KAM and the auditor presents the KAM in their own style and format. Some auditors include additional information such as the outcomes of the audit procedures in response to KAMs.



HOW'S YOUR UNDERSTANDING?

5C Outline the internal controls that would be likely to prevent, or at least detect, the case of fraud described below:

There have been recent reported incidents of attempted fraud on a variety of organisations. The fraud involves sending invoices for services or products not ordered or requested by the organisation. They tend to be for advertising or listing in a publication. The invoices can look very credible.



FOR YOUR INTEREST

The following extract provides a very strong rationale to explain the value of an audit.

Fair, orderly, and efficient capital markets help allocate capital to productive activities and create a level playing field for market participants. ... maintaining well-functioning capital markets is imperative for overall economic well-being and stability. For capital markets to function well, participants need transparent and trustworthy information - both financial and nonfinancial in nature. Current and potential investors require dependable data if they are to have confidence in the companies in which they are choosing to invest.

... An independent audit that provides reasonable assurance that these financial statements are free of material misstatements, whether due to error or fraud, increases the reliability of that information and enhances investor and market confidence.

Source: The Center for Audit Quality, *Value of the Audit: A Brief History and the Path Forward*, June 2021, page 3.

These views can be summarised in Figure 5.3 below.

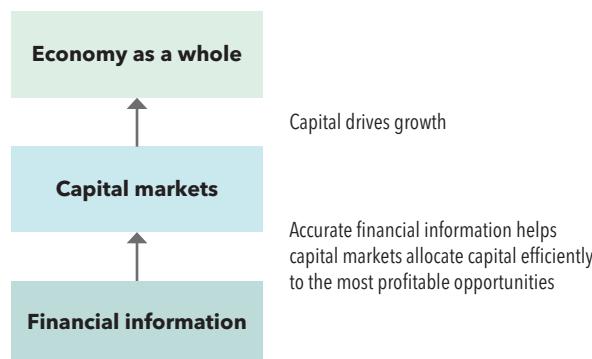


FIGURE 5.3 Financial information, capital markets and the general economy

Source: The Center for Audit Quality, *Value of the Audit: A Brief History and the Path Forward*, June 2021, page 5.

5.10 Independence of the auditor

LO10 Auditing standards state that the purpose of an audit is to enhance the degree of confidence of intended users of financial reports. Earlier in this chapter, you have seen that the quality of financial reporting can be enhanced by the roles of company directors, accounting and audit standard setters, ASIC, the Financial Reporting Council (FRC), and professional accounting bodies. All of these groups are affected by the complexity of the business models and environments that have resulted in more sophisticated (and complicated) reporting and audit standards. You have also seen that directors, audit committees and management have responsibility for high-quality financial reports which are, in turn, affected by accounting standards and systems of internal control within the companies. Achieving high-quality financial reporting contributes to audit quality.

Audit quality also requires high-quality audit standards, which in Australia are the responsibility of the AUASB (as discussed earlier in the chapter). Audit quality is also determined by both the competence and the independence of the auditor. Competence will depend on the policies and procedures set up within the audit firms (including the 'tone at the top' with respect to the leaders of those audit firms) and the training and review procedures within the firms.

Here we focus on the other key determinant of audit quality, namely auditor independence. Independence has two components: independence of mind and independence in appearance. The former allows the auditor to form an objective and impartial view when forming an opinion on the financial statements. Threats to this objectivity were discussed in respect of professional ethics. Independence in appearance means that users of the financial reports see auditors as being independent. This allows users to have confidence in the audit opinion, which enhances trust in the financial reports.

Both in Australia and internationally there have been numerous debates and public inquiries on issues related to auditor independence. These issues are important because auditor independence is a precondition for high audit quality and extremely critical in enhancing trust in the value of the audit.

In Australia there are already extensive requirements related to independence in the *Corporations Act 2001*, auditing standards and requirements in The Code of Ethics for Professional Accountants (the Ethics Code).

Exhibit 5.6 sets out four main issues related to auditor independence or other potential conflicts of interest and how they are presently addressed in Australia.

EXHIBIT 5.6

Threat	How mitigated?
Providing non-audit services to audit clients, for instance consulting services	The Code includes a list of non-audit services that auditors are not allowed to provide to public interest entities they audit. The rules essentially prohibit work that poses a threat to auditor independence, such as where the audit firm would assume a management responsibility, or work that has a material effect on the financial statements which are subject to audit, where the fees generated represent a large proportion of the revenue from an individual partner's clients, or the revenue of an individual office of the firm, and other specified situations. The <i>Corporations Act 2001</i> requires inclusion of the fees paid/payable to the auditor to be included in the directors' report, along with a statement whether they are satisfied the non-audit work is compatible with and does not compromise the independence requirements imposed by the Act. In addition, the <i>Corporations Act 2001</i> and the APRA Prudential Standards contain a legal test that prohibits a 'conflict of interest situation' with an audit client. It is based on what a reasonable person would conclude. If an auditor becomes aware of a conflict of interest situation, they must notify ASIC.
Auditor becomes too familiar with audited organisation over time	The <i>Corporations Act 2001</i> imposes stricter audit partner rotation requirements of five years for listed companies, which can be extended to seven years with director approval. The Code prohibits an individual from being a key audit partner for more than seven years for public interest entities. After such time there is a cooling-off period of five, three or two years depending on the audit partner's role. The cooling-off period for engagement partners for listed companies recently increased from two to three years, and will then increase from three to five years from 31 December 2023.
Partners or staff move from audit firm to audited organisation	The <i>Corporations Act 2001</i> imposes a mandatory period of two years before a partner of an audit firm/director of an audit company who was on the audit team for the audit of the audited organisation may become an officer of the audited organisation. There is also a prohibition on more than one former partner of an audit firm/director of an audit company (within five years) from being a director or taking a senior management position within an audited organisation at any one time. The directors' report must also include the names of directors who were previously partners of the audit firm at any time the audit firm conducted an audit. These requirements go beyond the international standards. The Code deems independence to be compromised if a former member of the audit team joins the audit client as a director/officer or another position able to exert significant influence over the preparation of the financial statements which are subject to audit, where a significant connection remains between the firm and the individual.
Auditor is appointed and paid by the audited organisation	Company boards and audit committees serve as the representative for shareholders in the auditing process, independent from management, having responsibility for auditor appointment, setting of fees, and oversight of the audit engagement.

Source: Adapted from Chartered Accountants Australia and New Zealand, Submission 2 – Inquiry into Regulation of Auditing in Australia.

Here we consider the first two issues raised in Exhibit 5.6 that have been consistently raised and were part of the terms of reference of the recent Inquiry by the Parliamentary Joint Committee on Corporations and Financial Services into Regulation of Auditing in Australia: the potential conflict of interest when audit firms provide various forms of consulting services to audit clients (non-audit services) and the potential conflicts related to long auditor tenure. The latter relates to the number of years the same audit firm can audit a particular company and the number of years the same partner is in charge of that audit. There are no easy solutions and we briefly provide the pros and cons of the arguments.

First, we consider the provision of non-audit services (e.g. other consulting services) by audit firms. We note that the concern is not when audit firms provide non-audit services to companies who are not audit clients. The issue is when both audit and non-audit services are provided to the same client. The issue is that there is a potential conflict of interest if the non-audit service fees are large when compared to the audit fees. That is, does the potential loss of non-audit service fee revenue affect judgements made during the audit. On the other hand, some non-audit services are complementary to the audit, as they require a deep understanding of the business, the company and its internal control systems. In this case, providing these

complementary services may, in fact, lead to higher quality audits because of the synergies and enhanced knowledge.

The second example identified as a potential threat to independence is long audit tenure with the client. Both in Australia and overseas there are restrictions on how long the same partner can audit a particular company. In some parts of Europe and the United Kingdom there are also restrictions on how long one audit firm can audit a client and they have introduced mandatory firm rotation after a certain period. The other side of the argument is that having to change audit firms can lead to higher costs for both the auditee and auditor because of the need to build up knowledge. This can negatively impact the quality of the audit in the first few years of the term of the new auditor as they develop this knowledge.

PRACTICE PROBLEMS

PRACTICE PROBLEM A

Explain the nature and purpose of internal control to a manager

A friend, Janet, has accepted a job as the general manager of a local company. During a meeting you attended, an accountant mentioned to Janet that she would be responsible for internal control within the company. When the accountant left the room, Janet turned to you and asked, 'What is internal control and why should I care about it?' Answer Janet's question, using clear language and avoiding technical jargon.

PRACTICE PROBLEM B

Ethics

From the following list:

- a self-interest
- b self-review
- c advocacy
- d familiarity
- e intimidation

State what type of threat each of the following situations provides.

- 1 Your client is suffering financial hardship, and has advised you that unless audit fees are dropped by 50 per cent the client will put the audit out to tender.
- 2 An audit client has temporary staff shortages, and another division of your firm provides staff to help out in preparing the financial statements.
- 3 Your major audit client is growing quickly, and now accounts for 40 per cent of your total fees.

DISCUSSION QUESTIONS

- 1 What are the key financial statements included in an annual report?
- 2 What is the purpose of the notes to the financial statements?
- 3 In addition to the financial statements, what else is included in an annual report?
- 4 Go to the webpage for a listed company, find its annual report and describe the contents of the CEO's report.
- 5 Write a paragraph discussing the following topic: 'The only thing worse than the large and complex set of practices, standards and theories that make up GAAP would be if there were no such thing as GAAP.'
- 6 What is an accounting policy choice?
- 7 In what areas do organisations often make policy choices?
- 8 Select five accounting policy choices. Describe the potential impact on profit and total assets of each of the choices.
- 9 Why do organisations have a choice on what accounting policies to use?
- 10 Given that accounting choices provide management with the opportunity to act in its own self-interest, what are the benefits for financial statement users of allowing managers to choose accounting policies?
- 11 What is internal control?
- 12 List the main components of internal control.
- 13 Why is internal control over cash so critical?
- 14 What types of organisations need strong internal controls over inventory?
- 15 What is segregation of duties? Provide three examples.
- 16 List four important internal controls over cash.
- 17 Discuss the following statement: 'No system of internal control is perfect. There are always inherent limitations.'
- 18 Why it is important to perform a cost–benefit analysis when designing an internal control system?

- 19 Discuss the following statement: 'A properly designed system of internal control over cash should prevent employee theft of cash.'
- 20 Discuss the relationship between the corporate manager's responsibility for internal control and his or her responsibility to earn profit for the shareholders.
- 21 Why is ethics so important to a profession? Is there really a necessity for ethical guidance for members of a profession?
- 22 Should a senior financial manager who works for a company, and is a professional accountant, have to meet the same standards of professional ethics as does a colleague who is an external auditor in public practice? Why, or why not?
- 23 What purpose does the auditor's report serve?
- 24 What are the types of audit reports, and what does each indicate to the users of financial statements?
- 25 To an investor, what value has been added to the financial statements by the auditor's report? Why?
- 26 Suggest some limitations regarding the value of the auditor's report that an investor should be aware of.
- 27 Auditors play an important role in the financial reporting system, and their independence from their clients is an essential feature of this system. Why is such independence considered necessary? Why is it difficult to maintain?
- 28 ASIC's report on audit inspection findings for 12 months to 30 June 2020 include the following:

'ASIC's latest review found that auditors did not, in our view, obtain reasonable assurance that the financial reports were free from material misstatement in 27 per cent of the 179 key audit areas that ASIC reviewed across 53 audit files. The results compare to 26 per cent in the 12 months to 30 June 2019. The largest numbers of adverse findings were in the audit of asset values, particularly impairment of non-financial assets and the audit of revenue.'

Source: © Australian Securities & Investments Commission. Reproduced with permission.

- a What does a 27 per cent deficiency rate mean?
- b What are possible reasons for asset valuation being an area where many of the adverse findings occur?

PROBLEMS

PROBLEM 5.1

Authoritative standards, capital markets and contracts

Many of the accounting methods you are studying in this book are based on authoritative standards (such as AASB Statements), which attempt to specify how companies' financial accounting should be done. Such standards don't cover everything: companies must still make many choices when they are preparing their financial statements.

Why are there authoritative standards for companies to follow? Why don't they cover everything? Should we have more or fewer of them? Situate your answer in the context of this chapter's theories about information use.

PROBLEM 5.2

Fundamental ethics principles

You work in the consulting division of one of the large accounting firms. You have been seconded to the audit division for three months to work on XYZ client audit. For each of the following circumstances, state whether there is a potential threat to compliance with fundamental ethics principles using the 'reasonable and informed third party test' as per APES 120.7.

- a You own shares in XYZ which you inherited last year.
- b You were part of the team that provided advice to XYZ two years ago on the improvements to their internal control system.
- c One of your former school friends works in the marketing department of XYZ.
- d The audit manager has emphasised that the audit cannot go over budget under any circumstances.

PROBLEM 5.3

Describe weaknesses in internal control

The following incidents took place in the DG Company:

- 1 Kylie, the cashier, pocketed cash received over the counter from customers paying their accounts. She then wrote off the receivables as uncollectable.
- 2 Joe used the company BPAY system to pay for construction done at his home.
- 3 Bill collects the cash from vending machines and keeps about 20 per cent for himself.
- 4 Liz inflates the hours she works on her time sheets.

For each incident, describe the internal control weakness that made the incident possible and describe procedures that would remove each weakness.

PROBLEM 5.4

Identify violated components of internal control

In each of the following cases, what component of good internal control is being violated (if any)?

- 1 Tough Ltd pays all its employees minimum wages and does not have pleasant working conditions.
- 2 Fred is a very conscientious employee who does such a good job that he does pretty much all of Whisp Ltd's office tasks.
- 3 Garand Ltd has a sophisticated internal control system that prepares various reports on discrepancies, which company management asks the accounting clerks to investigate and resolve.

PROBLEM 5.5

Recommend improvements in internal control of cash in a church

You have been appointed to the finance committee of your local church. The collections for Sunday services are taken up by a team of ushers. At the end of each service, the head usher counts the cash, then puts the total of the cash count and the cash in the safe. On Mondays, the church treasurer, who has been doing the job for the last 15 years, re-counts the cash, deducts a float to pay for incidental church expenses during the week, deposits the balance and records it in the church records. The church treasurer takes frequent overseas trips, so when he is away the takings accumulate in the safe until he returns.

Recommend improvements in control procedures.

PROBLEM 5.6

Explain cash control procedures and identify internal control weaknesses

- 1 Identify the internal control weaknesses in the following two cases and suggest a way of improving each situation.
 - a A supplier was paid twice for the same shipment. One payment was made upon receipt of the invoice and the second payment upon receipt of the monthly statement. The first payment was not listed on the statement, as it arrived after the statement date.
 - b The cashier pocketed cash he received over the counter from a few customers who had paid their accounts. The cashier then wrote the accounts receivable off as uncollectable.

PROBLEM 5.7

Top management responsibility for internal control

The proud owner of Beedle Ltd, a successful high-tech company, is very good at hiring and motivating excellent people to develop and sell products. Delegation is the key, says the owner. 'Hire good people and get out of their way!' As part of this philosophy, the owner hired the best accountants available and turned all the accounting, control and finance functions over to them. The owner concentrates on strategy and business planning, and the company has grown steadily for several years.

Explain to the owner the top management responsibilities that are being neglected here. Given that the company is so successful, does such neglect really matter?

PROBLEM 5.8

Prepare a report on internal control

The NSW Golf Society operates a museum for the benefit and enjoyment of present and potential golfers. During hours when the museum is open to the public, two clerks, who are positioned at the entrance, collect a \$5 admission fee from each non-member patron. Credit cards are accepted but a 10 per cent surcharge is made to cover costs, so many patrons pay cash. Members of golf clubs are permitted to enter free of charge if they show their membership cards.

At the end of each day, one of the clerks delivers the proceeds to the accountant. The accountant counts the cash in the presence of the clerk and places it in a safe. Each Friday afternoon, the accountant and one of the clerks deliver all the cash held in the safe to the bank, and receive an authenticated deposit slip, which provides the basis for the weekly entry in the cash receipts journal.

The board of directors of the Golf Society has identified a need to improve the system of internal control over cash admission fees. The board has determined that the cost of installing turnstiles for sales booths or otherwise altering the physical layout of the museum will greatly exceed any benefits that may be derived.

Required:

Identify weaknesses in the existing system of internal control over cash admission fees and recommend an improvement for each of the weaknesses you identify.

PROBLEM 5.9

Ethics

For each of the following situations, state which of the fundamental principles have been breached:

- 1 making a materially false statement
- 2 two accountants on a plane after a few beers discussing future plans of a taxation client
- 3 owning shares in an audit client
- 4 advertising that your firm's clients have fewer tax audits than clients of other firms
- 5 not providing adequate training for your audit staff.

PROBLEM 5.10

Ethics

From the following list:

- a self-interest
- b self-review
- c advocacy
- d familiarity
- e intimidation

State what type of threat each of the following situations provides.

- 1 You have been partner on CKT Ltd for over 20 years. The client has a reputation for producing very high-quality accounts.
- 2 You completed the audit below budget this year as you had the benefit of a new streamlined information system developed by your firm.
- 3 You are excited because tomorrow you will go on a month's holiday. You find an unusual transaction but when you mention it to your supervisor, he reminds you to consider the need to follow up, and that if you do so you will need to complete this before you go on holidays.
- 4 You inherit \$20 000 of shares in a client that you audit.
- 5 An audit client informs you that the CFO is retiring next year, and asks you to take the job after completion of this year's audit.

PROBLEM 5.11

Auditing

- 1 The general manager of a small company recently said: 'We need to have an external auditor for our financial statements so we can guarantee their accuracy to our bank.' Will that be the result if an auditor is appointed?
- 2 An auditor cannot obtain sufficient evidence as to the valuation of intangible assets. The rest of the financial statements are found to present a true and fair view in accordance with accounting standards. What type of audit report would be issued?

PROBLEM 5.12

Threats to an auditor's independence

Pat is the partner on the audit of Hardwood Emporium Ltd. Comment on whether or not, and why, each of the following may be a threat to Pat's independence.

- 1 Pat and the chief financial officer of Hardwood Emporium play golf together every few weeks.
- 2 During the audit, Pat notices that the company has a serious problem with its computer system. Pat's accounting firm is then hired by Hardwood Emporium to do a major redesign of the system, for a large fee.
- 3 As part of the completion of the audit, Pat works with the company to determine its likely income tax liability for the year, including helping to prepare the company's income tax returns. Pat bills the company for the tax advice separately from the audit fee.
- 4 Pat's former assistant on the Hardwood Emporium audit is hired by the company as the chief financial accountant, who is responsible for preparing all the company's financial statements.
- 5 Pat is asked to submit a bid on the audit fee for next year's Hardwood Emporium audit, in competition with several other accounting firms. Pat decides to submit a very low bid because the revenue from tax and consulting services would make up for the lower audit revenue.

PROBLEM 5.13

Auditors and forecast information

Recently, there has been pressure to expand the role of auditors, because investors and other groups are demanding more forward-looking information. If these demands are met, auditors may be expected to review the plans and forecasts of a company that will be reporting to the public, and to determine the fairness of such forward-looking financial statements.

Discuss the implications of this expanded role for auditors, using such concepts as independence, information value, comparability, agency theory, capital market theory, relevance, reliability, objectivity and any other concepts that you feel are important.

CASES

CASE 5A

Woolworths Limited

Refer to the 2021 annual report of Woolworths Limited in this book's appendix.

All questions relate to the consolidated accounts.

- 1 Find each of the following and indicate the page:
 - a summary data on the company's performance
 - b a letter to shareholders from the company's chairperson of the board of directors or managing director
 - c management discussion and analysis
 - d a corporate governance statement
 - e the directors' statement
 - f the auditor's report
 - g the directors' declaration
 - h the five-year summary.

- 2 Who is the auditor?
- 3 What are the main items covered in the auditor's report?
- 4 What are the main items covered in the directors' statement?
- 5 What are the main items addressed in the corporate governance statement?
- 6 What risk-management policies are discussed?
- 7 What does the company say about corporate ethical standards?
- 8 Identify two different groups of users of financial statements of Woolworths Limited.
 - a What decisions do they make based on corporate financial statements?
 - b What specific components of the Woolworths Limited financial statements would they be most interested in?
- 9 Are there any references to internal control by Woolworths Limited?

CASE 5B

Internal control disclosures

Following is an excerpt from the 2020 annual report of BHP Holdings Ltd

Management's assessment of our internal control over financial reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting ...

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements and, even when determined to be effective, can only provide reasonable assurance with respect to financial statement preparation and presentation. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate.

Under the supervision and with the participation of our management, including our CEO and CFO, the effectiveness of BHP's internal control over financial reporting has been evaluated based on the framework and criteria established in internal controls - Integrated Framework (2013), issued by the Committee of the Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation, management has concluded that internal control over financial reporting was effective as at 30 June 2020. There were no material weaknesses in BHP's internal controls over financial reporting identified by management as at 30 June 2020.

BHP has engaged our independent registered public accounting firm, EY, to issue an audit report on our internal control over financial reporting for inclusion in the financial statements section of the Annual Report and the Annual Report on Form 20-F as filed with the SEC.

There have been no changes in our internal control over financial reporting during FY2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. This includes COVID-19, which only had a minor impact on internal controls over financial reporting in relation to both the number and nature of controls that were impacted.

BHP, Annual Report 2020, p. 134.

- 1 Who is responsible for internal control?
- 2 Provide examples of potential limitations of internal control.
- 3 Why can internal controls provide only reasonable assurance that business risks will be fully mitigated?
- 4 Provide an example of COVID-19 effects on internal control.

CASE 5C

Internal controls over intangible assets

For many companies, their most valuable assets are not their cash and their inventory but their intangible assets. These intangible assets may include brand names, mastheads, patents and items that are trademarked or covered by copyright.

- 1 What internal control procedures can be put in place by companies to protect their:
 - a brand names?
 - b patents?
 - c trademarks/copyright?

- 2 The control procedures you have identified in question 1 will vary by how much they cost and what benefit may be derived from them. For each item of intellectual property, identify a very costly procedure that could be employed and a very inexpensive procedure.
- 3 Perform a cost–benefit analysis and identify whether you recommend your costly or your inexpensive procedure by examining the potential benefit that could be obtained by the company, relative to its costs.

CASE 5D

Audit reports

Select an annual report of a large listed company on the ASX. Find the audit report and answer the following questions:

- 1 Who is the audit firm?
- 2 What type of audit report is given (see Exhibit 5.5)?
- 3 What conclusion does the auditor come to?
- 4 What does the audit cover?
- 5 What does the audit not cover?
- 6 What does the audit report say about (a) internal control, (b) fraud and (c) going concern?
- 7 Is there an emphasis of matter paragraph?
- 8 How many KAMs listed? Select one KAM and explain why the auditor considered it a KAM.

HOW'S YOUR UNDERSTANDING? SOLUTIONS

- 5A**
- (i) Password access for authorised users, edit checks and no payment greater than \$x.
 - (ii) The person who records cash transactions does not physically handle cash.
 - (iii) Locks, swipe-card access to approved employees, and video cameras in shops.
- 5B**
- 1 Directors, as per the first paragraph.
 - 2 Because it decreases the risk of not detecting misstatements resulting from fraud or error.
 - 3 No, the auditor needs to obtain an understanding of internal control relevant to the audit but does not express an opinion on the effectiveness of internal controls. However, auditors in the USA do express such an opinion.
 - 4 The auditor does communicate significant audit findings to the board and various subcommittees of the board such as the audit committee. This communication would include any significant deficiencies in internal control found during the audit.
- 5C**
- Matching purchase orders with invoices received would alert companies to this fraud.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

The answer to this problem could be quite wide-ranging. One approach is to say that internal control involves managing and safeguarding assets and that managers such as Janet should care about internal control because they are responsible for these management and safeguarding activities, on behalf of the owners. Some details that might be included would be to list particular components of internal control and note management's responsibility for each. Some such components are as follows:

- Keeping control over the company is part of management's general objective and so internal control is consistent with and helpful to managers' general purposes.
- Some specific aspects of internal control Janet may want to think about:
 - physical protection of assets (fences, safes, locks, passwords on computers)
 - economic protection of assets (avoiding obsolescence, keeping assets maintained and so on)

- insurance against loss (probably cheaper the better the control is)
- generally staying aware of the location, condition, economic value and other important features of assets.
- Some techniques that are helpful to managers like Janet:
 - segregation of duties
 - good, reliable records
 - timely reports on assets' use and condition
 - periodic verification of records
 - cost-effective physical protection
 - proper motivation and monitoring of employees, customers and others with access to assets.

PRACTICE PROBLEM B

- 1 Intimidation, as it appears to be a threat to change auditors
- 2 Self-review, as the auditor would be reviewing financial statements that were partly prepared by their firm
- 3 Self-interest, given the high percentage of revenue from one client

Financial statement analysis



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** outline the objectives of financial statement analysis (6.1, 6.2)
- LO2** identify the limitations of financial statement analysis (6.2)
- LO3** prepare common size statements (6.3)
- LO4** calculate commonly used ratios to analyse a firm's profitability, activity, liquidity and financial structure (6.4)
- LO5** use ratios to analyse and evaluate a firm's overall financial performance and financial position (6.5)
- LO6** perform 'what if' analysis to identify the impact of events on the ratios (6.6, 6.7)

CHAPTER OVERVIEW

With the background you now have on the content of financial statements and how financial markets work, you are ready to begin conducting some financial statement analysis. This chapter provides you with tools to analyse and evaluate the financial performance and the financial position of an organisation.

Our main focus will be on ratio analysis, with 'what if' analysis introduced to expand your analytical toolkit. Ratios are grouped into four key categories: profitability, activity, liquidity and financial structure. In combination, these categories provide insights into a company's overall financial performance and position.

When you evaluate a company's performance, you need to evaluate it relative to the company's circumstances. For example, ratios and performance trends should be benchmarked in comparison with prior years or with similar companies based on size or industry.

Ratio analysis is the main technique described in this chapter. Ratios are grouped in specific categories: profitability, activity, liquidity and financial structure, which provide insight into a company's overall performance.

6.1 Investment and relative return

LO1 We make investments to earn a return. The return is usually thought of in relation to the amount of the investment required to earn it. For example, you may be pleased with a \$1000 annual return if you invested \$2000, but disappointed if you invested \$2 million. One way to relate the two components is via return on investment, in which the return is the numerator and the initial investment is the denominator:

$$\text{Relative return (return on investment)} = \text{Return}/\text{Investment}$$

Thus we need to have some way of measuring both return and investment, if we are to calculate (and evaluate) relative return. Much of financial statement analysis is based on ratios such as ROI. Some points you should remember about ratios are as follows:

- The purpose of a ratio is to produce a scale-free, relative measure of a company that can be used to compare it with other companies, or other years for the same company. Such a measure is scale-free because both numerator and denominator are usually measured in the same units (dollars), which are both related to the size of the company. A large company will have a larger investment than a small one, and should be expected to have a larger return as well, but a ratio like ROI cancels out some of the effects of size, and so allows the large and small companies to be usefully compared.
- The ratio will be unreliable as a comparison, or even misleading or useless, unless its numerator is appropriate. This means that the numerator must be properly calculated, as well as suitable for the comparison being made. The word 'return' in ROI can be defined in various ways, such as net profit, earnings before interest and tax (EBIT) or cash flow from operations. The appropriate choice of numerator depends on the context of the analysis, as we will discuss later in this chapter. Also, the role of GAAP and other rules in making figures such as net profit meaningful is very important to the conclusions that may be drawn from ratio analysis.
- These same points apply equally to the denominator of the ratio. Possible denominators include total assets, gross assets and shareholders' equity. Additionally, sometimes a doubtful or ambiguous accounting method can create a problem in both the numerator and the denominator, bringing the whole ratio into question. An example here is that if a company chooses a revenue recognition method that increases net profit, it will also make the retained profits figure inflated, throwing into question one of the most widely used ROI-type ratios, called return on equity (ROE), which is calculated as net profit divided by equity (including retained profits).

6.2 Introduction to financial statement analysis

LO1 The purpose of financial statement analysis is to use the financial statements to evaluate an organisation's financial performance and financial position. Therefore, the value of the analysis depends on the quality of the underlying financial statements, as well as the analysis undertaken.

LO2

Financial evaluation is not just calculation

When you have completed this chapter, you will be able to take a set of financial statements of almost any company and make an evaluation of its performance and position. Remember that such an evaluation is not just a calculation; it is also a judgement based on the calculations that make sense for that company and is based on developing a substantial body of knowledge about the company. The more you know about a company, its business, its industry, its management and its accounting methods, the more useful and credible your analysis will be.

Financial accounting information is not used in a vacuum; it is part of a vast array of information available to investors, creditors, managers and other stakeholders. Its use is affected by its own quality, such as whether a company's financial statements have been carefully prepared and are comparable with other companies' statements. Use is also affected by the availability of other sources of information that may

contain all or part of what is in the financial statements. Remember the idea from the discussion of capital market research in Chapter 6: it is difficult to ‘beat the market’ using financial statements, because the statements reflect events which are known to market participants, and other sources of information are also available to those investing in the sharemarket. You should always view financial accounting information as part of a network of information, not as a stand-alone item. To explain and illustrate various techniques, however, this chapter deals with them separately.

Preparation for intelligent analysis

Unless you know why you’re conducting a financial statement analysis – that is, what decision or evaluation is dependent on it – you can’t get very far with it. Also, unless you have substantial knowledge of the organisation, you can’t interpret the figures your analysis produces; for example, what is good performance for a new company in a troubled industry may be unsatisfactory for an established company in a prosperous industry.

Much of financial analysis involves ratios. They have little meaning on their own: they are merely indicators that can be interpreted and used meaningfully only with a good understanding of the company, its industry and the accounting policies used in preparing the financial statements. The scale-free nature of a ratio means that it allows comparisons over certain periods of time, among companies of different sizes and with other indicators such as interest rates or share prices. Yet it can be tempting to think that when you have calculated a ratio, you have something meaningful in itself. While there is some fundamental meaning in each ratio, as you will see, what the comparisons mean to the analyst’s decision must be informed by their knowledge and information beyond ratios.

Therefore, in order to conduct an intelligent and useful financial statement analysis, you should do the following:

- 1 Learn about the organisation, its circumstances and its plans. This is essential in any real analysis: don’t be misled by the limited information given for the examples in this book. Be sure to obtain the latest annual report for the organisation (you will find it on its website). The annual report’s descriptive sections including the management discussion and analysis and the footnotes to the financial statements will help you learn about the organisation.
- 2 Obtain a clear understanding of the decision or evaluation to which the analysis will contribute, who is the decision maker (investor, lender, creditor or management) and what assistance she or he requires.
- 3 Calculate the ratios, trends and other figures that apply to your specific problem. Don’t calculate every possible ratio.
- 4 Find whatever comparative information you can to provide a frame of reference for your analysis. Industry data, reports by other analysts, results for similar companies or the same company in other years and other such information are often plentiful.
- 5 Focus on the analytical results that are most significant to the decision-maker’s circumstances, and integrate and organise the analysis so that it will be of most help to the decision-maker.

There are many sources of information regarding companies to help you become knowledgeable about them and able to place your analysis in context. As you might expect, there is more information about large companies than small ones, and more about publicly listed companies (those whose shares and other securities are listed on stock exchanges) than about private ones (those that are closely held by a few owners). Company websites will generally make available financial statements and other useful information about the company as a starting point for your analysis.

Preparers of financial statements can choose between a number of accounting policies on which to base the financial information. (You’ve seen this already in earlier chapters.) As the analyst of these statements, you may wish to recast them using other policies that you prefer before calculating any of the ratios. For example, some analysts deduct intangible assets, such as goodwill, from assets and shareholders’ equity before calculating ratios. They reason that, because these assets are not physical in nature, some people may doubt their value. Deleting them, therefore, may improve comparability with companies that do not include such assets on their balance sheets.

It is also relevant to note that the validity of financial analysis based on accounting ratios has been challenged. Among the objections are criticisms that future plans and expected results, not historical numbers, should be used in calculating ratios, especially liquidity ratios; current market values, not historical numbers, should be used for assets, debts and shareholders' equity in calculating performance ratios; and cash flow, not accounting profit, should be used in calculating performance ratios. Another objection is that because, at least for public companies, stock markets and other capital markets adjust prices of companies' shares as information is released, calculating ratios based on publicly available information cannot tell you anything the markets have not already incorporated into share prices. While these criticisms are controversial, they are reminders to use ratios with care and intelligence.

6.3 Common size statements

LO3 While the emphasis in this chapter is on ratio analysis, it should be noted that another useful method to analyse financial results is the common size financial statement. By calculating all balance sheet figures as percentages of total assets and all income statement figures as a percentage of total revenue, the size of the company can be approximately factored out. This procedure assists in comparing companies of different sizes and in identifying trends over time for a single company.

For example, consider the following income statement for the years ended 30 June 2021 and 2022.

	2022 \$000	2021 \$000
Sales	1 549	1 289
COGS	<u>387</u>	<u>258</u>
Gross margin	1 162	1 031
Operating expenses		
Administration	101	82
Selling	125	104
Distribution	77	66
Depreciation	124	97
Other	<u>39</u>	<u>32</u>
Operating profit before tax	<u>696</u>	<u>381</u>

If we express these numbers as a common size statement, the following will result:

	2022 %	2021 %
Sales	100.0	100.0
COGS	<u>25.0</u>	<u>20.0</u>
Gross margin	75.0	80.0
Operating expenses		
Administration	6.5	6.4
Selling	8.1	8.1
Distribution	5.0	5.1
Depreciation	8.0	7.5
Other	<u>2.5</u>	<u>2.5</u>
Operating profit before tax	<u>44.9</u>	<u>50.4</u>

You can see that operating profit before tax as a percentage of sales has dropped from 50.4 per cent to 44.9 per cent. This change is brought about almost exclusively because the COGS expense has become a higher percentage of sales (increasing from 20.0 per cent to 25.0 per cent). This technique can be used to identify large changes in composition of revenues, expenses or types of assets, liabilities and equity.

6.4 Financial statement ratio analysis

Let's turn now to consider how we use ratios to analyse the financial statements. The various types of ratios that can be used to analyse a company's financial performance and position are outlined on the following pages. (There are more ratios that can be calculated, but this is a meaningful set to start with for most types of organisations. Often other ratios that can be calculated are more industry-specific and you can research those if you are focused on analysing a particular industry.)

Exhibit 6.1 provides a summary of the ratios and the calculations. The ratios are categorised as profitability ratios, activity ratios, liquidity ratios and financial structure ratios.

LO4**EXHIBIT 6.1****RATIO CALCULATIONS**

Ratio	Numerator	Denominator
Profitability ratios		
Return on equity	Operating profit after tax	Shareholders' equity
Return on assets	Operating profit after tax	Total assets
Alternative return on assets	Earnings before interest and tax	Total assets
Profit margin	Operating profit after tax	Sales
Alternative profit margin	Earnings before interest and tax	Sales
Gross margin	Sales - COGS	Sales
Cash flow to total assets	Cash provided by operations	Total assets
Earnings per share	Operating profit after tax - preference share dividends	Weighted average number of ordinary shares outstanding
Price-to-earnings ratio	Market price per share	Earnings per share
Dividend payout ratio	Annual dividends declared per share	Earnings per share
Activity (turnover) ratios		
Total asset turnover	Sales	Total assets
Inventory turnover	COGS	Inventory
Days in inventory	365	Inventory turnover ratio
Debtors turnover	Credit sales	Trade debtors
Days in debtors	365	Debtors turnover ratio
Liquidity ratios		
Current (working capital) ratio	Current assets	Current liabilities
Quick ratio	Cash + accounts receivable + short-term investments	Current liabilities
Interest coverage ratio	Earnings before interest and tax	Net interest expense
Financial structure ratios		
Debt-to-equity ratio	Total liabilities	Total shareholders' equity
Debt-to-assets ratio	Total liabilities	Total assets
Leverage ratio	Total assets	Total shareholders' equity

Profitability ratios

RETURN ON EQUITY (ROE)

Return on equity (ROE) is also sometimes referred to as return on shareholders' equity, return on shareholders' funds or return on net worth. It is calculated as operating profit after tax divided by total shareholders' equity.

$$\text{ROE} = \frac{\text{Operating profit after tax}}{\text{Shareholders' equity}}$$

Return on equity (ROE) indicates how much return the company is generating on the historically accumulated shareholders' investment (contributed share capital, reserves and retained earnings). Users of financial information (e.g. bankers and share analysts) can choose how they calculate these ratios depending on the purpose of their assessment. In the numerator, operating profit after tax is usually used. Operating profit after tax generally excludes any extraordinary or one-off items. Shareholders' equity can be taken straight from the balance sheet or can be calculated from the accounting equation as total assets minus total liabilities. The denominator can be year-end equity or average equity over the year; for a growing company, you would expect a slightly larger ROE figure for the latter.

With these different calculation options available, differences between versions of ratios are common. They are usually not large and, as long as you calculate your ratio in the same way from year to year, you should be able to identify major changes and trends regardless of how you calculated the ratio. As mentioned, users of financial information can choose how they calculate these ratios depending on the purpose of their calculation.

RETURN ON ASSETS (ROA)

A key concern of managers is to determine the return they generate on the assets under their control. Return on assets (ROA) can be calculated as follows:

$$\text{ROA} = \frac{\text{Operating profit after tax}}{\text{Total assets}}$$

Different organisations use different versions of the numerator. These include operating profit after tax, operating profit after tax but before interest expense, and operating profit before tax and interest expense. For the denominator, the total assets figure can be the year-end figure or the annual average. We have given you some alternatives here, so you can exercise care when comparing ratios calculated and presented by different organisations. Again, provided a consistent method is used by an organisation or business unit each year, the major trends should be visible. This highlights the value of being able to calculate ratios that you understand yourself, so that you know what calculation assumptions apply.

An alternative ROA is often calculated using earnings before interest and tax (EBIT). This ratio is calculated as earnings before interest and tax divided by total assets. EBIT is a measure of profit based on the operating profit before interest and taxes are deducted.

This ratio is often used as a measure of the performance of operating managers, as interest and tax expenses are outside their control, they are excluded here. It is important to have a performance measure where the components are controllable by those whose performance is being measured. The alternative ROA indicates the ability of the organisation to generate a return on its assets before considering the cost of financing those assets (interest) or taxes. It helps in judging whether borrowing is worthwhile. For example, if it costs 5 per cent to borrow money, the organisation should expect to earn at least 5 per cent on the assets acquired with these funds.

As EBIT is not always shown in the financial statements, it can be calculated by adding interest back to net profit before tax (i.e. EBIT equals net profit before tax plus interest).

You may be wondering what the relationship is between changes in ROE and changes in ROA from period to period. Leverage provides the link between ROA and ROE. While we will consider the DuPont formula in more detail in Chapter 17, at this stage it should be noted that:

$$\text{ROE} = \text{ROA} \times \text{Leverage}$$

The leverage ratio is defined as:

$$\text{Leverage} = \frac{\text{Total assets}}{\text{Shareholders' equity}}$$

The ratio measures the proportion of equity funding in the asset base. The higher the ratio, the smaller the shareholders' funding of assets, and the greater the proportion of total assets that must have been funded by debt.

PROFIT MARGIN

Profit margin is often calculated as operating profit after tax (OPAT) divided by sales.

$$\text{Profit margin} = \text{OPAT}/\text{Sales}$$

Profit margin indicates the percentage of sales revenue that ends up as profit, so it is the average profit on each dollar of sales. For example, a 10 per cent profit margin would mean that 10 cents in net profit, after income tax and all other expenses, is generated from each dollar of sales, on average. It is a useful measure of performance, and gives some indication of pricing strategy or competition intensity. You might expect a discount retailer in a competitive market to have a low profit margin, and a high-end, luxury jeweller to have a high margin, for example.

An alternative version of profit margin can be calculated by dividing EBIT by sales revenue. The use of EBIT/sales is common in practice, as both the numerator and denominator are under management's control.

GROSS MARGIN

The gross profit figure in the numerator of this ratio usually appears on the company's income statement. If this is not disclosed, you calculate it as sales minus COGS.

$$\text{Gross margin} = (\text{Sales} - \text{COGS})/\text{Sales}$$

Gross margin depends on the difference in price between what a company pays for the goods it sells and the price for which it can sell them. It provides a further indication of the company's product pricing and sales mix. For example, a gross margin of 33 per cent indicates that the company's average mark-up on cost is 50 per cent here (revenue equals 150 per cent of cost, where cost is 67 per cent of revenue and gross margin is the remaining 33 per cent). This is a rough indicator only, especially for companies with a variety of products or unstable markets.

EARNINGS PER SHARE

Earnings per share (EPS) relates earnings attributable to ordinary shares to the number of ordinary shares issued. It is calculated by dividing operating profit after tax minus dividends on preference shares by the weighted average number of ordinary shares outstanding.

$$\text{Earnings per share} = (\text{Operating profit after tax} - \text{Preference share dividends}) / \text{Weighted average number of ordinary shares outstanding}$$

Accounting standards require basic EPS to be disclosed in every set of accounts. The numerator is operating profit after tax minus any preference share dividends. For consolidated financial statements, the profit figure is arrived at after deducting outside equity in the operating profit. The weighted average number of ordinary shares issued is provided in the annual report, as it cannot be calculated by those outside the organisation. It can become quite a complicated calculation, and will be discussed further in later courses.

If a company has potential commitments to issue further shares – such as in stock-option plans to motivate senior management, or preference shares or debt convertible to ordinary shares at the option of the holder of the preference shares – the potential effect of the exercise of such commitments is calculated by showing both basic EPS and fully diluted EPS. ('Dilution' refers to the potential lowering of return to present shareholders resulting from other people exercising rights arising from commitments already made by the company.)

PRICE-TO-EARNINGS RATIO

Price-to-earnings (PE) ratio is calculated as current market price per share divided by EPS.

$$\text{Price-to-earnings ratio} = \frac{\text{Market price per share}}{\text{EPS}}$$

The PE ratio relates the accounting earnings and market price of the shares, but since the relationship between such earnings and changes in share market prices is not straightforward (this will be discussed in Chapter 8), the interpretation of PE is somewhat controversial. Nevertheless, it is a widely used ratio, appearing in many publications and analyses of companies. Many newspapers around the world include PE in their daily summaries of each company's share market trades and prices.

The idea is that, because market price should reflect the market's expectation of future performance, PE compares the present performance with those expectations. A company with a high PE is expected to show greater future performance than its present level, while one with a low PE is not expected to perform much better in the future. High-PE companies are those that are popular and have strong share prices, while low-PE companies are not as popular, with low share prices relative to their present earnings. PE is highly subject to general increases and decreases in market prices, so it is difficult to interpret over time, and is more useful when comparing similar companies listed in the same stock market at the same point in time.

DIVIDEND PAYOUT RATIO

Dividend payout ratio is calculated as annual dividends declared per share divided by EPS.

$$\text{Dividend payout ratio} = \frac{\text{Annual dividends declared per share}}{\text{EPS}}$$

This is a measure of the portion of earnings paid to shareholders. For example, if the dividend payout ratio is 0.40, 40 per cent of profit was distributed to shareholders and the remaining 60 per cent was kept in the company (known as retained profit) to finance assets or reduce debts. A stable ratio suggests that the company has a policy of paying dividends based on profits, and a variable ratio suggests that factors other than profits are important in the Board of Directors' decisions to declare dividends.

Activity (turnover) ratios

TOTAL ASSET TURNOVER

Calculated as a ratio of sales to total assets, this and similar turnover ratios relate the company's dollar sales volume to its size, thereby answering the question: how much sales volume is associated with a dollar of assets?

$$\text{Total asset turnover} = \frac{\text{Sales}}{\text{Total assets}}$$

Turnover and profit margin ratios are often useful to review together, because they tend to move in opposite directions. Companies with high turnover tend to have low margins, and those with low turnover tend to have high margins. Those extremes represent contrary marketing strategies or competitive pressures: pricing low and targeting a high volume versus pricing high and making more on each unit sold.

The asset turnover ratio should also be considered together with the profit margin ratio and the return on assets ratio, that is:

$$\begin{aligned}\text{ROA} &= \text{Profit margin} \times \text{Asset turnover} \\ \frac{\text{Net profit}}{\text{Total assets}} &= \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}}\end{aligned}$$

It can be seen from these equations that a change in ROA can be the result of either a change in the profit margin, a change in asset turnover, or both. If it is the profit margin, you can drill down further to find the reason for the change (e.g. by looking at the gross margin ratio, expenses/sales ratios and common size statements using the income statements). For example, if the gross margin ratio was constant and the profit margin ratio is increasing, then the increase is due to lower expenses as seen in the expenses/sales ratio. These were discussed earlier in this chapter. If the change is a result of asset turnover, it is possible to drill down further by looking at such ratios as inventory turnover and debtors turnover, which are discussed in the next two parts of this section.

You can see how profit margin and asset turnover interact to produce the return on assets. In one company, a low margin and a high turnover may generate the return. In another, a high margin and a low turnover may generate the return. Profit margin and turnover are likely to offset each other in generating the return on assets. This is because competitive pressures are likely to force down selling prices and, therefore, profit margins if a high turnover is desired. Conversely, if you want to cater to the high-priced end of the market, you are less likely to have large sales volumes. Think of the great results you can deliver if you can achieve both a high margin and high volume (hence our worry about monopolies), or of how disastrous things are for companies facing both a low margin and low volume.

This integrated form of analyses, where we consider the relationships between ratios, is discussed in more detail in Chapter 17. There, you will see how we create a narrative about an organisation's performance by looking at various ratios in particular combinations.

INVENTORY TURNOVER

Inventory turnover is calculated as COGS expense divided by inventory. We use closing inventory for the year, but if there are large fluctuations in inventory, sometimes average inventory figures are used.

$$\text{Inventory turnover} = \text{COGS}/\text{Inventory}$$

This ratio relates the level of inventory to the volume of activity. A company with low turnover may be at risk of inventory obsolescence or deterioration in its inventory, and/or may be incurring excessive storage and insurance costs. In recent years, many companies have attempted to reduce inventories to the minimum, keeping just enough on hand to meet customer demand or even ordering inventory as it is demanded by customers (as in the 'just in time' method of minimising inventories without running out of stock and irritating customers). However, this has to be balanced with the risk of losing sales – and, potentially, customers – if stock is unavailable.

Inventory turnover can be converted to measure how long, in days, inventory is held on average. This is achieved by dividing 365 by the inventory turnover rate. This is usually referred to as days in inventory or number of days' stock.

DEBTORS TURNOVER

Debtors turnover is also called accounts receivable turnover. This ratio is calculated by dividing credit sales by trade debtors (accounts receivable).

$$\text{Debtors turnover} = \text{Credit sales}/\text{Trade debtors}$$

As credit and cash sales are not disclosed separately in an annual report, it is necessary to make some assumptions about the percentage of sales that are on credit. For companies where most sales are on credit (such as BHP, CSR or Telstra), it is normal to use the sales figure given in the annual report. As cash sales are collected immediately, using this figure for retailers such as Woolworths or Coles is meaningless, as most of their sales are for cash. The trade debtors' figure in the ratio refers to gross trade debtors (i.e. before deducting the allowance for doubtful debts). Again, either year-end or average trade debtors can be used, with the latter common, particularly where there are substantial fluctuations in debtors.

Debtors turnover can be converted into a time period often called days in debtors or days sales in receivables. This ratio indicates how many days it takes, on average, to collect a day's sales revenue. It becomes

sizeable when accounts receivable becomes larger relative to sales, so a large collection ratio is a negative signal. It may raise questions about the company's policies for granting credit and the effectiveness of its collection attempts. The ratio is subject to significant seasonal changes for many companies, usually rising during heavy selling periods (such as just before Christmas for a retailer) and falling during slower times.

Liquidity ratios

CURRENT RATIO

Current ratio is calculated as current assets divided by current liabilities.

$$\text{Current ratio} = \text{Current assets} / \text{Current liabilities}$$

This ratio has already been used several times in this book. It indicates whether the company has enough short-term assets to cover its short-term debts. A ratio above 1 indicates that working capital is positive (current assets exceed current liabilities), and a ratio below 1 indicates that working capital is negative. Generally, the higher the ratio, the greater the financial stability and the lower the risk for both creditors and owners. However, the ratio should not be too high, because that may indicate that the company is not reinvesting in long-term assets to maintain future productivity. Also, a high current ratio can actually indicate problems if inventories are building up more than they should, or collections of receivables are slowing down.

The current ratio is a very commonly used indicator. Many writers use a rough rule that indicates this ratio should be around 2 (twice as much in current assets as current liabilities), but this is simplistic. Many large companies regularly operate with a current ratio closer to 1 than 2. The ratio's interpretation depends on the specific circumstances of each company. Interpretation of it is also complex, because it is a static ratio, measuring financial position at a point in time and not considering any future cash flows the company may be able to generate to pay its debts.

This ratio is most useful for companies that have cash flows that are relatively smooth during the year, and hardest to interpret for those that have unusual assets or liabilities, or depend on future cash flows to pay current debts. An example of the latter would be a company that owns a rented building. There may be few current assets and large current liabilities for mortgage payments, but as long as the building is mostly rented and rental revenue is steady, the company is not in difficulty, even though its current ratio is low. However, it is more at risk than a similar company with a higher current ratio, because that company could more easily weather a loss of tenants.

QUICK RATIO

The quick ratio is also called the acid test. It is calculated as:

$$\text{Cash + Accounts receivable + Short-term investments} / \text{Current liabilities}$$

This is a more demanding version of the current ratio, and indicates whether current liabilities can be paid without having to sell inventory; that is, it is generally the same as the current ratio, except inventory is removed from the numerator. The ratio is particularly useful for companies that cannot convert inventory into cash quickly if necessary.

INTEREST COVERAGE RATIO

Interest coverage ratio is usually calculated as EBIT divided by net interest expense. Interest coverage ratio and similar coverage ratios based on cash flow figures indicate the degree to which financial commitments (in this case, those to pay interest on debts) are covered by the company's ability to generate profit or cash flow. (Net interest expense refers to the difference between interest expense and interest revenue.)

$$\text{Interest coverage ratio} = \text{EBIT} / \text{Net interest expense}$$

A low coverage ratio (generally below 3) indicates that the company is not operating at a sufficiently profitable level to cover its interest obligation comfortably, and may also be a warning of solvency problems (difficulty in meeting obligations over the long term).

Financial structure ratios

DEBT-TO-EQUITY RATIO

Debt-to-equity ratio is generally calculated as total liabilities divided by total shareholders' equity. This ratio measures the proportion of borrowing to owners' investment (including retained profits). Therefore, it indicates the company's policy regarding financing of its assets.

$$\text{Debt-to-equity ratio} = \text{Total liabilities} / \text{Total shareholders' equity}$$

A ratio greater than 1 indicates that the assets are financed more with debt, while a ratio of less than 1 indicates that the assets are financed more with equity. A high ratio is a warning about risk: the company is heavily in debt relative to its equity and may be vulnerable to interest rate increases, a general tightening of credit or creditor nervousness. (A high ratio also indicates that the company is highly geared or leveraged, which means that it has borrowed to increase its assets over the amount that could be acquired with owners' funds alone, and hopes thereby to increase returns and benefit the owners.)

DEBT-TO-ASSETS RATIO

Debt-to-assets ratio is calculated by dividing total liabilities by total assets plus shareholders' equity. This is equivalent to dividing total liabilities by total assets (given that total assets equal total liabilities, plus shareholders' equity). This ratio is correlated with the debt-to-equity ratio, and indicates the proportion of assets financed by liabilities.

$$\text{Debt-to-assets ratio} = \text{Total liabilities} / \text{Total assets}$$

The debt-to-assets ratio can also be calculated by just comparing long-term debt or external debt to assets, and other variations are possible. As mentioned previously, users of financial information can choose how they calculate these ratios depending on the purpose of their calculation. Again, provided a consistent method is used, the major trends should be visible.

LEVERAGE RATIO

Leverage ratio is defined as total assets plus shareholders' equity all divided by shareholders' equity. Given the accounting equation, it can also be defined as total assets divided by shareholders' equity.

$$\text{Leverage ratio} = \text{Total assets} / \text{Total shareholders' equity}$$

The ratio considers how much of the company's assets are financed by shareholders' equity. The higher the ratio, the smaller the proportion of total assets funded by shareholders' equity and, therefore, the more that is funded by debt.

SUMMARY

Ratios are a quick method of breaking the information in the financial statements down into a form that allows for comparability with similar companies and with the financial performance of the company over time (usually several years). Ratios also offer the advantage that different ratios consider different parts of a company's performance. Thus, if you do not want to investigate anything more about a company than its liquidity, you might only calculate liquidity ratios, such as the quick and current ratios.

Users rely on more than ratios and other calculations from the financial statements when analysing a company's performance. They also rely on the parts of the annual report that precede the financial statements (including strategy and sustainability performance information), the auditor's report, notes to the financial statements, reports by various analysts, personal knowledge of management, news media reports and much more.

Some pieces of information that users can find in the first part of an annual report include management's interpretation of past and prospective performance, new ventures or growth strategies for the company and indications of the areas of operations that were undergoing stress or change.

Notes to financial statements provide further explanations of some key areas in these statements. They can include information about a company's accounting policy for particular accounts, detailed calculations of how some account values were determined, and notifications of any accounting policy changes, significant litigation and other possibly significant items. All this information, along with the statements themselves, and any ratios or other analyses, help users form a well-rounded picture of the company.

Note that some companies include some of the ratios discussed in this chapter in their annual report; however, they may not be identical to those you calculate. For example, for Woolworths, some calculations use averages based on information that is often not in an annual report (such as monthly balances).

6.5 Financial statement ratio analysis example

LO5 The analyses in this section use the 30 June 2022 financial information of Transport Limited presented in Exhibits 6.2–6.5.

EXHIBIT 6.2

TRANSPORT LIMITED
CONSOLIDATED BALANCE SHEET

	2022 \$m	2021 \$m
Assets		
Current assets		
Cash and short-term investments	353.0	134.7
Accounts receivable (Note 9)	434.7	395.7
Inventory	134.1	106.4
Prepayments	70.2	87.4
Total current assets	<u>992.0</u>	<u>724.2</u>
Noncurrent assets		
Investments (Note 11)	96.0	105.6
Net PPE (Note 12)	8 393.5	8 219.6
Other assets and deferred charges (Note 13)	1 018.3	907.3
Total noncurrent assets	<u>9 507.8</u>	<u>9 232.5</u>
Total assets	<u>10 499.8</u>	<u>9 956.7</u>
Liabilities		
Current liabilities		
Accounts payable and accrued liabilities	975.3	907.0
Income and other taxes payable	16.2	13.5
Dividends payable	21.0	20.2
Long-term debt maturing within one year (Note 14)	275.7	13.9
Total current liabilities	<u>1 288.2</u>	<u>954.6</u>





Noncurrent liabilities		
Deferred liabilities (Note 16)	767.8	702.8
Long-term debt (Note 14)	3 075.3	3 348.9
Future income taxes (Note 7)	<u>1 386.1</u>	<u>1 295.8</u>
Total noncurrent liabilities	<u>5 229.2</u>	<u>5 347.5</u>
Total liabilities	<u>6 517.4</u>	<u>6 302.1</u>
Net assets	<u>3 982.4</u>	<u>3 654.6</u>
Shareholders' equity (Note 19)		
Share capital	1 421.0	1 412.7
Foreign currency translation adjustments	77.0	88.0
Retained profits	<u>2 484.4</u>	<u>2 153.9</u>
Total equity	<u>3 982.4</u>	<u>3 654.6</u>

EXHIBIT 6.3

TRANSPORT LIMITED
CONSOLIDATED INCOME STATEMENT

	2022 \$m	2021 \$m	2020 \$m
Revenues			
Freight	3 728.8	3 479.3	3 471.9
Other	<u>174.1</u>	<u>181.4</u>	<u>193.7</u>
Total revenues	<u>3 902.9</u>	<u>3 660.7</u>	<u>3 665.6</u>
Operating expenses			
Wages and employee benefits	1 259.6	1 163.9	1 143.4
Fuel	440.0	393.6	358.3
Materials	178.5	179.2	168.7
Equipment rents	218.5	238.5	255.4
Depreciation and amortisation	407.1	372.3	340.2
Other	<u>682.6</u>	<u>827.6</u>	<u>555.6</u>
Total operating expenses	<u>3 186.3</u>	<u>3 175.1</u>	<u>2 821.6</u>
Operating profit	<u>716.6</u>	<u>485.6</u>	<u>844.0</u>
Other charges (Note 5)	36.1	33.5	21.8
Foreign exchange gain on long-term debt	(94.4)	(209.5)	(13.4)
Interest expense (Note 6)	218.6	218.7	242.2
Income tax expense (Note 7)	<u>143.3</u>	<u>41.6</u>	<u>105.9</u>
Net profit	<u>413.0</u>	<u>401.3</u>	<u>487.5</u>
Basic earnings per share (Note 8)	<u>2.60</u>	<u>2.53</u>	<u>3.08</u>
Diluted earnings per share (Note 8)	<u>2.60</u>	<u>2.52</u>	<u>3.06</u>

EXHIBIT 6.4

TRANSPORT LIMITED
STATEMENT OF CONSOLIDATED CASH FLOWS

	2022 \$m	2021 \$m	2020 \$m
Operating activities			
Receipts from customers	3 945.1	3 404.5	3 621.0
Payments to suppliers and employees	(2 780.0)	(2 818.9)	(2 512.6)
Interest paid	(231.2)	(236.0)	(240.2)
Income tax paid	(147.9)	(43.9)	(104.7)
Net cash provided by operating activities	<u>786.0</u>	<u>305.7</u>	<u>763.5</u>
Investing activities			
Additions to properties (Note 12)	(673.8)	(686.6)	(558.5)
Other investments	(2.5)	(21.9)	4.0
Net proceeds from disposal of properties	<u>10.2</u>	<u>8.2</u>	<u>3.5</u>
Cash used in investing activities	<u>(666.1)</u>	<u>(700.3)</u>	<u>(551.0)</u>
Financing activities			
Dividends paid	(81.7)	(80.8)	(80.8)
Issuance of shares	2.5	2.0	2.0
Issuance of long-term debt	193.7	699.8	–
Repayment of long-term debt	(16.1)	(376.6)	(405.7)
Cash provided by (used in) financing activities	<u>98.4</u>	<u>244.4</u>	<u>(484.5)</u>
Cash position			
Increase (decrease) in net cash	218.3	(150.2)	(272.0)
Net cash at beginning of year	<u>134.7</u>	<u>284.9</u>	<u>556.9</u>
Net cash at end of year	<u>353.0</u>	<u>134.7</u>	<u>284.9</u>

EXHIBIT 6.5

TRANSPORT LIMITED

NOTE 6

	2022 \$m	2021 \$m	2020 \$m
Interest expense			
Interest expense	223.9	226.4	254.2
Interest income	(5.3)	(7.7)	(12.0)
Net interest expense	<u>218.6</u>	<u>218.7</u>	<u>242.2</u>
Gross cash interest payments	<u>231.2</u>	<u>236.0</u>	<u>240.2</u>

To make sure you are familiar with the Transport Limited (hereafter, Transport) financial statements, and so are ready to begin the analysis, answer the following questions:

- What were the company's total assets at 30 June 2022? Was this balance greater or less than at 30 June 2021?
- What was the total shareholders' equity of the company at 30 June 2022?

- What was the company's net profit for the year ended 30 June 2022? What were the main revenues and expenses that resulted in this profit?
- How much cash was generated by operations for the year ended 30 June 2022? Did the company end the financial year with more or less cash than at the beginning of the financial year?
- How much did accounts receivable changes contribute to the increases and decreases in non-cash working capital used in calculating cash from operations in 2022?
- What is the link between the statement of cash flows and the balance sheet?
- What is the link between the balance sheet and the income statement?

Some of the ratios that can be used to analyse a company's financial performance and position are presented on the following pages. Each ratio is illustrated by showing how it is calculated from the Transport financial statements. Some interpretive and comparative comments are made as illustrations, but the main purpose of this section is to show you how to extract the needed information from the statements and calculate the ratios. In Chapter 17, we will focus more on interpretation, and you will have an opportunity to conduct integrative ratio analysis.

Most of the figures that follow are presented in millions of dollars, as they are in Transport's statements. Ratios are calculated arbitrarily generally to one decimal place. They can be calculated to more decimals, but that suggests false accuracy, because the ratios depend on the various judgements and estimates made in assembling the financial statements. They should not be thought of as precise quantities, but rather as indicators.

The ratios calculated for Transport are also summarised in Exhibit 6.7. Remember, these should be used in combination with each other, because each has only part of the story to tell. To help you see their main uses, the ratios are grouped into four categories:

- profitability ratios
- activity (turnover) ratios
- liquidity/solvency ratios
- financial structure ratios.

Profitability ratios

RETURN ON EQUITY

Transport's ROE (based on year-end equity) for the last two years was:

- 2022: $\$413.0/\$3982.4 = 10.4\%$
- 2021: $\$401.3/\$3654.6 = 11.0\%$.

This profit return relative to equity was in the range of many companies' ROE. The 2022 return was a little lower than 2021. Both profit and equity were higher at the end of 2022 than at the end of 2021, but equity grew proportionally more at 9.0 per cent ($(\$3982.4 - \$3654.6)/\$3654.6$) than profit at 2.9 per cent ($(\$413.0 - \$401.3)/\$401.3$). The analyses to come will tell us more about how the ROE came about and how it relates to other indicators.

RETURN ON ASSETS

Transport's ROA, based on year-end assets, was:

- 2022: $\$413.0/\$10 499.8 = 3.9\%$
- 2021: $\$401.3/\$9956.7 = 4.0\%$.

These ROAs are considered low to moderate. In the present environment, they are a little above the rates that can be obtained on a fixed deposit with the bank. Transport is taking more risk to earn its returns than you might take on bank deposits, so it should be able to generate a higher return from its assets.

ROE AND ROA

These two relative return ratios may be compared, as is done in the table that follows. Whenever the ROE exceeds the ROA, it means the company is making extra money for the owners by borrowing to make the assets greater than they would be with just equity funding.

In both years, leverage (as shown in the table) more than doubled the ROA:

- 2022: \$10 499.8/\$3982.4 = 2.64 times
- 2021: \$9956.7/\$3654.6 = 2.72 times.

TRANSPORT LIMITED
ROE AND ROA

	ROE	ROA	Leverage
2022	10.4%	3.9%	2.64 times
2021	11.0%	4.0%	2.72 times

Note: ROE = ROA × Leverage (with some rounding differences)

PROFIT MARGIN

Transport's profit margin for 2022 was 10.6% (\$413.0/\$3902.9), and for 2021 was 11.0% (\$401.3/\$3660.7). Transport earned 10.6 cents per dollar of revenue in 2022 and 11 cents in 2021:

- 2022: (\$413.0/\$3902.9) = 10.6%
- 2021: (\$401.3/\$3660.7) = 11.0%.

The combination of freight revenue growth of 7.2 per cent ((\\$3728.8 – \\$3479.3)/\\$3479.3), while controlling operating expenses, which increased only 0.4 per cent ((\\$3186.3 – \\$3175.1)/\\$3175.1), would lead to an increase in the profit margin. The positive outcome was offset by increases in non-operating costs and lower foreign exchange gains on long-term debt.

GROSS MARGIN

Gross margin cannot be calculated for Transport. The company sells services, not products, so it has no COGS to report.

It is a reminder that financial statement analysis is dependent on the contents of the financial statements. We cannot analyse information we do not have, or this will be irrelevant or inapplicable to the particular company we are analysing.

COMMON SIZE INCOME STATEMENT

There are, however, other ways of relating Transport's revenues and expenses. Using the common size income statement shown overleaf, the various categories of expenses can be related to revenue or comparative purposes.

Common size comparisons can be done using a variety of assumptions. To illustrate the analysis, here are common size percentages for the three years included in Transport's income statement. Freight revenue can be used as the baseline, because freight is Transport's main business, but to connect with other analyses being illustrated, *total revenue* is used here. This is a judgement, of the sort the analyst *always* has to make. To further illustrate judgement, some income statement items are grouped and others are not; different groupings may lead to different conclusions. All percentages are rounded to one decimal place.

**TRANSPORT LIMITED
COMMON SIZE INCOME STATEMENTS**

	2022 %	2021 %	2020 %
Revenues			
Freight	95.5	95.0	94.7
Other	<u>4.5</u>	<u>5.0</u>	<u>5.3</u>
Total	100.0	100.0	100.0
Operating expenses			
Wages and employee benefits	32.3	31.8	31.2
Fuel	11.3	10.8	9.8
Other expenses	<u>38.1</u>	<u>44.2</u>	<u>36.0</u>
Operating profit	18.3	13.2	23.0
Foreign exchange gain	(2.4)	(5.7)	(0.4)
Interest and other charges	6.5	6.9	7.2
Income tax expense	<u>3.7</u>	<u>1.1</u>	<u>2.9</u>
Net profit	<u>10.5</u>	<u>10.9</u>	<u>13.3</u>

Two interesting trends are immediately apparent: wages and employee expenses as a percentage of sales have increased each year, and interest and other charges have been falling. The reduction in interest and other charges has been insufficient to offset the rising operating costs.

EARNINGS PER SHARE

Transport had no discontinued operations, but it did have commitments potentially requiring it to issue more shares (stock options). Therefore, the income statement shown at the beginning of this section shows two EPS figures for each year:

- 2022: basic EPS = \$2.60; diluted EPS = \$2.60
- 2021: basic EPS = \$2.53; diluted EPS = \$2.52.

The weighted average number of common shares outstanding during 2022 was 158.7 million (158.5 million for 2021). The dilutive effect of the outstanding share options is quite small: less than \$0.01 in 2022 and only \$0.01 in 2021. This indicates Transport has granted only a relatively small number of stock options to its employees in recent years.

BOOK VALUE PER SHARE

Book value per share is calculated as: (shareholders' equity – preference shares)/number of common shares issued. We have not discussed this ratio earlier, so a bit more detail is provided here. Similar to EPS, this ratio relates the portion of the shareholders' equity attributable to the residual common shareholders to the number of shares outstanding, and so brings the company's balance sheet down to the level of the individual shareholder. It is not really a performance ratio, but shareholders' equity does include retained profit, so it incorporates accumulated performance. As the balance sheet figures do not reflect the current market value of most assets or of the company as a whole, many people feel that book value per share is a largely meaningless ratio. Other people feel that, as an accumulation, it is less subject to manipulation than annual earnings, and some accounting research uses book value per share as a preferred measure to EPS. In any case, you will see it mentioned in many financial publications.

Using the same 158.7 million shares outstanding at the end of 2022, and the 158.5 million shares outstanding at the end of December 2021 (a small number having been issued under stock option plans) for 2022, Transport's book value per common share was:

- 2022: $\$3982.4/158.7 = \25.09
- 2021: $\$3654.6/158.5 = \23.06 .

Normally, book value per share increases as retained profits accumulate and new shares are issued. Indeed, the increase in book value per share of \$2.03 (\$25.09 – \$23.06) is very close to the increase in retained profits per share, \$2.08 ($(\$2484.4 - \$2153.9)/158.7$).

The company's closing share price on 31 December 2022 was \$41.10, so its price to book ratio was 1.64 ($\$41.10/\25.09 from above). Thus the company's *market capitalisation* was 64 per cent higher than its book value. With 158.7 million shares outstanding, the stock market valued Transport at about \$6.5 billion, compared to its equity book value of around \$4 billion.

PRICE-TO-EARNINGS RATIO

Transport's stock price has fluctuated somewhat throughout 2021 and 2022, but the trend has been to fairly steady growth. Using the year-end closing prices, which are close to the highs for the year, gives a conservative view of the price-to-earnings ratio:

- 2022: PE = $\$41.10/\$2.60 = 15.8$ times
- 2021: PE = $\$36.58/\$2.53 = 14.5$ times.

This is a solid PE, again indicating that the market sees Transport as a good, fairly safe investment – no high-flyer, but not likely to suddenly go bust either. To get an idea of the range of PEs, check the financial section of your daily newspaper or the business section of a news website.

DIVIDEND PAYOUT RATIO

Transport has only a short history of dividend payouts. We can learn the total dividend amount each year from the statement of retained profits. Using this information and the average number of shares outstanding, an estimate of annual dividends can be calculated.

From the information in Exhibit 6.6 we can infer that Transport appears to be conservative and stable. It appears that the board of directors has chosen to follow a policy of conservative stable dividends in the amount of about \$0.52 per share yearly or 20 per cent of total net profit.

EXHIBIT 6.6		TRANSPORT LIMITED		
		ESTIMATE OF ANNUAL DIVIDENDS		
		2022	2021	2020
Dividends declared (\$ millions)		82.5	80.8	80.8
Net profit (\$ millions)		413.0	401.3	487.5
Weighted average number of shares outstanding (millions)		158.7	158.5	158.5
Basic EPS (\$)		2.60	2.53	3.08
Dividend per share (calculated) (\$)		0.52	0.51	0.51
Dividend payout ratio (%)		20.0	20.2	16.6

The dividend payout ratio is usually consistent with the company's PE ratio. Fast-growing companies are often strapped for cash, so pay few or no dividends, ploughing earnings back into more growth. People hold the shares of such companies because they expect growth in share price, not dividends, and because of such expectations of future growth, the PE ratios of such companies are usually high. In contrast, people invest in some more stable, safe companies, not because they expect high share price growth but because they expect regular dividends. Transport pays more than zero dividends, but with its supply of cash could

have paid a higher percentage of earnings than it did. This reinforces the growing conclusion from these ratios that Transport is a solid, moderate company, not a high-growth one – as we would expect from a transport company that is more than 100 years old.

Activity (turnover) ratios

TOTAL ASSET TURNOVER

Using year-end assets, Transport's total asset turnovers were:

- 2022: $\$3902.9/\$10\,499.8 = 0.372$ times
- 2021: $\$3660.7/\$9956.7 = 0.368$ times.

Two observations are noted here:

- These turnover ratios are very low. They are well below those of most companies, with Transport taking nearly three years to earn a dollar of revenue on each dollar of assets. This is attributable to Transport having thousands of truck depots, maintenance shops and so on. This highlights the need to consider the type of industry in which the organisation being analysed operates.
- Transport's asset turnover improved slightly from 2021 to 2022. This improvement is the result of higher growth in revenues, 6.6 per cent ($(\$3902.9 - \$3660.7)/\$3660.7$), than in assets, 5.5 per cent ($(\$10\,499.8 - \$9956.7)/\$9956.7$). While the change is small, it is another indication of the stability of Transport. Remember, there are no absolute ratios; only relative comparisons between companies in the same industry and, in this case, across time.

INVENTORY TURNOVER

As we have already seen, Transport does not have a COGS, and its balance sheet indicates its inventories are just supplies for running the transport, not goods for sale, so we cannot calculate a meaningful inventory turnover ratio. Using Transport as the example company has this shortcoming, as the inventory turnover ratio is not important here. However, it is very important for evaluating retailers and other sellers of goods.

DEBTORS TURNOVER

Debtors turnover can be converted into days in debtors, which is what we have calculated here. Transport's collection ratios were:

- 2022: $365/(\$3902.9/\$434.7) = 40.7$ days
- 2021: $365/(\$3660.7/\$395.7) = 39.5$ days.

It is preferable to use only revenue from credit sales in the denominator, since cash sales are collected immediately, but few companies break their revenue figures down to separate cash revenue.

It takes the company about a month and one-third, on average, to collect from its customers. This is a reasonable time: most customers pay monthly, and Transport may have some relatively slow payers among its customers.

Liquidity/solvency ratios

CURRENT RATIO (WORKING CAPITAL RATIO)

Transport's current ratio changed only slightly in 2022:

- 2022: $\$992.0/\$1288.2 = 0.77$ times
- 2021: $\$724.2/\$954.6 = 0.76$ times.

This ratio shows Transport's working capital position to be negative; that is, there are insufficient current assets on hand to repay all current liabilities. We have noted throughout that Transport is a very stable company. It is also the case that Transport generates its revenue using its long-term assets to provide service rather than selling its current assets, as in the case with retailers. Thus, by using its current revenues as earned and collected, Transport is able to meet the required payments of expenses and current liabilities despite the working capital deficit.

QUICK RATIO (ACID TEST RATIO)

Using the quick ratio is likely to be informative if a company's working capital includes large amounts of inventories that would have to be sold to pay bills, or large prepaid expenses that have drained cash. Transport doesn't have either of these, so the quick ratio will not tell us much more than the current ratio does, but let's calculate it anyway. The ratio is shown as follows:

- 2022: $(\$353.0 + \$434.7)/\$1288.2 = 0.61$ times
- 2021: $(\$134.7 + \$395.7)/\$954.6 = 0.56$ times.

This shows Transport has liquid assets equal to only 60 per cent of its current liabilities. This is low, but is likely adequate, assuming Transport can match its payments for at least some of its suppliers roughly to the time it takes to collect from its own customers.

INTEREST COVERAGE RATIO

The interest coverage ratio is usually calculated as (profit before interest expense and income tax) divided by net interest expense. Transport's interest coverage ratios, using the net interest expense from Note 6, were:

- 2022: $(\$413.0 + \$143.3 + \$218.6)/\$218.6 = 3.54$ times
- 2021: $(\$401.3 + \$41.6 + \$218.7)/\$218.7 = 3.03$ times.

The result here is consistent with the other debt-related ratios: Transport's interest coverage is comfortable, though with its decreased borrowing and the decreased interest that goes with it, it is more comfortable than it was in 2021.

Financial structure ratios

DEBT-TO-EQUITY RATIO

Transport's debt-to-equity ratios were:

- 2022: $\$6517.4/\$3982.4 = 1.64$ times
- 2021: $\$6302.1/\$3654.6 = 1.72$ times.

The debt-to-equity ratio certainly shows that Transport is leveraged, relying more on debt than on equity, but that its relative reliance on debt is decreasing.

LONG-TERM DEBT-TO-EQUITY RATIO

Another version of debt-to-equity ratio is long-term debt-to-equity ratio, calculated as (long-term loans + mortgages + bonds + similar long-term debts) divided by total equity. This ratio has many versions, depending on which specific items the analyst decides to include as debt. It is frequently referred to as the debt-to-equity ratio, under the apparent assumption that longer-term debt is more relevant to evaluating risk and financing strategy than are the accrual and non-interest-bearing components of total liabilities.

For Transport, this ratio involves just the one long-term debt figure on the balance sheet. Not including the debt's current portion, the resulting ratios were:

- 2022: $\$3075.3/\$3982.4 = 0.77$ times
- 2021: $\$3348.9/\$3654.6 = 0.92$ times.

Again we see the downward trend in Transport's reliance on debt.

DEBT-TO-ASSETS RATIO

Using total liabilities, the ratios for Transport were:

- 2022: $\$6517.4/\$10\,499.8 = 0.62$ times
- 2021: $\$6302.1/\$9956.7 = 0.63$ times.

The pattern is the same as for the debt/equity ratios.

Concluding comments about the ratios calculated

The ratios are summarised in Exhibit 6.7. Each one focuses on a different aspect of performance, and the comparison of each with the prior or other years tells us something, and also invites us to learn more about the company so we can understand what each ratio is indicating.

EXHIBIT 6.7	SUMMARY OF RATIOS FOR TRANSPORT LIMITED	
	2022	2021
ROE	10.4%	11.0%
ROA	3.9%	4.0%
Profit margin	10.6%	11.0%
Gross margin	Not available	Not available
EPS (reported audited figure)	\$2.60	\$2.53
Book value per share	\$25.09	\$23.06
PE ratio (approximate)	15.8 times	14.5 times
Dividend payout ratio	20.0%	20.2%
Total asset turnover	0.372 times	0.368 times
Inventory turnover	Not available	Not available
Debtors turnover	40.7 days	39.5 days
Current ratio	0.77 times	0.76 times
Quick ratio	0.61 times	0.56 times
Interest coverage ratio	3.54 times	3.03 times
Debt-to-equity ratio	1.64 times	1.72 times
Long-term debt-to-equity ratio	0.77 times	0.92 times
Debt-to-assets ratio	0.62 times	0.63 times



HOW'S YOUR UNDERSTANDING?

- 6A** How well did Transport perform in the 2022 financial year as compared to the 2021 financial year?
6B How was Transport's liquidity at the end of 2022? Is that an improvement since the 2021 financial year?

Overall conclusions from Transport Limited's financial statement analysis

Here are some conclusions to connect the various analyses in the preceding sections and make an overall evaluation of Transport's financial performance and position.

PERFORMANCE

Transport's story is of steady, stable performance, showing a mixture of small improvements and small declines from 2021 to 2022. Return on equity and return on assets declined slightly, while earnings per share rose. The reasons are contained in the slight decline in profit margin, and small growth in both revenues and operating expenses, resulting in little growth in net profit. Transport's price-to-earnings ratio and price-to-book ratio indicate that the stock market sees the company as a solid investment, not a high-flyer. Dividends will be important if share price growth is low.

ACTIVITY (TURNOVER)

The company's asset turnover was relatively slow: it is a large-asset transport company, so that is to be expected. The bulk of its assets are noncurrent. The company's revenues grew slightly faster than its assets, providing a small improvement in the asset turnover from 2021 to 2022. Receivables collections slowed slightly, which also impacts the asset turnover. Taken together, the activity ratios are further indications that Transport is a mature company that is stable and not rapidly expanding or changing.

LIQUIDITY/SOLVENCY

The company had negative working capital (ratio less than 1) in both 2022 and 2021. Despite this situation, Transport is able to meet its current liability obligations by generating cash from operations and by maintaining a balance among cash, accounts receivable and accounts payable. Inventories were not a major part of Transport's working capital, so the quick ratio was only a little weaker than the working capital ratio. Interest coverage was comfortable compared both to profit and (as cash from operations was larger than profit) to cash flow.

FINANCIAL STRUCTURE

Transport was leveraged with 60 per cent more debt than equity. This means that about two-thirds of its assets were provided by creditors and only one-third by owners. The debt-to-equity ratio has been declining since Transport became independent, mainly through the growth of retained profits. Most of its financing was long term, like its assets: the company was following common principles of matching the financing term to the assets being financed.

OVERALL SUMMARY

Transport in the 2022 financial year was a stable company, maintaining a healthy cash flow and slightly improved earnings and returns to shareholders. Long-term debt, and therefore risk, were reduced relative to the 2021 financial year, helping improve liquidity and so reducing short-term risk. The various ratios and share price performance indicate that the company is not extreme in any dimension, positively or negatively, and so being an attractive investment though not a high-flyer. Its market capitalisation and price-to-earnings ratio indicate that investors expect similar performance and moderate growth in the future.

6.6 'What if' effects on ratios

LO6 Now we will examine three 'what if' (effects) analysis examples. For each, we will ask seven standard questions to help you see the extent of the analysis that is possible. We will ask what the effect is on each of the following factors:

		Abbreviation
1	Net profit for the current year	Net profit
2	Income tax liability at the end of the current year	Tax liability
3	Cash from operations for the current year	Operating cash flow
4	Current ratio at the end of the current year	Current ratio
5	Return on equity for the current year	ROE
6	Return on assets (using EBIT) for the current year	ROA
7	Debt-to-equity ratio at the end of the current year	D/E ratio

Here are the three examples to consider (assume a 40 per cent income tax rate for all):

- 1 Handee Hardware Ltd is considering borrowing \$1 million as a short-term loan from the bank.
- 2 Eastern Mining Ltd proposes to write down the value of an unproductive mine by \$25 million.
- 3 Gibson Ltd decides, for accounting purposes, to depreciate equipment over 10 years instead of over 20 years. There is no change in the tax treatment.

Solution notes: example 1

The effect of Handee Hardware Ltd borrowing \$1 million as a short-term loan from the bank on:

- *Net profit*: no effect on current profit (until after the borrowing, when interest begins to accumulate).
- *Tax liability*: no effect on income tax (until after the borrowing, when interest incurred becomes a tax-deductible expense).
- *Operating cash flow*: no effect on operating cash flows.
- *Current ratio*: cash is a current asset and the bank loan is a current liability, and both are increased, so there is no effect on working capital. But to think about effects on the current ratio, consider the following possible situations:

	Current assets		Current liabilities		Current ratio	
	Before	After	Before	After	Before	After
a	6 000 000	7 000 000	3 000 000	4 000 000	2.00	1.75
b	6 000 000	7 000 000	5 000 000	6 000 000	1.20	1.17
c	6 000 000	7 000 000	7 000 000	8 000 000	0.86	0.88
d	6 000 000	7 000 000	9 000 000	10 000 000	0.67	0.70

You can see from these situations that such an event drives the current ratio towards 1: down towards 1 if it were higher, and up towards 1 if it were lower. So, there is no effect on working capital because it is the difference between current assets and current liabilities, and the effects on each cancel one another out. However, there is an effect on the current ratio, because it is current assets divided by current liabilities, and the effects on each depend on the level of the ratio before the change.

- *ROE*: no effect until interest starts to accumulate and any revenues or decreased costs for which the money is used begin. Whether ROE ultimately goes up or down depends on whether the company has borrowed wisely. For example, the money may be used to pay suppliers sooner and get early-payment discounts that are greater than the interest paid to the bank for the money, in which case ROE will go up eventually.
- *ROA*: in this case, total assets increases, and there is no effect on profit until interest starts to accumulate. At this point ROA will decrease.
- *D/E ratio*: this will go up, because the company has more debt and there has been no immediate effect on equity (no effect on profit).

Solution notes: example 2

The effect of Eastern Mining Ltd writing down the value of an unproductive mine by \$25 million on:

- *Net profit before tax*: the mine asset cost will be credited, accumulated depreciation will be debited and an expense, loss on mine closure, will be debited. The full effect would be a \$25 million reduction on current profit.
- *Tax liability*: probably some reduction in income tax liability. The exact effect depends on resolving the tax deduction uncertainty.
- *Operating cash flow*: no effect on cash or cash from operations.
- *Current ratio*: no effect on working capital or on the current ratio, unless there is a reduction in the current income tax liability. In such case, working capital and the ratio will increase.

- *ROE*: profit will fall; therefore, so will ROE. The write-off will equally reduce profit and equity (retained profit after including the lower profit), so the ratio's fall will be reduced a little by the decline in the denominator as well as the numerator.
- *ROA*: like ROE, this will fall because of the effect on profit.
- *D/E ratio*: this will go up because the company has less equity.

Solution notes: example 3

The effect of Gibson Ltd deciding, for accounting purposes, to depreciate equipment over 10 years instead of over 20 years with no change in tax treatment on:

- *Net profit*: profit will decrease because of the increased amount of depreciation expense.
- *Tax liability*: no impact on tax, as tax treatment of depreciation does not change.
- *Operating cash flow*: no impact on cash flow from operations.
- *Current ratio*: as neither current assets nor current liabilities are affected, the current ratio will not be affected.
- *ROE*: both profit and equity (via retained profits) will fall by the same amount. Assuming the ratio is less than 100 per cent, the ratio will fall.
- *ROA*: both profit and total assets (via accumulated depreciation) will decrease by the same amount. Assuming the ratio is less than 100 per cent, the ratio will fall.
- *D/E ratio*: will increase as equity falls because of the drop in retained profits.



HOW'S YOUR UNDERSTANDING?

- 6C** Strapped Ltd, which has \$190 000 in current assets and \$170 000 in current liabilities, borrows \$40 000 from the bank as a long-term loan, repayable in four years. What is the effect of this loan on working capital? On the current ratio? On current net profit?
- 6D** Slipshod Ltd has discovered that it has estimated insufficient warranty expenses, because more customers are returning products for repair than had been expected. The company decides to recognise an additional \$130 000 in noncurrent warranty liability, and, therefore, in corresponding expenses. The company's income tax rate is 35 per cent. What will this do to the current year's net profit? To cash from operations? To the current ratio?

6.7 Measuring a manager's performance

LO6 Financial statements do not measure a manager's performance without sensitive and informed interpretation, and even then, often not very satisfactorily. For example, if a company follows standard financial accounting methods uncritically, making no attempt to adjust them to fit its own circumstances, the resulting financial statements will provide clear, but sometimes very arbitrary, measures of the performance of the company's management. On the other hand, if the company ignores standard methods entirely, designing its own accounting methods for everything, the resulting financial statements will provide a relevant but hard-to-compare measure of management performance. Most companies are in between these extremes, which means that there are some arbitrary aspects of financial statements and some difficulties in comparing them.

It is hard to determine how much a company's performance is really due to management and how much depends on other factors, such as economic trends, product price changes, union pressure and even pure luck (good or bad). Also, in most companies, management is a group, so it is difficult to set one manager's performance apart from the group's. The result is that evaluating a manager's performance with financial statements requires great care and knowledge of the company and its industry.

The ratios and other calculations used in financial analysis can easily compound the problem. Let's take the example of return on assets. Consider the case of two companies, A and B. Company A has assets of \$100 000 and EBIT of \$20 000, for a 20 per cent ROA. Looks great. Yet the manager of Company A is not looking into the future much, so is not keeping the company's assets or maintenance up to date.

Company B is exactly the same, except that the manager of Company B is very aware of the need to stay competitive and look after the assets, and has therefore spent \$10 000 on new assets and \$2000 on an improved maintenance program. As a result, B's assets are \$110 000 and its EBIT is \$18 000, for a 16 per cent ROA. Consequently, A looks better than B: ROA is reduced both by a smaller numerator and a larger denominator in the case of B.

You can see that, unless the person doing the financial analysis really understands the situation, the prudent and responsible manager of B will look worse than the neglectful manager of A!

Consider another example of two managers of printing companies. Both of the companies have an EBIT of \$100 000. Both companies' only material asset is a printing machine that cost \$1 million, and has a life of 10 years. Company C bought the machine two years ago (accumulated depreciation \$200 000; book value \$800 000) and company D bought its machine four years ago (accumulated depreciation \$400 000; book value \$600 000). In this simplified situation, company C would have an ROA of 12.5 per cent (\$100 000/\$800 000), while company D would have an ROA of 16.67 per cent (\$100 000/\$600 000). Again, care needs to be taken in interpreting the figures and evaluating managers' performances based on ratios.



FOR YOUR INTEREST

Here is some of the evidence about financial statement analysis produced by accounting research:

- If the financial statements have new or unexpected information (as would those of most private and/or small companies), analysis of them is valuable in order to interpret the results.
- Ratios calculated from financial statements have some value in predicting company failure or other financial problems. Research indicates that, for some companies, financial problems can be predicted several years in advance using accounting ratios.
- Financial analysis is an important activity in the monitoring of lending agreements, management bonus plans and other contractual arrangements. Many such agreements involve analysis because they specify that deterioration of some ratios (such as debt-to-equity) will trigger penalties or even the termination of the agreement, or because ratios are used in calculating bonuses or other payments.
- Even though annual reports come out rather a long time after the financial year-end, there is enough reaction by stock markets to them to indicate that analysis of the reports still provides valuable information to market traders.
- People cannot cope with masses of disaggregated data: it takes too long to comprehend and requires too much special expertise. Therefore, summarising techniques such as financial analysis play a major role in users' decision-making.
- Analysts' forecasts of earnings, based partly on financial statement data, do help to predict companies' future earnings performance. The analysts often can anticipate significant changes in earnings because they are following companies closely, so market prices regularly change before the new financial statements are released.
- Risk and return are generally related. Investments with a higher potential return often are riskier, and those with a low risk usually have a low potential return. Different investors have different risk preferences: some prefer to hold risky shares that may generate high returns (or large losses!), while others prefer more secure investments. Financial statement analysis helps to assess risk, and thus helps investors choose the shares that seem appropriate to their risk preferences.
- Financial statement analysis is useful to corroborate what people already believe about a company's performance, position or risk. Even if such analysis turns up little that is 'new', it acts as a check on the other flows of information about companies, because the validity of that information can be verified later when the financial statements come out. Also, sometimes financial statement analysis does turn up new information, allowing people to fine-tune their expectations about future performance.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Ratios to measure different kinds of performance

- 1 Many financial performance measures are ratios of some return over some investment base. Why is such a concept of performance important in business?
- 2 With your answer to question 1 in mind, how might you measure the performance of each of the following investments owned by Kath Hart?
 - a Her \$1200 in a savings account at Solid Bank.
 - b Her investment of \$15 000 in a little consulting business she runs.
 - c Her sports car.

PRACTICE PROBLEM B

Answer questions using ratio analysis

Company A is 100 per cent owned by Dr A. The summary of Company A's financial statement information is as follows:

BALANCE SHEET AS AT 30 JUNE 2022

	\$
Total assets	<u>80 000</u>
Total liabilities	35 000
Total shareholders' equity	<u>45 000</u>
Total liabilities and shareholders' equity	<u>80 000</u>

INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2022

	\$	\$
Revenue		30 000
Expenses		
Interest	2 000	
General and operating expenses		19 000
Income tax (33%)	<u>3 000</u>	<u>24 000</u>
Net profit for the year		<u>6 000</u>
Note showing changes in retained profits for the year ended 30 June 2022		
Balance at beginning of the year		17 000
Net profit for the year		<u>6 000</u>
Balance at end of year		<u>23 000</u>

- 1 Calculate Company A's return on equity for the 2022 financial year.
- 2 Company A is considering borrowing \$50 000 for additional assets that will earn the company the same return on assets it has historically earned, according to the financial statement information. The cost of borrowing this money is 6 per cent. Should the company borrow the money? (Assume there are no alternative sources of funding.) Show all calculations.

- 3** Place yourself in the role of the local bank manager. Dr A has approached you to lend the company the required \$50 000 mentioned previously. (Detailed financial statement information has already been presented to you.) What additional information do you require, if any? What financial statement ratios, in addition to those calculated in previous parts of this problem, will be useful in aiding your decision? Do not calculate the ratios; just mention or describe them.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts and are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1** What is the purpose of financial statement analysis?
- 2** What is a common size statement? When is its use most appropriate?
- 3** What information might you gather about a company before you start calculating ratios?
- 4** What information sources are available to access the information that you identified above?
- 5** What ratios would you calculate to evaluate a company's profitability?
- 6** What ratios would you calculate to evaluate a company's activity or turnover?
- 7** What ratios would you calculate to evaluate a company's liquidity?
- 8** What ratios would you calculate to evaluate a company's financial structure?
- 9** Outline some of the main limitations of ratio analysis.
- 10** List the advantages and disadvantages you can see in using ratio analysis of financial statements as a way of evaluating management's performance. For the disadvantages, try to think of a way around each problem you identify.
- 11** Use non-technical language to answer the following:
 - a** What is financial leverage?
 - b** Why is such leverage risky?
- 12** In this chapter you have seen several types of ratios used to analyse financial statements and information.
 - a** Select two types of ratios and describe what information is conveyed by each.
 - b** Calculate ratios of these types for any company in which you are interested.
- 13** A senior member of a large public company's management team complained: 'Accountants' financial analyses don't seem very useful to me. The analyses don't reveal the business management factors that are important to my company's success. They are biased towards the past rather than the future. And, anyway, the share market is way ahead of the accountants in judging the company's performance.' Comment on the manager's complaint.
- 14** Why does changing depreciation method (i.e. changing the depreciation numbers in the financial statements) change the debt-to-equity ratio?
- 15** Briefly explain the differences in profit margin, asset turnover, accounts receivable turnover, inventory turnover and any other important differences between a retailer of fast-moving consumer goods (such as a food retailer), a manufacturer of consumer durables (such as whitegoods) and a manufacturer or distributor of tobacco products.
- 16** Explain how the following are possible:
 - a** Anh Limited has a high current ratio, but has difficulty paying its bills.
 - b** Bailey Limited has a high quick ratio, but has difficulty paying its bills.
 - c** Christine Limited has a low quick ratio, but no difficulty paying its bills.

PROBLEMS

PROBLEM 6.1

Calculation and interpretation of ratios

Data for White Star Limited is as follows:

WHITE STAR LIMITED
BALANCE SHEET AS AT 30 JUNE

	2022 \$m	2021 \$m
Current assets		
Cash	50	330
Receivables	540	310
Inventories	450	260
Total current assets	1 040	900
Noncurrent assets		
Property, plant and equipment	160	140
Total noncurrent assets	160	140
Total assets	1 200	1 040
Current liabilities		
Creditors and borrowings	630	510
Provisions	15	10
Total current liabilities	645	520
Noncurrent liabilities		
Creditors and borrowings	245	195
Provisions	10	15
Total noncurrent liabilities	255	210
Total liabilities	900	730
Net assets		
	300	310
Shareholders' equity		
Share capital (\$1 ordinary shares)	80	80
Reserves	35	35
Retained profits	185	195
Total shareholders' equity	300	310

Additional information:

Net operating profit after tax is \$25 million (2021: \$38 million).

- 1 Use the information provided to calculate for 2022 and 2021:
 - a return on equity
 - b earnings per share
 - c working capital
 - d current ratio
 - e quick ratio
 - f debt-to-equity ratio.
- 2 Identify two warning signals that could have negative implications with respect to the company's ability to generate cash flows to meet its future needs. In each case, explain why the signal you have identified could reflect a cash flow problem.

- 3 At the annual general meeting of White Star, the managing director, Ms Rose Dawson, made the following statement: 'Recently a number of articles in the financial press have questioned the financial position of our company. This criticism is totally unjustified. Net profit was \$25 million and total assets have increased by \$160 million. These results show that 2022 was a very successful year for White Star.' Comment on Ms Dawson's statement.

PROBLEM 6.2

Common size income statements

Prepare a common size income statement for Woolworths Limited for 2021 and 2020. You will need to use the data in the Consolidated Income Statement for Woolworths Limited. Comment on any significant changes you notice.

PROBLEM 6.3

Calculate ratios and comment on performance

ROR Ltd is an online business selling a variety of consumer products. At the end of 2021, its major shareholder instigated changes in management in order to improve performance. The financial statements for the years ending 30 June 2021 and 2022 are shown as follows.

INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE

	2022 \$000	2021 \$000
Sales	9 000	8 125
Less: COGS	<u>6 300</u>	<u>5 687</u>
Gross profit	2 700	2 438
Less: Expenses:		
Selling and administration	1 260	1 382
Interest charges	<u>400</u>	<u>256</u>
Profit before tax	1 040	800
Less: Tax	<u>140</u>	<u>150</u>
Net profit after tax	<u>900</u>	<u>650</u>

BALANCE SHEET AS AT 30 JUNE

	2022 \$000	2021 \$000
Current assets		
Inventory	2 400	750
Accounts receivable	<u>1 650</u>	<u>1 500</u>
Total current assets	<u>4 050</u>	<u>2 250</u>
Noncurrent assets (at net book value)		
Land and buildings	3 750	3 015
Machinery	<u>1 200</u>	<u>1 010</u>
Total assets	<u>9 000</u>	<u>6 275</u>
Current liabilities		
Bank overdraft	800	275
Accounts payable	1 700	600
Provision for employee entitlements	<u>200</u>	<u>250</u>
Total current liabilities	<u>2 700</u>	<u>1 125</u>

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Noncurrent liabilities		
Bonds	3 950	2 000
Shareholders' equity		
Share capital	1 000	1 000
Retained profits	<u>1 350</u>	<u>2 150</u>
Total shareholders' equity		
	<u>2 350</u>	<u>3 150</u>
Total shareholders' equity and liabilities		
	<u>9 000</u>	<u>6 275</u>

- 1 Calculate the following ratios:
 - a return on assets (using EBIT)
 - b asset turnover
 - c profit margin
 - d return on equity
 - e current ratio
 - f quick ratio
 - g inventory turnover
 - h days in inventory
 - i debtors turnover
 - j days in debtors
 - k debt-to-equity ratio
 - l interest coverage ratio.
- 2 Comment on the company's performance, indicating any changes you would suggest.

PROBLEM 6.4

Impact of transactions on ratios

Analyse the effect of each of the following transactions on the current ratio, quick ratio, debt-to-equity ratio and earnings per share. Assume that the current ratio, quick ratio and debt-to-equity ratio are each greater than 1, and that earnings per share is positive. Determine if each ratio increases, decreases or is unchanged. Consider each transaction independently of all the other transactions.

- 1 Repaid short-term loans payable of \$51 000.
- 2 Purchased inventory of \$48 000 on cash.
- 3 Made repayments of \$78 000 on the long-term loan.
- 4 Declared, but did not pay, a \$31 000 cash dividend on shares.
- 5 Borrowed an additional \$56 000 on the long-term loan.
- 6 Sold short-term investments recorded in the balance sheet at \$30 000 for \$28 000.
- 7 Issued 140 000 shares at the beginning of the financial period for cash of \$168 000.
- 8 Received \$6000 owing in cash from a customer.

PROBLEM 6.5

Impact of transactions on ratios

Leo Limited is consistently profitable. Leo's normal financial statement relationships are as follows:

Current ratio	2.6 times
Inventory turnover	3.2 times
Debt-to-assets ratio	0.7 times

Additional information:

- 1 Customers returned invoiced goods for which they had not paid.
- 2 Accounts payable were paid on the last day of the financial year.

- 3 Leo decided to revalue land it had purchased many years previously.
- 4 Leo declared and paid a cash dividend.
- 5 Early in the financial year, Leo increased the selling price of one of its products that had a demand in excess of capacity. The number of units sold last year and this year was identical.

For each of the listed transactions or events, determine the effect on each of the ratios in the table (increase, decrease, no effect).

PROBLEM 6.6

Impact of transactions on ratios

In February 2021, newspaper reports referred to a retailer's balance sheet including intangible assets such as brand names and goodwill of almost \$1 billion as being much higher than market value. If the value of these intangibles was written down:

- 1 What would be the effect on net profit?
- 2 What would be the effect on total assets?
- 3 What key ratios would be affected?

PROBLEM 6.7

Examine components of the return on assets ratio

Information taken from the recent annual reports of two retail companies appears as follows (amounts in millions). One of these companies is a discount chain store and the other is a specialty retailer of fashion clothes.

	Company X \$m	Company Y \$m
Sales	4 069	4 130
Interest expense	42	18
Net profit before tax	245	168
Total assets	2 061	1 149

Which company is likely to be the discount chain store? Briefly explain your answer.

PROBLEM 6.8

Use of ratios

Comparative balance sheets and income statements for E-Worths Limited are given as follows.

E-WORTHS LIMITED BALANCE SHEETS AS AT 30 JUNE

	2022 \$000	2021 \$000
Current assets		
Cash	41	43
Receivables	79	74
Inventories	210	203
Other	4	5
Total current assets	334	325

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Noncurrent assets		
Property, plant and equipment	160	141
Total assets		
	<u>494</u>	<u>466</u>
Current liabilities		
Creditors and borrowings	77	64
Provisions	40	30
Total current liabilities		
	<u>117</u>	<u>94</u>
Noncurrent liabilities		
Loan	140	140
Total liabilities		
	<u>257</u>	<u>234</u>
Net assets		
	<u>237</u>	<u>232</u>
Shareholders' equity		
Share capital	90	90
Reserves	115	115
Retained profits	32	27
Total shareholders' equity		
	<u>237</u>	<u>232</u>

**E-WORTHS LIMITED
INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE**

	2022	2021
	\$000	\$000
Sales	790	773
Less: COGS	<u>(494)</u>	<u>(456)</u>
Gross profit	<u>296</u>	<u>317</u>
Less: Administrative and selling expenses	<u>(220)</u>	<u>(241)</u>
Less: Interest expense	<u>(15)</u>	<u>(14)</u>
Operating profit before income tax	61	62
Income tax expense	<u>(30)</u>	<u>(32)</u>
Operating profit after income tax	<u>31</u>	<u>30</u>

During the year ended 30 June 2022, E-Worts Limited declared and paid dividends of \$26 000. On 30 June 2022, the market price per share was \$2.70 and 90 000 shares were on issue.

- 1 Assume you are a banker evaluating a request for a short-term loan from E-Worts Limited. The company would like to borrow on 1 July 2022 and repay on 31 December 2022. Name and calculate three 2022 ratios that you would use to determine the likelihood that the company will be able to make the loan repayment when it falls due.
- 2 Assume you are a potential investor evaluating a share purchase in E-Worts Limited. You are looking for an investment that will provide a steady stream of dividend income over the years. Name and calculate three 2022 ratios that you would use to make your decision about whether to buy shares in E-Worts Limited.
- 3 List and briefly explain three disadvantages of basing your decisions solely on ratio analysis.
- 4 List other tools that analysts and other users of financial statements might use to overcome the limitations associated with the use of ratios alone.

PROBLEM 6.9

Explain reasons for changes in ratios

The following is a summary of the information in the financial statements of RDK Ltd for the years 2021 and 2022.

	2022 \$000	2021 \$000
Current assets	50	100
Noncurrent assets	<u>350</u>	<u>200</u>
Total assets	<u>400</u>	<u>300</u>
Current liabilities	50	50
Noncurrent liabilities	210	150
Shareholders' equity	<u>140</u>	<u>100</u>
Total liabilities and shareholders' equity	<u>400</u>	<u>300</u>
Sales	800	750
Expenses	<u>752</u>	<u>720</u>
Net profit (before interest and tax)	<u>48</u>	<u>30</u>
Interest	13	10
Tax payable	<u>14</u>	<u>8</u>
Net profit after tax	<u>21</u>	<u>12</u>

The manager of RDK Ltd has given the following information relating to the firm:

	2022 %	2021 %
Return on assets (using EBIT)	12	10
Current ratio	100	200
Quick asset ratio	100	100
Debt-to-assets ratio	65	66.7
During 2022, land that cost \$50 000 was revalued to \$90 000		

- 1 Suggest possible reasons for the change in ROA.
- 2 Comment on the changes in liquidity during the period.
- 3 What changes have taken place in the firm's long-term financial position during the period?
- 4 Why does a great deal of care need to be taken in the use and interpretation of financial ratios?

PROBLEM 6.10

Effect of transactions on ROA and ROE

State whether the following transactions would affect ROA (using EBIT; presently 7 per cent), ROE (presently 11 per cent), both or neither:

- 1 issue bonus shares
- 2 asset revaluation upwards
- 3 increase in interest expense
- 4 issue ordinary shares to pay off a loan
- 5 increase in depreciation expenses
- 6 purchase new equipment for cash (ignore depreciation effects)
- 7 increase the provision for long service leave
- 8 purchase equipment on credit (ignore depreciation).

PROBLEM 6.11

Effect of transactions on ratios

Fantastic Foods Ltd completed a series of transactions, which are listed below. Before the transactions, both the current and quick asset ratios were greater than 1. The cash account has a debit balance.

Indicate the effect of each of the transactions listed on the ratio listed opposite it. For each transaction, state whether the ratio would increase, decrease or have no effect. Treat each transaction independently.

Transaction	Ratio
1 Redeemed debentures by issuing ordinary shares	Return on equity
2 Purchased inventory on credit	Quick ratio
3 Sold inventory for cash with a 40 per cent mark-up on cost	Current ratio
4 Issued additional ordinary shares for cash	Debt-to-equity ratio
5 Collected an account receivable balance	Debtors turnover
6 Paid accounts payable	Return on assets
7 Paid accounts payable	Profit margin

PROBLEM 6.12

Effect of transactions on ratios

Indicate the effects (increase, decrease or no effect) of each of the following independent transactions on:

- 1 the rate of return on shareholders' equity
- 2 the current ratio
- 3 the debt-to-equity ratio.

State any necessary assumptions.

- a Inventory costing \$410 000 is purchased on account.
- b Inventory costing \$240 000 is sold on account for \$300 000.
- c Collections from customers on accounts receivable total \$100 000.
- d Payments to suppliers on accounts payable total \$160 000.
- e A machine costing \$80 000, on which \$60 000 of depreciation was charged, is sold for \$20 000.
- f Dividends of \$80 000 are declared. The dividends will be paid during the next accounting period.
- g Ordinary shares are issued for \$175 000.
- h A machine costing \$60 000 is acquired. Cash of \$10 000 is given, and a note for \$50 000 payable five years from now is signed for the balance of purchase price.

PROBLEM 6.13

Effect of transactions on ratios

Management is interested in what would have been the impact on net profit before tax for the year ended 30 June 2022 and cash flow from operations for the year ended 30 June 2022 and the current ratio at 30 June 2022 (presently 2:1) if each of the following transactions had occurred in June 2022. To answer this question for each of the following eight transactions, state 'increase', 'decrease' or 'N/E' (no effect).

- 1 Purchase inventory on credit.
- 2 Sell goods on credit with 50 per cent mark-up on cost.
- 3 Recognise accrued revenue of \$18 000.
- 4 Capitalise research and development costs that had been treated as an expense.
- 5 Sell equipment with a book value of \$50 000 (cost \$180 000) for \$160 000.
- 6 Increase the allowance for doubtful debts by \$20 000.
- 7 Receive a deposit of \$10 000 on a job that will be commenced in the next financial year.
- 8 Depreciate equipment over a shorter period.

PROBLEM 6.14

Accounting policy choice

Swaffle Ltd, in business for only a year, has capitalised \$50 000 in software development costs. The controller argues that the costs should be expensed instead. Assume that this change in policy will influence the company's tax liability. The company has a marginal tax rate of 30 per cent of profits before tax. How would the controller's proposal impact on the following ratios?

- 1 Return on equity (presently 20 per cent).
- 2 Current ratio (presently 2:1).

PROBLEM 6.15

Financial statement analysis

The following ratios describe the performance of Financial Insights Ltd for 2021 and 2022:

Ratio	Value 2021	Value 2022
Debt-to-equity ratio	1.36 times	1.86 times
Inventory turnover	6.70 times	8.00 times
Quick ratio	0.91 times	0.70 times
Gross margin	63.2%	65.0%
Interest coverage	2.8 times	2.00 times
Current ratio	1.89 times	1.29 times
Receivables turnover	7.3 times	7.5 times
Days inventory on hand	54.5 days	45.6 days
Return on assets	13.24%	14.40%
Return on equity	38.43%	34.97%

- 1 Classify these ratios into those relating to:
 - a profitability
 - b activity (turnover)
 - c liquidity/solvency
 - d financial structure.
- 2 Based on the ratio values supplied, comment on the company's performance in 2022 in each of the following categories:
 - a profitability
 - b activity (turnover)
 - c liquidity/solvency
 - d financial structure.In addition, note the limitations of conclusions drawn from the provided information, and indicate what other information would be helpful in assessing the company's performance.
- 3 Explain the following:
 - a Why do the return on assets and return on equity ratios differ?
 - b Why would the return on assets ratio be calculated if you had already calculated the return on equity ratio? (You may find it helpful to consider how these ratios are calculated.)
- 4 Consider the inventory turnover ratio and the days inventory on hand ratio:
 - a What information do these ratios provide?
 - b From the viewpoint of management, what are the limitations relating to these ratios?

- 5 During 2022, the chief financial officer (CFO) of Financial Insights Ltd employed an independent valuer to assess the current value of the land and buildings owned by the company. The valuer had advised the CFO that the value of the land and buildings had increased by \$50 000 (10 per cent). Assume that this increased value is reflected in the ratios provided. Explain how this accounting policy choice would have affected each of the ratios.

PROBLEM 6.16

Financial statement analysis

The inventory turnover of Aurora Ltd was 3.79 in 2021 and the days inventory on hand 2022 was 140.6.

- 1 Explain the purpose of calculating the inventory turnover ratio.
- 2 Explain what an inventory turnover ratio of 3.79 means.
- 3 Is the 2022 inventory turnover ratio for Aurora Ltd an improvement on the 2021 inventory turnover ratio?
- 4 What factors should management consider when interpreting these figures?

PROBLEM 6.17

Use financial statement analysis to evaluate a general manager's claims

The general manager of Titanium Manufacturing Ltd, a medium-sized manufacturing company, wants to renew the company's operating loan. In discussions with the bank's lending officer, the general manager says: 'As the accompanying financial statements show, our working capital position has improved during the past year, and we have managed to reduce operating expenses significantly.'

The partial financial statements are shown below.

TITANIUM MANUFACTURING LTD
PARTIAL BALANCE SHEET AS AT 31 DECEMBER 2022 AND 2021

	2022	2021
	\$	\$
Current assets		
Cash	50 000	200 000
Accounts receivable	250 000	100 000
Inventories	<u>500 000</u>	<u>400 000</u>
Total current assets	<u>800 000</u>	<u>700 000</u>
Current liabilities		
Accounts payable	250 000	200 000
Operating loan	<u>100 000</u>	<u>100 000</u>
Total current liabilities	<u>350 000</u>	<u>300 000</u>

TITANIUM MANUFACTURING LTD
INCOME STATEMENT FOR THE YEARS ENDED 31 DECEMBER 2022 AND 2021

	2022	2021
	\$	\$
Sales		
Sales	1 200 000	1 500 000
Less COGS	<u>780 000</u>	<u>900 000</u>
Gross profit	<u>420 000</u>	<u>600 000</u>
Operating expenses	<u>350 000</u>	<u>400 000</u>
Profit before taxes	70 000	200 000
Income taxes	<u>14 000</u>	<u>40 000</u>
Net profit	<u>56 000</u>	<u>160 000</u>

- 1 Evaluate the general manager's comments. Incorporate appropriate ratio analysis in your discussion.
- 2 What additional financial information (if any) would you request from the general manager? Why?

PROBLEM 6.18

Performance evaluation using ratios

International Business Technology (IBT) has enjoyed modest success in penetrating the personal computer market since it began operations a few years ago. A new computer line introduced recently has been received well by the general public. However, the general manager, who is well versed in electronics but not in accounting, is worried about the future of the company.

IBT's operating loan is at its limit and more cash is needed to continue operations. The bank wants more information before it extends the company's credit limit. The general manager has asked you, as financial controller, to do a preliminary evaluation of the company's performance, using appropriate financial statement analysis, and to recommend possible courses of action for the company. The general manager particularly wants to know how the company can obtain additional cash. Use the summary financial information shown to conduct your evaluation and make your recommendations.

INTERNATIONAL BUSINESS TECHNOLOGY
BALANCE SHEET AS AT 31 DECEMBER

	2022 \$000	2021 \$000	2020 \$000
Current assets			
Cash	19	24	50
Marketable securities	37	37	37
Accounts receivable (trade)	544	420	257
Inventory	833	503	361
Total current assets	1 433	984	705
Noncurrent assets			
Land	200	200	100
Buildings	350	350	200
Equipment	950	950	700
	1 500	1 500	1 000
Less: Accumulated depreciation: buildings and equipment	(447)	(372)	(288)
Net noncurrent assets	1 053	1 128	712
Total assets	2 486	2 112	1 417
Current liabilities			
Bank loan	825	570	–
Accounts payable (trade)	300	215	144
Other liabilities	82	80	75
Income tax payable	48	52	50
Total current liabilities	1 255	917	269
Shareholders' equity			
Share capital	1 000	1 000	1 000
Retained profits	231	195	148
Total shareholders' equity	1 231	1 195	1 148
Total liabilities and shareholders' equity	2 486	2 112	1 417

INTERNATIONAL BUSINESS TECHNOLOGY
INCOME STATEMENT FOR THE YEARS ENDED 31 DECEMBER

	2022 \$000	2021 \$000	2020 \$000
Sales	3 200	2 800	2 340
COGS	<u>2 500</u>	<u>2 150</u>	<u>1 800</u>
Gross profit	700	650	540
Expenses	<u>584</u>	<u>533</u>	<u>428</u>
Net profit	116	117	112

Other related information included in total expenses:

	2022 \$000	2021 \$000	2020 \$000
Interest expense	89	61	–
Income tax expense	95	102	97

INTERNATIONAL BUSINESS TECHNOLOGY
NOTE SHOWING CHANGES IN RETAINED PROFITS FOR THE YEARS ENDED 31 DECEMBER

	2022 \$000	2021 \$000	2020 \$000
Opening retained profits	195	148	96
Add: Net profit	116	117	112
Less: Dividends	<u>80</u>	<u>70</u>	<u>60</u>
Closing retained profits	<u>231</u>	<u>195</u>	<u>148</u>

PROBLEM 6.19

Inventory valuation, depreciation and ratios

Jeans F' All and Jeans 'R' Us are very similar companies in size and operation. Jeans F' All uses FIFO and the straight-line depreciation method and Jeans 'R' Us uses LIFO and diminishing value depreciation. Identify which company will report the higher number for each of the following ratios:

- 1 current ratio
- 2 inventory turnover
- 3 profit margin
- 4 return on assets.

State any assumptions you need to make in answering this question.

PROBLEM 6.20

Industry-specific ratios

Available seat kilometres is a common measure of productivity in the airline industry. Cost to income ratios are a key measure of comparison across the banking industry. Sales per staff member of square metre of available space are used to compare performance in retail. Patient to staff ratios are included in state government enterprise bargaining agreements as part of conditions of employment for nurses.

- 1 Choose an industry and research (or design) some ratios which could be used to measure and compare performance in that industry.
- 2 Why do some industries use ratios outside those we have covered in this chapter to measure and assess organisational performance?

CASES

CASE 6A

Financial statement analysis

Brewing Behaviour is a large Australian beer brewing company. It sells to wholesalers and commercial outlets, which then deal directly with Brewing Behaviour's target customers. Brewing Behaviour's iconic beers are also exported to New Zealand, the United Kingdom and the United States. Brewing Behaviour manufactures in various offshore locations and, as a result, a significant proportion of Brewing Behaviour's costs of production are incurred in US dollars.

**BREWING BEHAVIOUR LIMITED
INCOME STATEMENT FOR YEAR ENDED 30 JUNE 2022**

	Consolidated	
	2022 \$000	2021 \$000
Revenue from sales of goods	36 480	47 259
Other revenue	<u>6 534</u>	<u>12 601</u>
Total revenue	43 014	59 860
COGS	(23 656)	(38 577)
Other expenses from ordinary activities	<u>(5 483)</u>	<u>(8 718)</u>
Earnings before borrowing costs, tax, depreciation and amortisation	13 875	12 565
Depreciation and amortisation expenses	<u>(2 890)</u>	<u>(3 415)</u>
Earnings before borrowing costs and tax	10 985	9 150
Borrowing costs	<u>(3 255)</u>	<u>(3 165)</u>
Profit from ordinary activities before income tax	7 730	5 985
Income tax benefit/(expense) relating to ordinary activities	<u>(1 305)</u>	<u>(2 233)</u>
Profit from ordinary activities after related income tax	<u>6 425</u>	<u>3 752</u>
Net profit attributable to members of the parent entity	<u>6 425</u>	<u>3 752</u>
Basic earnings per share (cents)	8.4	6.8
Diluted earnings per share (cents)	8.0	6.7

**BREWING BEHAVIOUR LIMITED
BALANCE SHEET AS AT 30 JUNE 2022**

	Consolidated	
	Note	2022 \$000
		2021 \$000
Current assets		
Cash		3 804
Receivables	1	13 758
Inventories	2	61 467
Other assets		<u>535</u>
Total current assets		79 564
		64 530

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Noncurrent assets		
Other financial assets	2 800	6 143
Property, plant and equipment	3	79 176
Intangible assets		54 627
Other assets	494	—
Total noncurrent assets	<u>137 097</u>	<u>133 992</u>
Total assets	<u>216 661</u>	<u>198 522</u>
Current liabilities		
Payables	28 042	26 513
Interest-bearing liabilities	23 846	31 608
Current tax liabilities	73	1 899
Provisions	1 828	2 015
Total current liabilities	<u>53 789</u>	<u>62 035</u>
Noncurrent liabilities		
Interest-bearing liabilities	80 898	84 300
Deferred tax liabilities	3 720	623
Provisions	474	1 245
Total noncurrent liabilities	<u>85 092</u>	<u>86 168</u>
Total liabilities	<u>138 881</u>	<u>148 203</u>
Net assets	<u>77 780</u>	<u>50 319</u>
Equity		
Contributed equity	4	60 950
Reserves		3 932
Retained profits		12 898
Total equity	<u>77 780</u>	<u>50 319</u>

The balance sheets are to be read in conjunction with the notes to the financial statements.

**BREWING BEHAVIOUR LIMITED
CASH FLOW STATEMENT**

	Consolidated	
	2022	2021
	\$000	\$000
Cash flows from operating activities		
Cash receipts in the course of operations	89 336	53 265
Cash payments in the course of operations	(89 731)	(49 372)
Interest received	24	23
Borrowing costs paid	(6 418)	(2 712)
Income taxes paid	(58)	(1 239)
Net cash used by operating activities	<u>(6 847)</u>	<u>(35)</u>
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Cash flows from investing activities		
Proceeds on disposal of noncurrent assets	11 116	5 714
Payments for controlled entities (net of cash acquired)	(949)	(25 528)
Payments for deferred acquisition cost	(494)	–
Payments for property, plant and equipment	(4 676)	(4 014)
Payments for acquisition of intangibles	<u>(78)</u>	<u>(104)</u>
Net cash from/(used in) investing activities	<u>4 919</u>	<u>(23 932)</u>
Cash flows from financing activities		
Proceeds from issue of shares	20 011	3
Payments for share issue costs	(1 500)	–
Proceeds from/(repayments of) borrowings	(4 700)	29 710
Finance lease and hire purchase payments	(4 454)	(1 898)
Dividends paid	<u>(2 838)</u>	<u>(2 392)</u>
Net cash from financing activities	<u>6 519</u>	<u>25 423</u>
Net increase/(decrease) in cash held	<u>4 591</u>	<u>1 456</u>
Cash at the beginning of the financial year	<u>73</u>	<u>(1 346)</u>
Effects of exchange rate fluctuations on the balances of cash held in foreign currencies	<u>(860)</u>	<u>(37)</u>
Cash at the end of the financial year	<u>3 804</u>	<u>73</u>

BREWING BEHAVIOUR LIMITED
SELECTED NOTES TO THE ACCOUNTS

	2022 \$000	2021 \$000	2020 \$000
1. RECEIVABLES			
Current			
Trade debtors	27 432	23 119	5 345
Less: Allowance for doubtful trade debtors	<u>(13 829)</u>	<u>(1 135)</u>	<u>(222)</u>
	13 603	21 984	5 123
Other debtors	<u>155</u>	<u>123</u>	<u>102</u>
	<u>13 758</u>	<u>22 107</u>	<u>5 225</u>
2. INVENTORIES			
Current			
Bulk beer, at cost	50 258	28 027	13 114
Packaged beer, at cost	9 324	12 627	4 815
Packaging materials, at cost	1 815	931	454
Sundry merchandise, at cost	<u>70</u>	<u>74</u>	<u>53</u>
	<u>61 467</u>	<u>41 659</u>	<u>18 436</u>

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	2022	2021
3. PROPERTY, PLANT AND EQUIPMENT		
Freehold land		
– At fair value	<u>8 115</u>	<u>4 470</u>
Buildings		
– At fair value	36 511	21 383
Less: Accumulated depreciation	<u>(3 434)</u>	<u>(443)</u>
	<u>33 077</u>	<u>20 940</u>
Plant and equipment, at cost	36 153	35 362
Less: Accumulated depreciation	<u>(8 232)</u>	<u>(5 909)</u>
	<u>27 921</u>	<u>29 453</u>
Leased plant and equipment	8 967	10 193
Less: Accumulated amortisation	<u>(900)</u>	<u>(472)</u>
	<u>8 067</u>	<u>9 721</u>
Capital work-in-progress	<u>1 996</u>	<u>2 036</u>
Total property, plant and equipment	<u>79 176</u>	<u>66 620</u>
Net book value	<u>79 176</u>	<u>66 620</u>
	2022	2021
4. CONTRIBUTED EQUITY		
Number of shares	<u>92 000 000</u>	<u>55 000 000</u>
37 000 000 shares were issued on 1 December 2021.		
The market price of shares was \$0.95 on 30 June 2022 (\$0.98 on 30 June 2021).		
5. DIVIDENDS DECLARED		
During the year, dividends of 3 cents per share were declared (2021: 4 cents per share)		

- Calculate ratios for Brewing Behaviour Limited for 2021 and 2022, using Exhibit 6.1 as a guide. Be sure to include appropriate units.
- Comment on the financial performance of Brewing Behaviour in 2022 (relative to 2021) with reference to the previous ratio calculations. You may wish to further research the performance of the brewing industry to enhance your answer.

CASE 6B

Assessing public sector performance

Traditional measures of assessing financial performance and financial position in the private sector are often not relevant for assessing the performance of public sector entities. In the private sector, operating performance is concerned with profitability, and financial position is concerned with liquidity, solvency and asset management. In the public sector, some of these issues are not always relevant:

- Profit is not an objective of many budget-dependent departments, whose aim is to deliver goods or services consistent with government policy. As a result, performance needs to be measured by a wider range of criteria.
- Information about financial structure is less relevant, because the ongoing viability of budget-dependent bodies is determined by the government (via the will of Parliament).
- Liquidity issues become less important, because creditors know they have a claim against the government as a whole.
- Liquidity and solvency become less important from a lending perspective, because the agencies generally do not have the ability to borrow in their own right.

Given the differences, it has become necessary for public sector entities to develop new or modified ratios compared to those used in the private sector. Develop some ratios which could be used to evaluate

performance in the public sector. (You may wish to consider the relationship between costs, physical output and changes in efficiency.)

HOW'S YOUR UNDERSTANDING? SOLUTIONS

- 6A** Hint: you should assess Transport's performance by examining changes for each group of ratios as a basis for forming your overall conclusion. Check your answer with the section titled 'Concluding comments about the ratios calculated'.
- 6B** The company's liquidity seemed to improve slightly at the end of 2022, as demonstrated by increases in the current ratio, the quick ratio and the interest coverage ratio.
- 6C** Up \$40 000; up from 1.12 to 1.35; none immediately.
- 6D** Down by $\$130\ 000 \times (1 - 0.35)$, or \$84 500; no effect; no effect because no current assets or liabilities are involved.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1 Such a concept of performance relates the return to the investment required to earn it, so enabling the relative return to be calculated. This is important because returns do require investment. People usually don't make investments without expecting a return, and the sizes of each have to be related to each other in order to evaluate the quality of the result. A \$1000 return would be great if the investment required was \$2000 (a ratio of 50 per cent) but not so great if the investment were \$200 000 (only 0.5 per cent).
- 2
 - a The interest earned could be compared to the \$1200 required to earn it.
 - b The consulting earnings could be compared to the \$15 000 invested to earn them.
 - c This is harder because the returns are probably non-financial, such as the fun of driving a sports car, and so are not readily comparable to the car's cost – however, this sort of ratio is implicit in many buying decisions, in which we ask ourselves if the benefits we will obtain are worth the cost, and we may well choose a cheaper car if the feeling of wind in our hair isn't all that important relative to what we have to pay for a convertible.

PRACTICE PROBLEM B

- 1 Return on equity = $\$6000 \div \$45\ 000 = 0.133$
- 2 If using the alternative ROA ratio, the assets financed would earn 13.75 per cent $[(6000 + 2000 + 3000)/80\ 000]$. The cost of the money borrowed is 6 per cent. Therefore, leverage is positive (7.75 per cent) and the company should go ahead. This will, however, increase the company's risk, because the interest has to be paid and return on assets could decline below that rate. If using OPAT to calculate ROA, the result is 7.5% ($6000/80\ 000$), again leverage will be positive.
- 3 Some possible additional information and ratios (more can be imagined, so this is an outline only):
 - terms and security of present debts
 - quality of management (especially Dr A)
 - industry and competition prospects
 - personal guarantees Dr A might offer
 - interest coverage ratio
 - accounts receivable collection and inventory turnover
 - profit margin
 - income tax information.

7

Reporting and managing cash flows



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** explain why cash is considered so important (7.1)
- LO2** outline the contents of a statement of cash flows (7.2)
- LO3** distinguish between cash flow from operations, cash flow from investing and cash flow from financing (7.2)
- LO4** interpret a statement of cash flows (7.3)
- LO5** explain the nature and importance of working capital management (7.4)
- LO6** calculate the cash flow cycle and develop actions to control the cycle (7.5)
- LO7** explain the need for cash forecasting and cash budgets (7.6, 7.7)
- LO8** prepare a cash budget (7.7)
- LO9** prepare cash flow analysis for capital expenditures and calculate NPV (7.8)
- LO10** use Excel to calculate NPV (7.9)

CHAPTER OVERVIEW

Organisations cannot survive without an adequate cash flow. Consequently, users of financial reports need to be informed of how cash has been managed.

A statement of cash flows provides relevant information to users about the cash inflows and cash outflows of an entity during a financial year. Evaluating the entity's cash management is so important that the result of this analysis, called the statement of cash flows, is required by accounting standards as part of the set of financial statements. Understanding the statement of cash flows is important for all users of accounting reports in gaining a better insight into the health of a company.

Internally within each organisation there is a need for liquidity planning both long and short run. The aim of liquidity planning is to ensure that an organisation has the ability to pay its debts when they fall due. This is important because without adequate liquidity, the organisation may not have sufficient financial resources to carry out short-range plans or remain solvent in the longer term. Managers need to understand their cash flow cycle which includes an understanding of their financing needs. Processes involved in liquidity planning include cash forecasting, cash budgets and examining liquidity ratios.

7.1 The purpose of cash flow analysis

Performance in generating additional wealth for the entity, as measured by accrual profit, is very important to managers, investors, tax authorities and many others. But the world is a complex place, and there is more to performance than generating accrual profit. An additional, important aspect of performance is managing the inflow and outflow of cash so that the entity has enough cash to pay its bills, finance its growth and keep its borrowing under control. This will not be a surprise to you: everyone has to worry about cash flow, about how much cash is available, and where additional cash will come from.

LO1

No business entity can survive without cash. (Nor can other organisations, such as governments – who need to raise enough cash from taxes and other charges to meet their financial and social obligations.) Employees, suppliers and tax authorities must be paid, loans must be repaid and assets must be kept up to date. Many new and established companies have had positive net profit figures, yet have still run out of cash and gone bankrupt. Thus, it is important for present and potential investors and creditors to have information about a firm's cash inflows and outflows and its resulting cash position. Can the firm meet all its debts and obligations as they fall due (an ability commonly referred to as solvency)? Does it have enough cash and short-term assets now to cover its immediate debts and obligations (a condition commonly called liquidity)? Entities can get into difficulty by not managing their cash properly.

Conversely, some entities seem to have rather a lot of cash, raising questions about what is being done with the cash. Keeping a large supply of cash lying around idle is not the best way to earn a return for owners. The cash should be put to work by making investments, improving the buildings and equipment, attracting new customers or paying off interest-bearing debt.

The cash situation can be obscured somewhat by accrual accounting. Let's take an extreme example. Suppose a company has revenue of \$100 000 but it is all on credit, and none of the customers has paid yet. In order to generate the revenue, the company has expenses of \$70 000, and they all have to be paid soon. The accrual profit will be the revenue minus the expenses, or \$30 000. Looks good: a 30 per cent return on revenue. But if the company has no cash to pay its expenses it could be in trouble; instead, it may have \$100 000 of accounts receivable, which cannot be used to pay expenses unless the customers pay or some other way is found to get cash for the receivables. The company is likely to want to borrow money from a bank or other lender to provide it with the needed cash. How much should it borrow? Should it pressure the customers for payment? Should it ask its creditors for more time to pay the \$70 000 in expenses? How will it be able to afford a planned new machine to keep its product quality competitive? All these questions concern the management of cash, and they are not easy to answer based on the accrual accounting profit.

To assist with such questions, the statement of cash flows provides information about a firm's generation and use of cash and highly liquid short-term assets, and, therefore, assists in evaluating the firm's financial viability. The analysis of cash flows provides different information from the summary of accrual-based performance in the income statement.

Numerous times earlier in the book it was shown that accrual profit is not the same as cash profit. If you are not sure why, go back to the early part of Chapter 4 for examples. Some revenues and expenses do not involve an inflow or outflow of cash in the present period. The example of uncollected revenue has already been mentioned. Depreciation is another example here: the cash flow happened close to when the asset was acquired, so the depreciation expense does not involve any current cash flow.

The purpose of the analysis of cash flow is, therefore, twofold:

- to produce a measure of performance that is based on day-to-day cash flow: cash generated by ordinary business activities, instead of accrual accounting. This measure, which the statement of cash flows calls cash flow from operations, does not imply that accrual profit is invalid; rather, it provides a different perspective on performance and therefore enhances the information for users.
- to incorporate other non-operating cash inflows and outflows, such as from investing in new assets, selling old ones, borrowing or repaying debts, obtaining new capital from shareholders or paying dividends to shareholders. By including these non-operating cash flows, the statement of cash flows can provide a complete description of how the firm's cash was managed during the period. It can tell the full story of why the firm has more, or less, cash at the end of the period than it had at the beginning.

With all this information, the user can evaluate management's strategy for managing cash and make a better judgement of the company's liquidity, solvency, risk and opportunities than could be made just from the balance sheet and income statement.

7.2 Overview of the statement of cash flows

LO2 Classification of cash flow transactions

LO3 Accounting standards suggest that for profit-seeking organisations it would be normal to divide cash flow transactions into operating activities, investing activities and financing activities.

- *Operating activities* are those activities that relate to the provision of goods and services.
- *Investing activities* are those activities that relate to the acquisition and disposal of noncurrent assets, including property, plant, equipment and other productive assets, and investments such as shares in other companies.
- *Financing activities* are those activities that relate to changing the size and composition of the financial structure of the entity, including equity, and borrowings.

Exhibit 7.1 provides the classification of typical cash inflows and outflows. Note that accounting standards do allow some variation on the classifications under some circumstances but this does give you the basics.

EXHIBIT 7.1

CLASSIFICATION OF CASH FLOW TRANSACTIONS OPERATING, INVESTING AND FINANCING

Operating receipts from:	Investing receipts from:	Financing receipts from:
Sale of goods and services	Sale of property, plant and equipment	Issue of shares
Interest or dividends received	Sale of shares and businesses held as investments	Borrowings
Payments for:	Payments for:	Payments for:
Supplies	Acquisition of property, plant and equipment	Dividend distributions
Wages of employees	Acquisition of shares and businesses for investment purposes	Share buybacks
Taxes to governments		Repayment of borrowings
Interest to lenders		



HOW'S YOUR UNDERSTANDING?

7A Given the following information, what is cash flow from operations?

	\$000
Cash from accounts receivable	50
Cash sales	30
Cash from issue of shares	70
Payments to accounts payable	20
Payments for wages	15
Purchase of plant	55
Payment of taxes	35

Format of the statement of cash flows

The statement of cash flows, like the other statements, has a standard format (see Exhibit 7.2). It is useful to know, because variations from that format may be a signal of special circumstances or problems.

EXHIBIT 7.2	STATEMENT OF CASH FLOWS STANDARD FORMAT
<i>Operating activities</i>	
	Cash generated by operations: day-to-day cash receipts and payments related to the activities that generate profit.
<i>Investing activities</i>	
	Cash used to invest in additional noncurrent assets, including investments in other companies, minus any cash proceeds obtained by disposing of such assets.
<i>Financing activities</i>	
	Cash obtained from borrowing and from issuing share capital, minus borrowing repaid or share buyback. Any cash transactions for dividends and share issue costs.
<i>Change in cash (and equivalents) for the period</i>	
	Net sum of the above three categories.
<i>Cash (and equivalents) at the beginning of the period</i>	
	Brought forward from last period's statement of cash flows and balance sheet.
<i>Cash (and equivalents) at the end of the period</i>	
	Equals what is shown on the balance sheet at the end of the period.

Some important features of this format are:

- 1 The statement of cash flows covers the same period as the income statement.
- 2 Cash includes some equivalents: very liquid near-cash assets that can be turned into cash without any risk of loss, such as demand bank deposits and certificates with a maturity of three months or less.
- 3 While the format is traditional, recent changes to International Financial Reporting Standards do allow some alternative classifications. For example, interest paid is allowed to be included under financing activities.
- 4 In some cases, cash may include temporary negative bank balances (overdrafts) if they are just a result of cash management activity and the bank balances regularly vary from positive to negative.
- 5 The statement of cash flows follows some rules to ensure that its focus stays on cash. For example, if a dividend has been declared but not all paid, only the paid part is included in the statement of cash flows' financing activities section. Another example: if there is an account payable for a noncurrent asset, the investing activities figure shows only the amount paid so far.
- 6 Following on from point 5, any asset acquisitions, borrowing or share issues that are done without cash – such as acquiring land in return for shares – are excluded from the statement of cash flows. (They would be disclosed in a note to the statement of cash flows.)
- 7 Any of the numbers in the statement of cash flows can be positive or negative, according to what happened during the period. For example, a really bad year can result in cash from operations being negative, in which case it might be described as cash used in operations! As another example, a company undergoing significant restructuring could have more cash coming in from selling off assets than going out to buy more, so its investing section could be a positive cash inflow instead of the usual cash outflow.
- 8 Deriving the cash flow from day-to-day operations is one of the main reasons for having the cash flow analysis. The cash from operations figure takes away accrual accounting's many adjustments, which are

very important in measuring profit but obscure the cash effects. To emphasise this, statements of cash flows in many countries begin with the net profit figure, then explicitly remove the effects of changes in accounts receivable, accounts payable, depreciation and other accruals. This is called the indirect method of deriving cash from operations, as distinct from the direct method of just listing operating cash receipts and deducting operating cash payments (also called disbursements). In Australia, the direct method is used with a note showing the indirect method.

Figure 7.1 compares the two methods, both of which end up with the same figure for cash from operations.

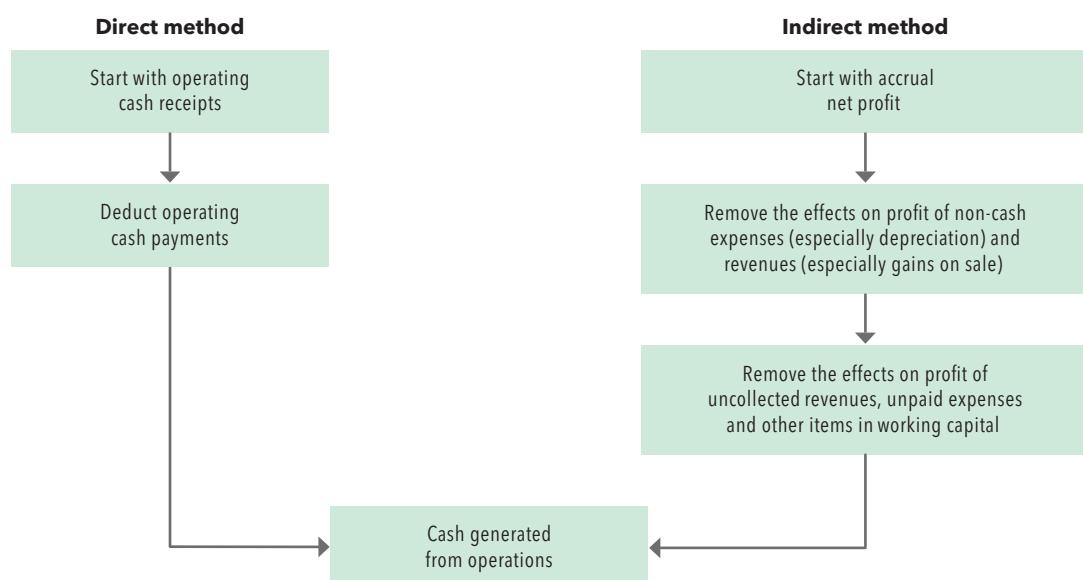


FIGURE 7.1 Comparing the direct and indirect methods of deriving cash from operations



HOW'S YOUR UNDERSTANDING?

7B Given the following information, what is cash flow from operations?

- cash sales, \$100 000
- credit sales, \$250 000
- cash received from accounts receivable, \$170 000
- borrowings from the bank, \$80 000
- issue of shares, \$150 000

Direct method of reporting cash flow from operations

The direct method of cash flow analysis reports gross cash inflows and gross cash outflows. An example of using the direct method is shown for XYZ Limited in Exhibit 7.3.

The information for the direct method can be obtained by:

- 1 using the accounting system, which directly records and analyses the cash flows in relation to the cash transaction (as follows)
 - 2 adjusting sales, cost of sales and other profit and loss items for non-cash items (to be illustrated in Chapter 16).
- In this chapter we focus on the direct method.

EXHIBIT 7.3

XYZ LIMITED

STATEMENT OF CASH FLOWS FOR THE FINANCIAL YEAR ENDED 30 JUNE 2022

	2022 \$'000	2021 \$'000
Cash flows from operating activities		
Receipts from customers	30 150	27 130
Payments to suppliers and employees	(27 600)	(25 040)
Dividends received	100	250
Interest received	300	270
Interest paid	(270)	(240)
Income taxes paid	(900)	(810)
Royalty received	<u>180</u>	<u>–</u>
Net cash provided by operating activities	<u>1 960</u>	<u>1 560</u>
Cash flows from investing activities		
Purchase of shares in other companies	(550)	–
Payment for property and equipment	(350)	(1 200)
Proceeds from sale of equipment	<u>20</u>	<u>10</u>
Net cash used in investing activities	<u>(880)</u>	<u>(1 190)</u>
Cash flows from financing activities		
Proceeds from issue of shares	300	200
Proceeds from borrowings	200	240
Repayment of borrowings	(90)	(80)
Dividends paid	<u>(1 200)</u>	<u>(1 080)</u>
Net cash used in financing activities	<u>(790)</u>	<u>(720)</u>
Net increase/(decrease) in cash held	290	(350)
Cash at the beginning of the financial year	<u>120</u>	<u>470</u>
Cash at the end of the financial year	<u>410</u>	<u>120</u>

The statement of cash flows (including cash flow from operations) can be obtained by dissecting the accounting records and looking for all entries that impact the cash account. Assume all items related to the cash account are listed as follows.

	\$
1 Opening balance	25 000
2 Cash from accounts receivable	30 000
3 Cash sales	20 000
4 Cash from mortgage loan	25 000
5 Payments to accounts payable	15 000
6 Payments for repairs and maintenance	500
7 Purchase of land	40 000
8 Payments of cash for wages	12 000
9 Purchase of plant and equipment for cash	20 000
10 Issue of shares	10 000
11 Closing balance	22 500

Items 2, 3, 5, 6 and 8 all affect cash flow from operations. Items 4 and 10 would be classified under financing activities. Items 7 and 9 would be classified as investing activities. The cash flow from operations would be calculated as follows:

	\$
Receipts from customers (30 000 + 20 000)	50 000
Payments to suppliers (15 000 + 500)	(15 500)
Payments to employees (12 000)	<u>(12 000)</u>
Cash flow from operations	22 500

A full statement of cash flows from Reval Limited is shown in Exhibit 7.4.

EXHIBIT 7.4**REVAL LIMITED****STATEMENT OF CASH FLOWS FOR THE MONTH ENDED 31 MAY 2022**

	\$
Cash flows from operating activities	
Receipts from customers	50 000
Payments to suppliers	(15 500)
Payments to employees	<u>(12 000)</u>
	22 500
Cash flows from investing activities	
Purchase of land	(40 000)
Purchase of plant and equipment	<u>(20 000)</u>
	(60 000)
Cash flows from financing activities	
Issue of shares	10 000
Proceeds from borrowings	<u>25 000</u>
Net increase/(decrease) in cash held	(2 500)
Cash at the beginning of the month	<u>25 000</u>
Cash at the end of the month	22 500

Australian Accounting Standards require the direct method of presentation for cash flow from operations because it provides information that is not otherwise available in the balance sheet and the income statement. Accounting Standards suggest that it provides a more useful basis for estimating future cash flows than the indirect method, which shows only the net amount of cash flows from operating activities and does not report the individual components of cash flows from operations.

The indirect method will be discussed further in Chapter 16. In Australia, it is included in the notes to the financial statements to support the information in the direct method.



HOW'S YOUR UNDERSTANDING?

7C Classify each of the following as either operating, investing or financing cash flows.

- (i) payment of wages
- (ii) dividends paid
- (iii) issue of shares
- (iv) dividends received
- (v) cash sales
- (vi) proceeds from the sale of equipment
- (vii) borrowing from the bank
- (viii) repayment of a loan

7.3 Interpreting a statement of cash flows (direct method)

In interpreting a cash flow statement, it is important to look at both the current year numbers and changes from the previous year(s). For most companies, there will be a positive cash flow from operations. In particular, it is important that receipts from customers are higher than payments to suppliers and employees. If this is not the case, the reader of the report needs to look more broadly to understand the reasons and over what period this is occurring.

A company cannot continue to have negative cash flow from operations and survive. Some start-up companies may have negative cash flow from operations in their early years as they build up a customer base, but long term they need to have positive cash flow from operations.

Next, it is important to consider cash flow from investing, which would usually be a negative number as companies expand or at least maintain their investments including property, plant and equipment. If cash flow from investing is positive, it is important to gain an understanding of why the company is selling off assets.

The amount by which cash flow from operations exceeds cash flow from investing is often called 'free cash flow'. It shows what cash is left over from operations after financing its investments. This difference can be used to pay dividends and pay back borrowings.

Cash flow from financing incorporates three main items: the issue or buy-back of its own shares, additional borrowings or the paying back of borrowings, and dividend payments to shareholders. When cash flow from investing exceeds cash flow from operations, it is necessary to generate extra cash through either the issue of shares or through borrowings. Also, sometimes the cash flow from financing section will show changes in how the company finances the business. For example, an issue of shares and a repayment of borrowings may indicate that the company is focusing on reducing its debt levels.

To illustrate some of the information you can gain from examining statements of cash flows, we will consider the statement of cash flows for a large Australian company (with some simplifications made), which is shown in Exhibit 7.5. We have included the comparative figures for the 2022 and 2021 statements of cash flows.

LO4

EXHIBIT 7.5

GEORGIE LTD

STATEMENTS OF CASH FLOWS FOR THE FINANCIAL YEARS ENDED 30 JUNE 2022 AND 2021

	2022 \$m	2021 \$m
Cash flows from operating activities		
Receipts from customers	2 917.9	2 204.9
Payments to suppliers and employees	(2 657.3)	(1 926.1)
Interest received	33.5	23.6
Interest and other costs of finance paid	(127.5)	(77.0)
Income tax paid	<u>(49.7)</u>	<u>(52.4)</u>
Net cash flows from operating activities	<u>116.9</u>	<u>173.0</u>
Cash flows from investing activities		
Proceeds from disposal of other property, plant and equipment	33.0	17.1
Payments for:		
Additions of investments in securities	(32.9)	(2.5)
Additions of property, plant and equipment	(480.8)	(323.7)
Acquisitions of other entities	<u>(770.9)</u>	<u>(12.7)</u>
Net cash flows used in investing activities	<u>(1 251.6)</u>	<u>(321.8)</u>
Cash flows from financing activities		
Proceeds from issue of shares	737.6	50.2
Proceeds from borrowings	695.7	164.3
Borrowings repaid	(233.5)	(95.2)
Dividends paid	<u>(75.9)</u>	<u>(64.5)</u>
Net cash flows (used in)/from financing activities	<u>1 123.9</u>	<u>54.8</u>
Net increase/(decrease) in cash and cash equivalents	(10.8)	(94.0)
Cash and cash equivalents held at the beginning of the financial year	329.9	420.2
Cash and cash equivalents held at the end of the financial year	<u>319.1</u>	<u>326.2</u>

The following should be noted about the statement of cash flows in 2022 in Exhibit 7.5:

- 1 Cash held remained fairly constant, reducing from \$326.2 million to \$319.1 million.
- 2 Cash flow from operations fell from \$173.0 million to \$116.9 million. While receipts from customers increased, the increase in payments to suppliers and employees increased by a larger amount.
- 3 There were large cash flows for investing activities, in particular acquisition of property, plant and equipment (\$480.8 million) and acquisitions of other entities (\$770.9 million).
- 4 Only a small proportion of the investing activities was funded by cash flow from operations (\$116.9 million).
- 5 There was a substantial increase in financing inflows as a result of the issue of shares and new borrowings. This additional finance was required to cover the cash outflows for investments.
- 6 Under financing activities, note that some borrowings were repaid during the year (\$233.5 million) and dividends of \$75.9 million were paid during the year. However, there were significant additional borrowings of \$695.7 million and cash received from the issue of shares.

7.4 Working capital management

To achieve long-term profitability, organisations need to have sufficient cash for the short term and the long term. For example, if in the short term an organisation does not have enough cash to pay its bills and wages, it cannot survive. One reason is that their suppliers and employees will stop providing goods and services.

LO5

For most organisations, a large percentage of sales are made on credit and all purchases of goods and services are made on credit. The times between buying and selling inventory and then between selling inventory and receiving the cash are important. The former depends on how long items take to sell. The latter can vary from a cash sale where cash is received immediately, to a sale on a credit card (with cash likely received between 1–7 days) or on credit where terms can be 30 days or more. As not all organisations pay on time, the receipt of the cash may be much greater than 30 days and in some relatively rare cases, the cash may never be collected. This is called a *bad debt*.

Working capital is defined as *the excess of current assets over current liabilities*. The common current assets and current liabilities were discussed in Chapters 2 and 3. You may recall that current assets include cash, inventory, accounts receivable and prepayments. Current liabilities include accounts payable within one year, short-term loans and accruals such as wages payable. Working capital is required to meet the day-to-day operations of the organisation. It is the part of the organisation's capital that is required to finance the purchase of inventory (both raw materials and finished goods) and regular expenses including wages, electricity, rent, insurance and other expenses.

Not all organisations require the same amount of working capital. The amount needed depends on factors such as the length of the production cycle (i.e. how long it takes to produce goods or services), the credit policy of the organisation (i.e. how long it takes to collect accounts receivable), and its payment policy (for example, many government departments have a policy of payment within 30 days; large organisations sometimes disclose their payment policies to avoid criticisms of slow payment to small suppliers). Working capital requirements also depend on the nature of the industry, the ability of an organisation to sell inventory quickly (sometimes by a 'sale' at reduced prices, e.g. retailers, airlines), and arrangements with the banks to lend quickly if needed. There may also be seasonal variations when organisations need to build up inventory for a particular time of the year (e.g. the winter ski season).

Working capital management involves estimating the working capital requirements for a particular period and then ensuring the appropriate sources of working capital are available when needed. While holding excessive working capital will reduce overall profitability, having insufficient working capital can have severe negative consequences including company failure.

To sum up, two important objectives of working capital management are:

- 1 to ensure liquidity of the business and thus avoid company failure
- 2 to increase profitability; funds in working capital earn low returns and so tying up too many dollars in working capital can reduce profitability.

A key part of working capital management is managing cash flows. The aim of the cash management process is to have sufficient cash to pay suppliers and employees on time, but to also minimise the cash balance held. Paying employees on time is essential and paying suppliers on time is important to ensure an ongoing supply at an appropriate price and to maintain positive supplier relationships. For example, suppliers continually monitor the creditworthiness of their customers and may adjust prices based on this factor. This becomes particularly important when inventory is in short supply and at the extreme, a supplier may stop supplying to a customer with a poor payment record. On the other hand, organisations want to minimise their cash held. Cash held has to be financed in some way, which means additional borrowing is required including the payment of interest, or existing cash is used for which there are likely to be alternative, more profitable uses. Both scenarios can lead to lower returns on capital employed.

So overall, maintaining sufficient cash is important to maintaining an organisation's creditworthiness, which affects both the cost of borrowing and ensuring the supply of resources the organisation needs. Maintaining sufficient cash decreases the likelihood of financial distress and eventual organisation failure. On the other hand, holding too much cash in assets that provide a lower return impacts long-term profitability. Thus,

organisations need to determine and maintain an adequate level of cash and/or be in a position where they can organise additional cash quickly when required. Two important activities of this cash management process are determining and managing the cash flow cycle and preparing regular cash budgets.

7.5 Cash flow cycle

LO6 The cash flow cycle, also called the *cash operating cycle*, calculates the number of days between paying accounts payable for supplies and receiving the cash from sales. It tells us how long the organisation takes to convert each dollar invested in inventory into cash via the production and sales processes. Organisations receive inventory purchased on credit and these purchases then need to be paid for within a certain number of days (called *days in payables*). After receiving the purchased inventory, this inventory will be sold to customers. This period can vary from almost immediately to many months (called *days in inventory*). The inventory is sold for cash or on credit. When it is sold on credit, there will be a time delay before the cash is received (called *days in receivables*).

To calculate the cash flow cycle, use the following formula:

$$\text{Cash flow cycle} = \text{Days in inventory} + \text{Days in receivables} - \text{Days in payables}$$

Calculations of days in inventory and days in receivables (also called *days in debtors*) were presented in the previous chapter. We present these calculations here with some added detail.

$$\text{Days in inventory} = \text{Cost of sales for the year}/\text{average inventory for the year}$$

$$\text{Days in receivables} = \text{Credit sales for the year}/\text{average accounts receivable for the year}$$

$$\text{Days in payables} = \text{Credit purchases for the year}/\text{average accounts payable for the year}$$

There are variations in how these ratios are calculated in practice. Where the denominator balances (inventory, accounts receivable and accounts payable) do not change much during the year, it is common to use the year-end balance in the calculations, instead of an average of the opening and closing numbers.

Annual reports do not disclose cash sales and credit sales separately. For most organisations, the majority of sales are on credit so the assumption can be made to treat all sales as being on credit. However, some organisations do have substantial cash sales (e.g. retailers such as Woolworths, Bunnings, David Jones) and in this case, an estimate needs to be made of credit sales based on the information available. Also, annual reports do not disclose credit purchases, so using COGS instead of credit purchases is common. Using COGS in the days in inventory calculation makes sense when year-end inventory balances do not change much from year-to-year and because the vast majority of organisations purchase all inventory on credit.

Interpreting cash flow cycle data

The number of days in the cash flow cycle indicates the funds needed for working capital. The higher the number, the more it costs the organisation, because this amount of cash that is tied up in working capital needs to be financed. So, while the aim is to reduce the number of days, this is sometimes outside the control of the organisation. Here we consider days in inventory, receivables and payables in turn.

The number of days in inventory often depends on such factors as the nature of the product (e.g. fresh fruit is likely to be sold much quicker than sporting equipment). The number of days can be reduced by holding less inventory, but this can result in lost sales if an organisation does not have the stock available when someone visits their shops or orders online. The reason an organisation may hold a lot of inventory is to avoid losing sales. If a customer attempts to buy something, being out of stock on one item may mean the organisation not only loses that sale, but also sales of other items the customer may have bought and may even lose sales in the future if the customer is disappointed with their shopping experience. On the other hand, excessive inventory can increase the risk of obsolete inventory, particularly if inventory includes perishable items, technology products with a short lifecycle, or merchandise that goes out of fashion or season (e.g. clothes that capture a fashion trend or seasonal preference).

Days in receivables will depend on the days of credit (credit terms) that an organisation grants to its customers. For example, while 30-day credit terms may be common, in some industries it is much higher. Organisations have a fairly high degree of control over the period they give their customers to pay for goods or services and there are a number of reasons why they may give longer payment terms, including this being standard practice in the industry, the customer having a good payment record but needing the extra time to pay and/or to avoid losing customers. On the other hand, in addition to the cost of increased cash flow cycle, there is a greater chance of bad debts and extra collection costs as the number of days in inventory increases. Also, some customers do not pay on time and so collection time may depend on organisational policies for following up on late payments.

Days in payables is determined by the supplier of the inventory. While the supplier determines the payment terms for accounts payable, organisations need to be careful about paying late as it may damage their relationship with the supplier and affect both future costs and access to supply (e.g. the supplier not continuing to supply or demanding payment at the time of delivery). In many situations, both days in receivables and days in payables are negotiated between the two parties and they are likely to be affected by past relationships between the parties involved and what are competitors' terms of payment and industry practice.

Listed are five different organisations with a cash flow cycle ranging from very long to negative.

	Days in inventory	Days in receivables	Days in payables	Cash flow cycle
Company A	50	70	-30	90 days
Company B	30	40	-30	40 days
Company C	5	30	-35	0 days
Company D	4	1	-60	-55 days
Company E	0	-60	-30	-90 days

In the five examples supplied, Company A has the longest cash flow cycle, which means cash is tied up for 90 days and this incurs a cost, normally in the form of interest paid to the bank. An example of this type of organisation is a manufacturer of furniture or an importer of electrical goods. It needs a variety of types of goods for sale and demand is hard to predict, so goods may sit in the warehouse for long periods (in this case, 50 days). It then sells to large retailers who may negotiate a long payment period (in this case, 70 days). However, its own suppliers demand payment in a 30-day period. Company B is similar but can predict demand more accurately and/or has suppliers who can supply quickly when needed, so days in inventory are fewer at 30 and terms for receivables are much shorter resulting in quicker collection of cash. Company C is likely to have very reliable suppliers who deliver within a few days of the organisation putting through their purchase request (often called *just in time* purchasing). It then collects receivables on quicker terms than it pays suppliers (30 days versus 35 days) and as a result the cash flow cycle is zero days ($5 + 30 - 35$). This means they are basically paying out the cash on the same day as they receive it. Company D represents the situation of many large retailers, particularly those that sell food. A lot of their food will have a limited shelf life and they get very regular deliveries from their suppliers with a short order time. They then sell for cash or on credit card which usually results in receipt of cash the next day. On the other hand, they are usually in a strong bargaining position with many of their suppliers and often receive long payment terms (in this case 60 days). As a result, the cash flow cycle is -55 days ($4 + 1 - 60$) which means the organisation receives its cash 55 days before it has to pay out cash to creditors. Instead of financing being a cost, it is actually a benefit because the organisation can start earning interest on that cash as soon as it receives it. Finally, Company E, which has no inventory, may be a service organisation that works on commission; it receives cash in advance and pays for services at a later date. For example, a travel agent may sell airline tickets and hotel accommodation. The client pays for these in advance of taking their holidays (in this case, 60 days in advance) and then the organisation is given 30 days to pay the airline and hotel after the client receives those services. In this case, the cash flow cycle is -90 days, meaning the organisation is holding the cash for 90 days before it has to pay any of it out. Lots of organisations including airlines, insurance, telecommunication, utility, sporting clubs and gyms receive cash in advance and then provide a service later.



HOW'S YOUR UNDERSTANDING?

- 7D** If days in inventory, receivables and payables are 40, 40 and 30 respectively:
- (i) calculate the cash flow cycle
 - (ii) provide two actions that the organisation can take to reduce the cash flow cycle and the potential costs of taking each action.

7.6 Cash flow forecasting

LO7 With the knowledge of an organisation's cash flow cycle, managers can undertake cash flow forecasting to better understand the amounts of cash that will flow into and out of the organisation during the year.

Cash flow forecasting involves estimating an organisation's cash inflows and outflows over a period (usually one year) to make sure it can meet future commitments for cash payments, and if there is an excess of cash, to make the best use of that cash. The forecast will include cash sales, cash collections from accounts receivable and other miscellaneous cash receipts including interest and dividends. It will also include cash outflows for wages, rent, other expenses paid in cash and commitments for loan repayments.

In cash flow forecasting it is common to consider a range of scenarios, which often depend on uncertainties around future sales levels. The accuracy of predictions of future sales and the likelihood of unexpected events outside the organisation's control, including changes in the economy, actions of competitors, etc., all need to be considered. Forecasts should be updated regularly by checking the accuracy of assumptions made and considering emerging trends.

On the basis of this cash flow forecasting and a whole range of decisions by management and the Board of Directors (e.g. a desired return on equity, a preferred debt/equity ratio, a position on stability versus growth), an organisation will formalise its strategies for the next and subsequent years. The cash forecasting exercise may show that not enough cash will be available to support desired actions, so management may decide to look for new products or expansion opportunities, to conduct major advertising campaigns, to implement cost cutting programs, etc. This strategy will form the basis of the development of a whole range of budgets for the forthcoming year. This is called a *master budget* and will be covered in courses you study in management accounting. But given the management of cash is such a fundamental part of financial management, we will focus here on one important part of that budget process, namely the cash budget, given just how critical cash is to the success and survival of an organisation.

7.7 Cash budget

LO7 The cash budget is the detailed plan that shows all expected sources and uses of cash in the forthcoming year. Yearly budgets are broken down into quarterly budgets, and quarterly budgets are broken down into monthly budgets. The use of smaller time periods allows managers to compare actual data with budgeted data as the year unfolds and to take corrective actions whenever necessary. Checking progress more frequently with monthly budgets means that problems are less likely to come as a surprise. Schedules of cash receipts and cash payments are major inputs to the cash budget.

The cash budget has the following six main sections:

- 1 beginning cash balance
- 2 cash collections
- 3 cash disbursements
- 4 cash excess or deficiency
- 5 financing
- 6 ending cash balance.

The beginning cash balance is last period's closing cash balance and the cash collection section comprises the current period's expected cash receipts. Expected cash receipts include all sources of cash for the period being considered. The main source of cash is from sales. As a significant proportion of sales are usually on credit, a major task for an organisation is to determine the pattern of collection for its accounts receivable.

The cash disbursements section of the cash budget lists all planned cash outlays for the period, except for interest payments on short-term loans (these payments appear in the financing section). All expenses not resulting in a cash outlay are excluded from the list (depreciation, for example, is not included because it does not involve a cash payment).

The cash excess or deficiency section is a function of the cash needs and the cash available. Cash needs are determined by the total estimated cash disbursements, plus the minimum cash balance required according to company policy. If the total cash available is less than its cash needs, a deficiency exists. In such a case, a short-term loan will be required or the organisation goes into overdraft. On the other hand, where there is a cash excess (i.e. the cash available is greater than the organisation's cash needs), the organisation has the ability to repay loans and perhaps make some temporary investments.

In the event of a deficiency, the cash budget must show the amount to be borrowed so that the cash needs are satisfied. Also, the cash budget should reveal planned repayments of borrowings. Thus, the financing section discloses the planned borrowings and repayments, including interest. Where an organisation uses an overdraft system, it is not necessary to show borrowings and repayments as an overdraft is an agreement with the bank that the balance can go negative up to a certain limit. The final section of the cash budget shows the planned ending cash balance.

Shown in Exhibit 7.6 is a quarterly cash budget for Bondi Limited.

EXHIBIT 7.6**BONDI LIMITED****CASH BUDGET FOR THE YEAR ENDED 30 JUNE 2022 (IN THOUSANDS)**

	Quarter				Year
	1	2	3	4	
\$	\$	\$	\$	\$	\$
Beginning cash balance	120	141	102	1 421	120
Collections:					
Cash sales	700	2 100	2 400	800	6 000
Credit sales collections:					
Current quarter	490	1 470	1 680	560	4 200
Prior quarter	300	210	630	720	1 860
Total cash available	1 610	3 921	4 812	3 501	12 180
Less disbursements:					
Payments for raw materials	(623)	(1 379)	(1 453)	(701)	(4 156)
Direct labour	(288)	(720)	(672)	(240)	(1 920)
Overhead	(408)	(840)	(792)	(360)	(2 400)
Selling and administrative	(150)	(350)	(365)	(150)	(1 015)
Income taxes	–	–	–	(650)	(650)
Equipment purchase	(600)	–	–	–	(600)
Total disbursements	(2 069)	(3 289)	(3 282)	(2 101)	(10 741)
Minimum cash balance	(100)	(100)	(100)	(100)	(100)
Total cash needs	(2 169)	(3 389)	(3 382)	(2 201)	(10 841)
Excess (deficiency) of cash available over needs	(559)	532	1 430	1 300	\$1 339



Financing:

Borrowings	600	–	–	–	600
Repayments	–	(500)	(100)	–	(600)
Interest	–	(30)	(9)	–	(39)
Total financing	600	(530)	(109)	–	(39)
Ending cash balance*	141	102	1 421	1 400	1 400

*Note: Ending cash balance includes the minimum cash balance.

The cash budget for Bondi Limited illustrates the importance of breaking the annual budget down into smaller time periods. The cash budget for the year gives the impression that sufficient operating cash will be available to finance the purchase of the new equipment. Quarterly information, however, shows the need for short-term borrowing because of the purchase of new equipment and the timing of the organisation's cash flows. Breaking down the annual cash budget into quarterly time periods conveys more information. Even smaller time periods often prove to be useful. Most organisations prepare monthly cash budgets, and some even prepare weekly budgets.

Another significant piece of information emerges from Bondi's cash budget. By the end of the third quarter, the organisation has a considerable amount of cash on hand (\$1 421 000). It is certainly not wise to allow this much cash to sit idly in a bank account. The management of Bondi should consider making long-term investments. At the very least, the excess cash should be invested in short-term investments with a reasonable rate of return. Once plans are finalised for use of the excess cash, the cash budget should be revised to reflect those plans. Budgeting is a dynamic process. As the budget is developed, new information becomes available and better plans can be formulated.



HOW'S YOUR UNDERSTANDING?

7E East Hills Ltd is a small retailer that operates from premises in a suburban shopping centre. Budgeted sales for the 3-month period July–September 2022 are:

- \$440 000 for July
- \$640 000 for August
- \$820 000 for September

The management of East Hills Ltd expects 30 per cent of its sales to be cash sales. For its credit sales, 75 per cent are expected to be collected in the month of the sale, 20 per cent in the month following the sale, and the remainder are expected to be uncollectable.

- (i) What are East Hills Ltd's cash collections from customers in August 2022 predicted to be?
(ii) What are the expected cash collections from customers in September 2022?

7.8 Capital investment analysis

LO9 Our focus in the previous section was on working capital and, in particular, the short-term need for liquidity. This is important because failure to adequately manage working capital can adversely impact the survival of an organisation. However, it is also important to consider investing capital in longer-term investments, including acquiring long-term assets for growth. These assets are used to allow the organisation to expand capacity and/or increase operational efficiency. Capital investment decisions involve inflows and outflows over a number of years. Examples of types of capital investment include expanding capacity, replacing equipment, implementing cost reduction programs and providing new services. In each situation there will

be large cash outflows at the start of the period and other outflows through the life of the project. There will also be regular inflows throughout the duration of the project (e.g. cash from customers) that may vary in dollar amounts between years.

There are three types of decisions that managers may need to make using capital investment analysis. First, accepting or rejecting a specific proposal (e.g. system upgrade, purchase of equipment to increase capacity, introducing a cost reduction program that requires a large investment in the first year and benefits in later years). Second, selecting from two or more mutually exclusive projects. For example, an organisation's lease on its premises may be due to expire and the organisation has decided to buy land and buildings, choosing from three different locations. The decision is about which of the three locations to select given the cost of the purchase upfront, but is also influenced by long-term savings in transport, staff costs, utilities, and so on. Third, capital investment analysis can be used to rank projects competing for budget resources. For example, different departments may apply for investment capital to support activities including those that will provide additional capacity, new processes aimed at reducing costs, or providing differentiation of products compared to their competitors to increase sales.

To assess the financial effects of capital investments, it is necessary to identify the expected outcomes flowing from the suggested investment (e.g. additional sales volume, improved quality resulting in higher sales price, labour savings, decreased operating costs) and predicting the cash flows associated with these outcomes. A range of techniques can be used in this evaluation process. They range from simple techniques (e.g. pay-back period) to more sophisticated techniques that incorporate the time value of money (e.g. net present value). In this introductory treatment of capital investment analysis, we restrict ourselves to the basics of these methods. In later accounting and finance courses, you will be exposed to other methods (e.g. internal rate of return) and some of the challenges faced in these analyses.

To assess the financial consequences of a prospective investment, it is necessary to include the predicted cash flows (both inflows and outflows) arising from the project over the estimated life of the project. Each predicted cash inflow and cash outflow related to the project is identified within the period in which it is expected to occur and entered into the appropriate column (year) and the appropriate row (type of receipt or disbursement), as shown in Exhibit 7.7. Major investment proposals affect many types of receipts and disbursements (rows) and many periods (columns). Some cash flows may be one-off (e.g. initial investment in the project), some may be occasional (e.g. disposal of old equipment, major overhauls of equipment) and some may be recurring each period (e.g. receipts from customers, payments to suppliers and employees).

EXHIBIT 7.7

SYDNEY LTD

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Purchase equipment						
Modifications						
Revenues (cash collected)						
Cash operating costs						
Labour savings						
Rental forgone						
Salvage value						
Tax payment						
Net cash flows						
PV factor						
PV amount						
Net present value						

The cash flows mentioned occur in different time periods that have a different value at the time of making the investment, depending on how far into the future the cash is received or paid. For example, would you prefer to receive \$1000 today or in three years' time? You should prefer to receive it now, as this will allow you to invest it. For example, an investment of \$1000 for three years at 10 per cent per year compound interest is equal to \$1331. This effect is called the *time value of money* and it is described as the preference to receive cash earlier rather than later and to pay cash later rather than earlier. The Appendix for this chapter explains the time value of money concepts – read it now if you are not familiar with the concept.

Every investment proposal must meet a hurdle rate desired by the organisation. This hurdle rate and how it is calculated will be discussed in future finance courses. At this stage, we describe it as a discount rate which will be at or above the organisation's cost of capital and normally varying with the risk of the project. To get the present value (PV) of an amount to be received in the future (FV) using a discount rate (R) we have the following formula:

$$PV = \frac{FV}{(1 + R)^N}$$

where N is the number of years to when payment is received

While discounting can be more frequent, generally organisations discount annually. Any cash flows recorded at the start of the project (e.g. outlay for equipment, modification of equipment, installation costs) are included in Year 0 (Y_0). All other cash flows are included in the year in which cash comes in or goes out and are assumed to come in at the end of that year (i.e. Year 1, Year 2, etc.).

Assuming a discount rate of 10 per cent, we can calculate the discount factor as follows:

Year 1	$\frac{1}{(1.1)^1}$	=	0.909
Year 2	$\frac{1}{(1.1)^2}$	=	0.826
Year 3	$\frac{1}{(1.1)^3}$	=	0.751
Year 4	$\frac{1}{(1.1)^4}$	=	0.683
Year 5	$\frac{1}{(1.1)^5}$	=	0.621

In the following text we include the PV of \$1.00 applying discount rates of 1–12 per cent for years 1–10. You can see the PVs of 0.909, 0.826, 0.751, 0.683 and 0.621 in the 10 per cent column. These PVs will be added into Exhibit 7.7 and multiplied by the net cash flows for each year from Y_0 to Y_5 . These PV of cashflows in each year are then added together to obtain the net present value of the project.

% 1 2 3 4 5 6 7 8 9 10 11 12	Discount rate											
	1	2	3	4	5	6	7	8	9	10	11	12
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.594	0.567
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322

We will now demonstrate two capital investment methods, payback period and net present value (NPV), using the following data.

Machine	0	1	2	3	4	5	Total
A	(100 000)	50 000	50 000	50 000	50 000	50 000	150 000
B	(100 000)	70 000	30 000	80 000	60 000	10 000	150 000
C	(100 000)	40 000	20 000	40 000	100 000	100 000	200 000

Payback period

The payback period technique measures the number of years required for an investment outlay to be recouped from the cash flows generated by the investment. It is solely concerned with liquidity and completely ignores profitability. The method is useful when an organisation faces possible liquidity problems or when cash flows after the payback period are uncertain. The payback period is calculated by adding the net cash flows in consecutive years until the amount of the initial outlay is recovered. The payback period for Machines A and B are both two years (A: $50\ 000 + 50\ 000 = 100\ 000$; B: $70\ 000 + 30\ 000 = 100\ 000$). The payback period for Machine C is three years ($40\ 000 + 20\ 000 + 40\ 000$).

The payback period for Machine A is less than Machine C, because the initial outlay for A is recovered more quickly. However, the payback period does not consider the relative profitability of the projects or the cash flows occurring after the payback period. More importantly, the payback does not consider the time value of money: all cash flows are equally weighted regardless of when they occur. However, it provides insight into the risk of a project, because the longer the payback period, the greater the likelihood of economic conditions changing and cash flows to be different from those predicted. Although the payback period ignores differences in expected project life, total cash flows and the time value of money, it is a useful screening device; some organisations use the payback period as a first test of a potential capital investment, then examine the return on the project.

Net present value

The net present value (NPV) method calculates the excess of the present value of the expected future net cash flows (cash inflows minus cash outflows) generated by the investment over the initial cash outlay. The required rate of return is called the opportunity cost of capital because it is the return forgone by investing in the project rather than investing in alternative projects. It is also referred to as the *discount rate*, the *required rate of return*, the *cut-off rate* or the *hurdle rate*.

The steps in calculating the NPV of a project are as follows:

- 1 Identify the organisation's required rate of return for this type of project.
- 2 Estimate the following:
 - life of the project (in years)
 - initial investment (cash outflow in Year 0)
 - other cash outflows throughout the life of the project
 - cash inflows throughout the life of the project
 - cash savings (e.g. labour, electricity, etc.) throughout the project.
- 3 Compute the NPV of the project by multiplying the net cash flows in each year by the PV discount rate for that year, then adding these discounted cash flows together.

The decision rule applied here is that all projects that have a positive NPV are acceptable in economic terms. If the projects are mutually exclusive (that is, you need to choose between two alternatives) you take the project with the highest NPV.

Illustrative example of cash flows over 5 years @ 10 per cent.

	Cash Flows (\$) in Years					
	0	1	2	3	4	5
Cash Flows	(100 000)	50 000	40 000	30 000	20 000	10 000
PV Factor (10%)	1.0	0.909	0.826	0.751	0.683	0.621
PV	(100 000)	45 450	33 040	22 530	13 660	6 210
NPV		+ 20 890				

This project has a net present value of \$20 890. What exactly does this mean? It tells us that the project is acceptable in economic terms and that by going ahead with the project the organisation will be better off by \$20 890 in present day dollars than it would be if it did not go ahead. Of course, all this depends on the accuracy of the estimates of cash flows, both in terms of dollar amounts and the year in which they occur.



HOW'S YOUR UNDERSTANDING?

7F Based on the data in the previous table, answer the following questions:

- (i) What is the effect on NPV if the net cash inflow in Year 5 is only \$4000?
- (ii) What is the effect on NPV if the \$50 000 cash flow in Year 1 is delayed and not actually received until Year 4 (assume other cash flows come in the years expected).

If we go back to our example of Machines A, B and C earlier, we can calculate the NPV of each machine using a 15 per cent discount rate as follows.

Year	Net cash flows			Present value (discount) factor 15%*	Present value amounts		
	Machine A \$	Machine B \$	Machine C \$		Machine A \$	Machine B \$	Machine C \$
1	50 000	70 000	40 000	0.870	43 500	60 900	34 800
2	50 000	30 000	20 000	0.756	37 800	22 680	15 120
3	50 000	80 000	40 000	0.658	32 900	52 640	26 320
4	50 000	60 000	100 000	0.572	28 600	34 320	57 200
5	<u>50 000</u>	<u>10 000</u>	<u>100 000</u>	0.497	<u>24 850</u>	<u>4 970</u>	<u>49 700</u>
	250 000	250 000	300 000				
Present value					167 650	175 510	183 140
Less initial outlay					<u>100 000</u>	<u>100 000</u>	<u>100 000</u>
Net present value					<u>67 650</u>	<u>75 510</u>	<u>83 140</u>

The analysis provided shows that all machines are financially acceptable, as they all have positive NPVs. However, Machine C is preferred in present value terms because it provides the greatest net present value. Also note that while Machine A and Machine B both have total cash flow increases of \$150 000, Machine B is preferred over Machine A because the timing of the cash flows of Machine B come in earlier years than Machine A and are, therefore, multiplied by a higher PV factor. That is, getting the cash in earlier means that cash can be reinvested.

Capital investment analysis extensions

Here we consider some additional factors that need to be considered when preparing your cash investment analysis.

- 1 **Capital outlay:** there is usually a large capital outlay at the start of a project. Assuming it is the purchase of a major piece of equipment, there will be an outlay shown under Y_0 (that is, the start of the project) for the cost of the new equipment and any other costs getting the equipment installed and ready for use. These outlays will appear as negative numbers and we use brackets to indicate this is the case.
- 2 **Sale of the old equipment:** often new equipment replaces older existing equipment (e.g. purchase of a new aircraft may mean the disposal of an old plane). If the existing equipment can be sold, the cash received on disposal will be included (as a positive number) in the Y_0 column. We assume that the old equipment is sold at its book value (cost minus accumulated depreciation), so there are no tax implications.
- 3 **Cash flows from additional revenues:** the additional revenues received from the investment in new equipment are treated on an incremental basis, that is, the difference to what was received previously. So, if this is a replacement, it will be the additional cash inflows from revenues. If this is not a replacement, it will be the total cash inflows from the revenues. These appear as positive numbers.
- 4 **Cash operating outflows:** again, the same incremental approach is used here. These outflows are shown as negative numbers in the analysis.
- 5 **Cash savings:** many capital investment projects are undertaken to reduce costs, e.g. savings in labour or electricity costs. These cash savings are shown as positive numbers in the analysis.
- 6 **Depreciation:** depreciation does not affect cash flow and is, therefore, not included in the analysis (except it will have an impact on the tax paid, see as follows).
- 7 **Tax paid:** this will be an outflow. In the analysis that follows, we provide the amount of tax to be paid.

Illustrative example: Capital investment analysis

Telco Limited is considering the introduction of a new service for customers. The following information is provided to assist in the decision-making process:

	\$
Capital outlay at the start of the project	300 000
Yearly cash operating costs	50 000
Estimated cash inflows from customers:	
Year 1	140 000
Year 2	145 000
Year 3	150 000
Year 4	160 000
Year 5	185 000

Assume the discount rate is 10 per cent.

Solution:

	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5
Cash outlay	(300 000)					
Operating costs		(50 000)	(50 000)	(50 000)	(50 000)	(50 000)
Cash from customers	<u> </u>	<u>140 000</u>	<u>145 000</u>	<u>150 000</u>	<u>160 000</u>	<u>185 000</u>
	(300 000)	90 000	95 000	100 000	110 000	135 000
PV factor	<u> 1.0 </u>	<u>0.909 </u>	<u>0.826 </u>	<u>0.751 </u>	<u>0.683 </u>	<u>0.621 </u>
	(300 000)	81 810	78 470	75 100	75 130	83 835
Net present value =	\$94 345					

7.9 Using Excel for NPV calculations

LO10

You can use an Excel spreadsheet for your NPV calculations. Using Excel then allows you to re-calculate NPV quickly if you need to change any of the assumptions you have made or to conduct sensitivity analysis. For example, by changing the appropriate input cells in your Excel spreadsheet, you can quickly calculate what would be the new NPV if the following changes were made:

- 1 the discount rate was changed from 10% to 12%
- 2 the expected cash savings in years 3 to 5 were changed from \$10 000 to \$20 000
- 3 an additional modification at a cost of \$50 000 will be required in year 0
- 4 due to competitors introducing the same technology one year later, the expected increase in cash inflows will be reduced by 50% after year 2.

A sample of an Excel spreadsheet with example formulas has been provided for the following scenario: Gold Ltd is considering an investment proposal to purchase new equipment. The following data has been gathered and you have been requested to calculate the NPV for this potential investment:

- 1 The company discount rate is 10%.
- 2 The new equipment will cost \$300 000 with additional modifications costing \$50 000. The equipment has an estimated life of 5 years and the expected salvage value for the equipment will be \$20 000 in year 5.
- 3 Additional sales of \$100 000 are expected each year with expected labour savings of \$5000 in year 1 and increasing by \$5000 per year to year 5.
- 4 Additional operating costs will be \$10 000 each year and there will be additional maintenance costs of \$1000 in years 1 to 3.
- 5 To simplify the example there is no tax payment.

Using the table from Exhibit 7.7 as a template, following is a sample spreadsheet including notes for suggested set-up and formulas that can assist in your calculations. This is based on a five-year proposal; formulas would need to be adjusted for different proposal timeframes. Also, note that you will end up with rounding differences when calculating in Excel versus using manual PV factor tables. Most tables are based on PV factors to 3 decimal places, while Excel will use 9 decimal places.

A	B	C	D	E	F	G	Notes
1 Year	0	1	2	3	4	5	a
2 Annual cash flows							
3 Purchase equipment	-300 000						b
4 Modifications	-50 000						b
5 Revenues (cash collected)	100 000	100 000	100 000	100 000	100 000		c
6 Cash operating costs	-10 000	-10 000	-10 000	-10 000	-10 000		b
7 Labour savings	5 000	10 000	15 000	20 000	25 000		c
8 Maintenance costs	-1 000	-1 000	-1 000				b
9 Salvage value					20 000		b
10 Tax payment	0	0	0	0	0		b
11 Net cash flows	-350 000	94 000	99 000	104 000	110 000	135 000	e
12 PV factor	1	0.909091	0.826446	0.751315	0.683013	0.620921	f
13 PV amount	-350 000	85 454.55	81 818.18	78 136.74	75 131.48	83 824.38	g
14 Net present value	54 365.33						h, i
15							
16 Discount rate	10%						d

Notes:

- a Set up years as numbers only in this row.
- b Ensure cash outflows or costs are entered as negative amounts.
- c Ensure cash inflows or savings are entered as positive amounts.
- d Enter the company discount rate in cell B16
- e To calculate the net cashflows for each year, sum all the cash inflows and outflows. For example, for year zero (cell B11) use the formula '=sum(B3:B10)'. Copy this formula across for years 1 to 5.
- f Calculate the PV factor based on year and discount rate. This is using the formula seen in section 7.8. For example, for year 1 (cell C12) the formula would be '=1/(1+\$B16)^C1', where B16 is the discount rate and C1 is the year. You can then copy this formula across for all years. So the formula in year 5 (cell G12) would be '=1/(1+\$B16)^G1'. Note for year 0, the PV factor is 1 (cell B12).
- g Calculate the PV amount by multiplying the net cashflows by the PV factor for each year. For example, the formula in year 0 (cell B13) would be '=B11*B12'. Copy this across for years 1 to 5.
- h Sum all the PV amounts. For example, in cell B14 use the formula '=sum(B13:G13)'.
- i NPV can be calculated without steps f and g by using the formula '=B11+NPV(B16, C11:G11)', where B11 is the net cash flow for year 0, B16 is the discount rate and C11 to G11 are the net cashflows for years 1 to 5.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Cash flow statements

Given the following information:

	\$
Cash sales	300
Cash collected from accounts receivable	250
Dividends received	130
Cash paid to accounts payable	290
Proceeds of sale of investments	330
Issue of shares	450
Loan obtained	360
Tax paid	470
Wages paid to employees	410
Share buy-back	490
Purchase of property, plant and equipment for cash	120

Required:

- 1 What was the cash flow from operating activities?
- 2 What was the cash flow from investing activities?
- 3 What was the cash flow from financing activities?

PRACTICE PROBLEM B

Revenue, expenses and cash flow from operations

Peakhurst Ltd provides one-day training programs in financial management. It charges \$7000 per day. The following events occurred for the company in the month of June 2021.

- a Received \$62 000 from accounts receivable for sales in previous months.
- b Paid two months' rent of \$48 000 covering 1 June 2021 to 31 July 2021.
- c Received orders for 80 days' training during the month. Delivered 60 days of the training during the month and received payment for 30 of these days.
- d Signed a contract to design a special program for XYZ Ltd at a price of \$70 000. Design will begin in July. Received a \$6000 deposit.
- e Paid \$600 000 for new equipment on 1 June. The equipment has a life of 10 years.
- f Paid wages during the period of \$60 000 with accrued wages of \$10 000 owing at the end of the month.
- g Declared and paid a dividend of \$50 000.

Required:

- 1 Determine total revenue for the month of June 2021.
- 2 List all expenses for the month of June 2021 (including dollar amounts).
- 3 Determine cash flow from operations for June 2021.

PRACTICE PROBLEM C

Cash budget

Given the following information, prepare a cash budget for June 2022. The records of the company show the following:

- Cash balance on June 1 is \$100 000.
- Expected sales for June comprise cash sales of \$2 000 000 and credit sales of \$4 000 000.
- Actual sales for April and May are as follows:

	April \$	May \$
Cash sales	1 000 000	1 500 000
Credit sales	<u>2 500 000</u>	<u>3 500 000</u>
Total sales	3 500 000	5 000 000

- Credit sales are collected over a three-month period: 50 per cent in the month of sale, 30 per cent in the second month, and 15 per cent in the third month. The remaining sales are uncollectable.
- Inventory purchases average 60 per cent of a month's total sales. Of those purchases, 40 per cent are paid for in the month of purchase. The remaining 60 per cent are paid for in the following month.
- Salaries and wages total \$800 000 a month.
- Rent is \$100 000 per month.
- Taxes to be paid in June are \$500 000.
- There is no minimum cash balance required.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 Why is managing cash flow important?
- 2 Can a company have a good net profit and little cash generated from operations in the same year? If it can, how does this happen?
- 3 Why is cash generated from operations usually larger than net profit?
- 4 Provide three examples of transactions that will affect:
 - a cash flow from operations
 - b cash flows from financing activities
 - c cash flows from investing activities.
- 5 How can cash flow from operations be negative when net profit is positive?
- 6 Companies are required to classify cash flows as either operating, investing or financing. Which of these three categories is most likely to have a net cash outflow over a number of years? Briefly explain your answer.
- 7 A senior financial executive for a large public company remarked to a stock market analyst:

I don't know why you people worry so much about what is in our statement of cash flows. Managing cash flow is our responsibility as managers; it involves paying close attention to cash on a daily basis. Why don't you pay attention to our profit and just forget about cash flow? We'll look after that!

Respond to the executive's comments. You do not have to agree or disagree entirely.

- 8 A business commentator made the following remark during a discussion of the financial performance of a large, but struggling, company:

These accountants spend lots of money to create complicated financial statements, especially income statements, which use what they call 'accrual' accounting. Then they take away all the accruals and supposedly return us to the cash profit number ('cash flow from operations') we would have had anyway, if they hadn't bothered with accrual accounting in the first place! Why don't they just give us the cash profit and leave it at that?

If you were an accountant involved in the discussion, and everyone turned to you to hear your response to the commentator, what would you say?

PROBLEMS

PROBLEM 7.1

Classifying cash flows

The listed items were taken from a listed company's statement of cash flows. Classify each item as operating, investing or financing. For each item state whether cash is increasing or decreasing.

- 1 Cash received from issue of share capital
- 2 Cash received from customers
- 3 Purchases of property, plant and equipment
- 4 Cash paid to suppliers
- 5 Cash paid to employees
- 6 Cash borrowed from the bank
- 7 Cash proceeds received from sale of investment in another company
- 8 Income taxes paid
- 9 Repayment of loan principal
- 10 Dividend paid

PROBLEM 7.2

Cash flow analysis from account information

Prepare a statement of cash flows for Sutherland Limited from the following cash account information.

	\$		\$
Cash, beginning of year	78 840	Proceeds from sale of old equipment	7 000
Cash, end of year	93 620	Repayments on borrowings	80 500
Borrowed from the bank	70 000	Equipment purchased (\$5000 still owing)	49 000
Cash expenses	8 920	Dividends paid	20 000
Cash sales	31 610	Employee wages paid	238 530
Collections on accounts receivable	797 640	Income tax paid	14 920
Ordinary shares issued	110 000	Land purchased for cash	81 000
Depreciation for the year	20 000	Payments to suppliers	513 600

PROBLEM 7.3

Effect of transactions on cash flows

The financial year for Gamma Limited ends on 30 June 2022. Management has asked you what effect each of the following June transactions will have on net profit before tax, cash flow from operations, cash flow from investing and cash flow from financing for the year ended 30 June 2022:

- 1 Sent invoices for \$40 000 to customers during June for work carried out in June; \$19 000 of this had been collected by year-end.

- 2 Borrowed \$300 000 from the bank on 10 June, with principal and interest repayable in six months. Accrued interest at 30 June is \$2500.
- 3 Paid salaries for the month of \$80 000, with \$5000 in wages owing at year-end.
- 4 Received \$30 000 deposit on a job that will be carried out in July 2022.
- 5 Paid accounts payable of \$35 000 which was outstanding at 31 May 2022.
- 6 Sold old equipment for \$20 000. The equipment originally cost \$300 000 with accumulated depreciation at the time of sale of \$250 000.
- 7 Purchased new equipment on 20 June 2022 for \$220 000 cash. Depreciation on this equipment for June 2022 amounted to \$900.
- 8 Declared and paid dividends of \$180 000 in June 2022.

PROBLEM 7.4

Cash flow statement

The following transactions pertain to LMN Ltd for December 2021.

- a The company issued shares with shareholders investing \$250 000 in cash.
- b Purchased \$43 000 worth of inventory on credit.
- c Rent of \$8000 was paid.
- d Made credit sales of \$110 000.
- e Received \$2000 bill from an advertising campaign to promote a new product. This amount will be paid in January.
- f Inventory was purchased for \$27 000 cash.
- g Paid \$30 000 of accounts payable.
- h Wages of \$24 000 were paid.
- i Received \$45 000 from accounts receivable.
- j Purchased new machinery at a cost of \$9000 and paid cash.
- k Owed employees \$3500 in wages at the end of December.
- l Depreciation on the new equipment equalled \$1000.
- m Interest of \$6000 is owed by the bank at the end of December. It will be received in January 2022.
- n Received \$8000 from a client. Services to the client will be provided in January.
- o Paid a dividend of \$20 000.

Required:

- 1 List the name and dollar amounts of all cash flows under the headings of (a) operating, (b) investing and (c) financing for the month of December 2021.
- 2 Comment on the cash flow from operations for the month and the potential problems it creates.

PROBLEM 7.5

Interpreting a cash flow statement

Using the two years' cash flow information presented, outline the three most important things you learn about Yellow Ltd.

YELLOW LTD
CASH FLOW STATEMENTS OVER TWO YEARS

	2021 \$000	2020 \$000
Cash flows from operating activities		
Cash receipts from customers	324	300
Cash payments to suppliers & employees	(415)	(280)
Interest paid	(35)	(10)
Net cash flow from operating activities	(126)	(10)

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Cash flows from investing activities		
Proceeds from sale of PPE	10	5
Payments for PPE	(154)	(145)
Net cash flow from investing activities	(144)	(140)
Cash flows from financing activities		
Proceeds from the issue of shares	0	60
Increase in borrowings	220	110
Dividends paid	0	(25)
Net cash flow from financing activities	220	145
Net increase (decrease) in cash held	(50)	(5)
Cash at the beginning of the year	54	59
Cash at the end of the year	4	54

PROBLEM 7.6

Interpreting a statement of cash flows

Summarised cash flow statements for the year ended 30 June 2022.

	Company A \$m	Company B \$m	Company C \$m
Cash flow from operations	(100)	100	300
Cash flow from investing	(201)	(201)	(201)
Cash flow from financing	<u>300</u>	<u>100</u>	<u>(100)</u>
Change in cash flow	(1)	(1)	(1)

Note that all cash flow from financing relates to borrowings and that no shares were issued or dividends paid.

Comment on the cash flow of the three companies.

PROBLEM 7.7

Interpreting a statement of cash flows

COMO LIMITED
STATEMENTS OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2022

	Consolidated	
	2022 \$000	2021 \$000
Cash flows provided by operating activities:		
Cash receipts from customers	753 647	666 154
Cash payments to suppliers and employees	(565 244)	(475 441)
Dividends received	–	1 019
Interest received	6 316	4 312
Interest paid	(27 007)	(22 015)
Income taxes paid	<u>(49 732)</u>	<u>(19 372)</u>
Net cash provided by operating activities	<u>117 980</u>	<u>154 657</u>

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Cash flows used in investing activities:		
Purchase of property, plant and equipment	(44 458)	(32 070)
Purchase of/proceeds from sale of businesses	(2 803)	(142 303)
Proceeds from sale of property, plant and equipment	<u>326</u>	<u>417</u>
Net cash used in investing activities	<u>(46 935)</u>	<u>(173 956)</u>
Cash flows provided by/(used in) financing activities:		
Repayment of borrowings	(126 500)	(1 919)
Dividends paid	(45 330)	(36 204)
Proceeds from borrowings	<u>94 581</u>	<u>96 500</u>
Net cash provided by/(used in) financing activities	<u>(77 249)</u>	<u>58 377</u>
Net increase/(decrease) in cash	<u>6 204</u>	<u>39 078</u>
Cash at the beginning of the financial year	<u>122 946</u>	<u>83 868</u>
Cash at the end of the financial year	<u>116 742</u>	<u>122 946</u>

- 1 Explain the main differences in cash flows between 2021 and 2022.
- 2 Comment on Como's cash flow position in 2022.

PROBLEM 7.8

Interpreting cash flows

Marlot Limited reported the following information on cash flow for the year 2022.

\$	
Cash flows from operations	(800 000)
Cash flows from investing activities	200 000
Cash flows from financing activities	<u>601 000</u>
Net cash flows	1 000
Opening cash balance	<u>260 000</u>
Closing cash balance	261 000

- 1 Does Marlot Limited appear to be expanding or contracting its operations?
- 2 Describe the activities that could explain the increases in cash flow for financing activities.
- 3 Using only the cash flow information presented, make an assessment of the condition of Marlot Limited. Is it growing, mature/stable or declining? State reasons for your answer (including any assumptions you make).

PROBLEM 7.9

Cash flow statement

The following transactions occurred during the year ending 30 June 2021 for RST Limited.

- a Borrow \$100 000 from the bank with the loan due for repayment in two years (ignore interest).
- b Purchase inventory on credit for \$75 000.
- c Paid \$160 000 for an insurance policy on 30 June 2021 (the policy covers the period 1 July 2021–30 June 2022).
- d Received a deposit of \$20 000 from a customer to supply services in the next financial year.
- e Depreciation expense for the year is \$80 000.
- f The company collects \$10 000 from a customer who had previously purchased merchandise on credit.
- g The company sells a motor vehicle for \$5000 cash. The carrying amount of the motor vehicle at the time of sale is \$9000.
- h Issue share capital of \$200 000.

Required:

Calculate the following:

- 1 cash flow from operations
- 2 cash flow from investing
- 3 cash flow from financing.

PROBLEM 7.10*Interpreting a cash flow statement*

Adelaide Airways Ltd and Perth Express Ltd are two companies, similar in size, in the commuter airline business. They fly passengers from Adelaide and Perth to smaller cities in their states.

**ADELAIDE AIRWAYS LTD
STATEMENT OF CASH FLOWS FOR THE YEARS ENDING 30 SEPTEMBER 2022 AND 2021**

	2022 \$	2021 \$
Cash flows from operating activities		
Receipts from customers	580 000	561 000
Payments to suppliers and employees	(530 000)	(430 000)
Net cash provided by operating activities	<u>17 000</u>	<u>131 000</u>
Cash flows from investing activities		
Purchase of equipment	(120 000)	(91 000)
Proceeds from sale of equipment	118 000	39 000
Proceeds from sale of investments	52 000	4 000
Net cash provided by (used in) investing activities	<u>50 000</u>	<u>(48 000)</u>
Cash flows from financing activities		
Proceeds from short-term loans	122 000	143 000
Repayment of short-term loans	(179 000)	(134 000)
Payment of dividends	(45 000)	(64 000)
Net cash used in financing activities	<u>(102 000)</u>	<u>(55 000)</u>
Net increase (decrease) in cash	(35 000)	28 000
Cash balance at the beginning of the year	<u>131 000</u>	<u>103 000</u>
Cash balance at the end of the year	<u>96 000</u>	<u>131 000</u>

**PERTH EXPRESS LTD
STATEMENT OF CASH FLOWS FOR THE YEARS ENDING 30 SEPTEMBER 2022 AND 2021**

	2022 \$	2021 \$
Cash flows from operating activities		
Receipts from customers	776 000	632 000
Payments to suppliers and employees	(528 000)	(439 000)
Net cash provided by operating activities	<u>248 000</u>	<u>193 000</u>

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Cash flows from investing activities		
Purchase of equipment	(303 000)	(453 000)
Proceeds from sale of equipment	46 000	39 000
Proceeds from sale of investments	0	33 000
Net cash used in investing activities	<u>(257 000)</u>	<u>(381 000)</u>
Cash flows from financing activities		
Proceeds from short-term loans	43 000	35 000
Proceeds from long-term loans	131 000	83 000
Repayment of short-term loans	<u>(66 000)</u>	<u>(18 000)</u>
Net cash provided by financing activities	<u>108 000</u>	<u>100 000</u>
Net increase (decrease) in cash	99 000	(88 000)
Cash balance at the beginning of the year	<u>116 000</u>	<u>204 000</u>
Cash balance at the end of the year	<u>215 000</u>	<u>116 000</u>

Required:

- 1 Why is the additional information contained in the statement of cash flows important when evaluating a company's performance?
- 2 Based on an examination of their statements of cash flows, discuss the relative strengths and weaknesses of Adelaide Airways and Perth Express.

PROBLEM 7.11

Cash flow cycle

Consider the following three companies, X, Y and Z.

	Days in payables	Days in inventory	Days in receivables
X	30	50	1
Y	40	80	10
Z	30	3	30

Required:

- 1 Calculate the cash flow cycle for each company.
- 2 Discuss the possible types of business each company could be.
- 3 Comment on the positive and negative aspects of their cash flow cycles.

PROBLEM 7.12

Cash flow management

You are attending a meeting at your new employer, a small wholesaler of home gymnasium equipment. One of the presentations includes a PowerPoint showing the company's current ratio had increased from 1.5:1 to 2.6:1 over the last three years and the quick ratio has increased from 0.6:1 to 1.3:1. The presenter starts talking about the importance of cash flow and liquidity and concludes how delighted they are with the improvements in these ratios and, in particular, the fact that the current ratio is now 2.6:1, which he considers really high. He admits there was concern about the quick ratio three years ago but it has increased significantly to be at a very comfortable level.

On the other hand, the manager refers to the fact that the company's cash flow cycle is starting to extend, moving from 71 days to 83 days to 101 days across the three years. He notes that this is 'out of control', as the accounts payable have cut the repayment period from 30 days to 14 days. Days in inventory have increased both because of increased competition and because 'our customers get very upset if we are out of stock on any item so we have increased inventory on hand'. Finally, the manager says 'while we have kept our

good faith with our customers by giving them 60 days to pay their invoices, some are taking even longer. Eventually they all pay so we do not want to lose these customers by changing their terms.'

Required:

- 1 What do you suggest is the reason for the improved current and quick ratios? What implications does it have for liquidity?
- 2 What is the problem with the increased cash flow cycle?
- 3 What can the company do to decrease the cash flow cycle and what will be the benefits and drawbacks of doing this?

PROBLEM 7.13

Budgeted cash collections; budgeted cash payments

Information pertaining to STW Ltd's sales revenue is presented as follows.

	November 2021 (Actual) \$	December 2021 (Budget) \$	January 2022 (Budget) \$
Cash sales	80 000	100 000	60 000
Credit sales	<u>240 000</u>	<u>360 000</u>	<u>180 000</u>
Total sales	<u>320 000</u>	<u>460 000</u>	<u>240 000</u>

Management estimates that 5 per cent of credit sales are uncollectable. Of the credit sales that are collectable, 60 per cent are collected in the month of sale and the remainder in the month following the sale. Purchases of inventory each month are 70 per cent of the next month's projected total sales. All purchases of inventory are on account; 25 per cent are paid in the month of purchase, and the remainder are paid in the month following the purchase.

Required:

- 1 What are STW Ltd's budgeted cash collections in December 2021 from November 2021 credit sales?
- 2 What are total budgeted cash receipts in January 2022?
- 3 What is STW Ltd's budgeting for total cash payments in December 2021 for inventory purchases?

PROBLEM 7.14

Cash collections and disbursements

Consider the following information for XY Limited:

Month	Sales \$	Purchases \$
July	30 000	10 000
August	34 000	12 000
September	38 000	14 000
October	42 000	16 000
November	48 000	18 000
December	60 000	20 000

Cash is collected from customers in the following manner:

Month of sale (2% cash discount)	30%
Month following sale	50%
Two months following sale	15%
Amount uncollectable	5%

In the month of purchase, 40 per cent of purchases are paid for in cash, and the balance is paid the following month.

Required:

- 1 What are the cash collections for October?
- 2 What are the cash collections for November?
- 3 What are the cash disbursements for October?
- 4 What are the cash disbursements for November?

PROBLEM 7.15

Cash budgeting

The controller of GH Company is gathering data to prepare the cash budget for April 2022. He plans to develop the budget from the following information.

- a Of all sales, 30 per cent are cash sales.
- b Of credit sales, 60 per cent are collected within the month of sale. Half of the credit sales collected within the month receive a 2 per cent cash discount (for accounts paid within 10 days). Twenty per cent of credit sales are collected in the following month; remaining credit sales are collected the month thereafter. There are virtually no bad debts.
- c Sales for the first six months of the year are given as follows. (The first three months are actual sales and the last three months are estimated sales.)

Sales	
January	\$230 000
February	300 000
March	500 000
April	565 000
May	600 000
June	567 000

- d The company sells all that it produces each month. The cost of raw materials equals 20 per cent of each sales dollar. The company requires a monthly ending inventory equal to the coming month's production requirements. Of raw materials purchases, 50 per cent are paid for in the month of purchase. The remaining 50 per cent are paid for in the following month.
- e Wages total \$50 000 each month and are paid in the month of incurrence.
- f Budgeted monthly operating expenses total \$168 000, of which \$22 000 is depreciation and \$3000 is expiration of prepaid insurance. (The annual premium of \$36 000 is paid on 1 January.)
- g Dividends of \$65 000, declared on 31 March will be paid on 15 April.
- h Old equipment will be sold for \$13 000 on 3 April.
- i On 10 April new equipment will be purchased for \$80 000.
- j The company maintains a minimum cash balance of \$10 000.
- k The cash balance on 1 April is \$12 500.

Required:

Prepare a cash budget for April. Give a supporting schedule that details the cash collections from sales.

PROBLEM 7.16

Basic ideas of present value analysis

- 1 Explain what the 'time value of money' or 'present value' concept is all about. Why would business people be sensitive to it?
- 2 Calculate the present value of each of the following:
 - a \$1000 to be received a year from now. If it were on hand now, it would be invested at 10 per cent interest.
 - b \$1000 to be received at the end of each of the next three years. The opportunity cost of interest, or the cost of capital in this case, is 12 per cent.
- 3 Answer part 2b again but assume a rate of 10 per cent. Why is the present value higher when the rate is lower?

PROBLEM 7.17

Present value analysis – buy or lease a truck?

Speedy Trucking is trying to decide whether it should buy a new truck for its business or lease the truck from another company. If Speedy decides to buy the truck, it must pay \$140 000 cash immediately, and the truck is expected to last for five years. At the end of the five years, the truck will have no remaining value and will be disposed of. If Speedy decides to lease the truck, it must pay \$30 000 at the end of each year for five years, at which point the truck must be returned to the leasing company. Assume zero taxes.

Required:

- 1 If the current market interest rate (which Speedy has to pay to borrow the money) is 10 per cent, should Speedy lease or buy the truck?
- 2 Suppose Speedy discovers that, if the truck were bought, it could be sold at the end of the five years for \$35 000. Would your answer to part 1 change?
- 3 Identify two important assumptions made in your analyses and explain why those assumptions are important.

PROBLEM 7.18

NPV calculations

Apt Ltd is considering the purchase of new equipment. The new equipment will cost \$400 000 and have an estimated life of three years. Modifications to the equipment will cost an additional \$50 000. There is no expected salvage value at the end of three years. It has been estimated that there will be increased cash revenue of \$300 000 per year but increased yearly cash operating costs of \$105 000 in the first two years and \$40 000 in year 3. However, by purchasing the new equipment, labour costs will reduce by \$45 000 per year for two years. In addition, it will need to use equipment that is surplus to its current requirements and is presently leased to another firm for \$5000 per year.

For tax purposes, the equipment would be depreciated using the straight line method over three years based on cost. The company's required rate of return is 8 per cent.

Required:

Calculate the net present value of the project assuming the company does not pay tax.

PROBLEM 7.19

Capital investment analysis

ABC Division is considering an investment proposal to purchase new equipment. The following data has been gathered:

Purchase of equipment	\$200 000
Modifications to equipment	\$55 000

The duration of the contract is three years. The following revenue and cost estimates have been made:

	Revenue per year	Cash operating costs per year
Years 1 to 3	\$190 000	\$90 000

- The new machine is to be depreciated over the life of the contract.
- Labour savings of \$30 000 per year are expected.
- ABC has an existing machine that can be sold for its book value of \$21 000 at the time of purchasing the new machine.
- Additional tax payable each year has been estimated to be \$15 000.

Required:

Assuming the company's required rate of return is 10 per cent, calculate the NPV of the project.

PROBLEM 7.20

Using Excel to calculate NPV

Alpha Division is considering an investment proposal to purchase new equipment. The following data has been gathered. The cost to purchase the equipment is \$500 000.

The equipment will have an expected life of three years and a disposal value at the end of the three years of \$60 000. The company expects to sell the same amount of units per year but for a higher price with the result that there will be additional sales revenue of \$300 000 per year for the first two years and \$200 000 for the third year. Cash operating costs will increase by \$30 000 per year.

Required:

- 1 Assuming a zero tax rate and the company's discount rate is 8%, calculate the NPV of the project.
- 2 Assuming a zero tax rate and the company's discount is 10%, calculate the NPV of the project.
- 3 Assuming a discount rate of 8%, what is the NPV for each of the following alternatives (treat each alternative independently):
 - a The equipment cost is changed to \$600 000.
 - b The equipment now requires modifications in year 0 of \$50 000.
 - c Cash operating costs increased by an additional \$50 000 per year (i.e. total of \$80 000 per year).

CASES

CASE 7A

Woolworths Limited

Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 What are the main components of cash flows from operating activities?
- 2 What are the main components of cash flows from investing activities?
- 3 What are the main components of cash flows from financing activities?
- 4 How does the cash flow statement relate back to the balance sheet?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

7A $\$50\,000 + \$30\,000 - \$20\,000 - \$15\,000 - \$35\,000 = \$10\,000$

7B $\$100\,000 + \$170\,000 = \$270\,000$

- 7C**
- (i) Operating cash flow
 - (ii) Financing cash flow
 - (iii) Financing cash flow
 - (iv) Operating cash flow
 - (v) Operating cash flow
 - (vi) Investing cash flow
 - (vii) Financing cash flow
 - (viii) Financing cash flow

7D (i) $40 + 40 - 30 = 50$ days.

- (ii)**
- a reduce days in inventory but the potential cost is loss of some sales as it is more likely to not have some lines of inventory on hand when required by the customer.
 - b reduce days in receivables back closer to 30 days. The problem may be that some customers could go to other suppliers.

7E (i) $30\% \times 640\,000 = 192\,000$

$$75\% \times 70\% \times 640\,000 = 336\,000$$

$$20\% \times 70\% \times 440\,000 = \underline{61\,600}$$

$\$589\,600$

(ii) $30\% \times 820\,000 = 246\,000$

$$70\% \times 75\% \times 820\,000 = 430\,000$$

$$20\% \times 70\% \times 640\,000 = \underline{89\,600}$$

$766\,100$

7F (i) The NPV would be reduced by $(\$10\,000 - \$6000) \times 0.621 = \$2484$.

(ii) NPV would decrease by $\$50\,000 \times (0.909 - 0.683) = \$11\,300$.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

1 $300 + 250 + 130 - 290 - 470 - 410 = (490)$

2 $330 - 120 = 210$

3 $450 + 360 - 490 = 320$

PRACTICE PROBLEM B

1 Total revenue $(60 \times \$7000) = \$420\,000$

2 Expenses:

Rent $(1/2 \times \$48\,000)$	24 000
Wages $(\$60\,000 + \$10\,000)$	70 000
Depreciation $(\$600\,000/10 \times 1/12)$	<u>5 000</u>
	99 000

3 Cash flow from operations:

From accounts receivable	62 000
Paid rent	(48 000)
Received payment for 30 days training	210 000
Received deposit	6 000
Paid wages	<u>(60 000)</u>
	170 000

PRACTICE PROBLEM C

CASH BUDGET
FOR THE MONTH OF JUNE 2022

	\$	\$
Beginning cash balance	100 000	
Collections:		
Cash sales	2 000 000	
Credit sales:		
Current month ($\$4\ 000\ 000 \times 50\%$)	2 000 000	
May credit sales ($\$3\ 500\ 000 \times 30\%$)	1 050 000	
April credit sales ($\$2\ 500\ 000 \times 15\%$)	<u>375 000</u>	
Total cash available	5 525 000	
Less disbursements:		
Inventory purchases:		
Current month ($\$6\ 000\ 000 \times 60\% \times 40\%$)	1 440 000	
Prior month ($\$5\ 000\ 000 \times 60\% \times 60\%$)	1 800 000	
Salaries and wages	800 000	
Rent	100 000	
Taxes	<u>500 000</u>	
Total disbursements	<u>4 640 000</u>	
Excess of cash available over needs	<u>885 000</u>	



APPENDIX TO CHAPTER 7

Future cash flows: present value analysis

A7.1 Future cash flows

Earlier in this chapter you saw that cash flow is important to a company. Assessing cash flow is a significant part of the analysis of a company's financial performance and position and, consequently, cash flow statements have become one of the three key financial statements, along with the balance sheet and income statement. Cash is also considered important by capital markets, which are concerned with the company's expected ability to generate returns in the future, especially cash returns that can be used to pay dividends or reinvest in the company. Many financial contracts, such as for management compensation arrangements, focus on future financial performance. Generally, management should be looking to the future and trying to combine its asset acquisition, borrowing and profit-generation strategies to produce a good future return for the owners.

An important way of thinking about future performance, especially future cash flows, is present value (PV) or discounted cash flow (DCF) analysis. Future cash flows are not the same as present ones, because you have to wait for them and, therefore, you lose interest or other returns you could have earned if you had had the cash sooner.

Detailed PV or DCF techniques are examined in management accounting and finance courses. In this section, the basic ideas will be outlined to give you the tools to complete some capital investment decisions in this chapter and the ideas are helpful for Chapter 14 on liabilities.

A7.2 Interest and the time value of money

It is permissible – even expected – that the owner of capital should charge a person who wants to use that capital a fee for that use. The fee is called 'interest' and is computed by applying a specified percentage rate to the amount lent, which can be referred to as either the investment or the principal. For example, an 8 per cent interest rate on a \$200 loan would produce annual interest of \$16 ($\200×0.08). The existence of interest, which builds up as time passes, gives money a time value.

Here are some simple formulas you may already know (P = principal or investment, i = interest rate):

$$\text{Annual interest} = P \times i$$

$$\text{Amount due at the end of one year} = P(1 + i)$$

$$\text{Amount due after } n \text{ years; with annual compounding, if no payments at all are made} = P(1 + i)^n$$

Suppose a loan provides for repayment of the principal plus interest after several years, with no payments in the meantime. If the interest is compounded, which is normally the case, that means interest builds up on

the unpaid interest as well as on the unpaid principal. In order to know how this works, you need to know how frequently interest compounds. Do you get interest on the interest:

- as soon as any interest arises ('continuous compounding')?
- after a day's interest has been added ('daily compounding')?
- after a month's interest has been added ('monthly compounding')?
- only after a year's interest has been added ('annual compounding')?

Here's an example of annual compounding. We have the same \$200, 8 per cent loan as previously, which is to be repaid in five years with annual compounding. We can then calculate the amount that the loan has built up to at the end of each year (its 'future value', FV) as follows:

Year	FV at beginning of year \$	Annual interest at 8% \$	FV at end of year \$
1	200.00	16.00	216.00
2	216.00	17.28	233.28
3	233.28	18.66	251.94
4	251.94	20.16	272.10
5	272.10	21.77	293.87

You can see that the FV increases every year. Using the third formula supplied, we can calculate the FV at the end of any year:

- End of year 3: $FV = P(1 + i)^n$
 $= \$200(1 + 0.08)^3$
 $= \$251.94$
- End of year 5: $FV = \$200(1 + 0.08)^5$
 $= \$293.87$

Interest and present value

The concept of interest can be 'turned on its head' by considering what you lose by waiting some period of time for your money, or, putting it another way, what a future payment is worth in present terms if you assume your money should earn interest between now and when you get it back.

Suppose someone promises to give you \$100 a year from now. If you were given the money now instead, you'd be earning 9 per cent interest on it. Therefore, if you'd had some amount of P now and earned 9 per cent on it, you'd be in the same position as you will be after waiting the year. Using the second formula given, $\$100 = P(1 + 0.09)$, where P is the amount you could have earned interest on.

Solving for P we get $P = \$100/(1.09) = \91.74 . If you had \$91.74, you could have invested it at 9 per cent and ended up with \$100 ($\$91.74 + [0.09 \times \$91.74] = \100) at the end of the year.

We say that \$91.74 is the present value of \$100 received after waiting one year, 'discounted at 9 per cent'. This present value concept is another way of thinking of the time value of money: it reminds us that as long as we wait for cash that could have earned interest, we lose the interest that we could have earned. This idea is referred to as an 'opportunity cost', which you may recall from introductory economics. As long as the interest rate is greater than zero, present value is less than the actual future amount of cash that will be received.

Analogous to the previous interest formulas are the following present value formulas (where C = future cash flow, and i = interest rate):

$$\text{Present value waiting one year} = \frac{C}{1+i}$$

$$\text{Present value waiting } n \text{ years with no payments in the meantime, interest compounded annually} = \frac{C}{(1+i)^n}$$

$$\text{Combining these two, present value of a constant cash payment over } n \text{ years, interest compounded annually} = \frac{C}{i} \left(1 - \frac{1}{(1+i)^n} \right)$$

Therefore, the present value of \$1000 received three years from now, discounted at an opportunity cost interest rate of 12 per cent, would be \$711.78 (this is \$1000 divided by $(1.12)^3$). The phrase 'opportunity cost' is often used because, by waiting three years for the \$1000, you lose the opportunity to invest your money at 12 per cent in the meantime.

Here's an example of present value calculations. A company is considering an investment that will cost \$10 000 and will return \$2400 at the end of each year for five years. This looks good: 24 per cent of the investment cost received each year, a total of \$12 000 back on the \$10 000 invested. To make the investment, the company will have to borrow at an interest rate of 7 per cent. Should it go ahead with the investment?

Before we do the calculations, note three things about problems like this:

- 1 What we are trying to determine is if the money coming in is equivalent to a **cost of capital** of 7 per cent. If the company has to raise its money at 7 per cent, it will want the investments it makes to return at least that. A greater rate of return would be desirable, otherwise there would be little point in investing, but 7 per cent is the minimum acceptable return.
- 2 The idea of **present value analysis** is to take the future returns and subtract the 7 per cent that the company has to pay on its borrowing, to determine if, after considering the borrowing cost, the returns equal the \$10 000 that has to be invested. *Is the present value of the future cash flows equal to the present cost outlay that has to be made to get those flows?*
- 3 The 24 per cent quoted previously is irrelevant to the analysis. It compares the annual return to the investment cost, but it does not consider the interest cost of waiting several years for some of that return. The whole idea of present value analysis is to build that interest cost, the time value of money, into the analysis.

Here's the present value analysis:

- Using the second present value formula:

	\$
PV of first year's return is \$2400/(1.07) ¹	2242.99
PV of second year's return is \$2400/(1.07) ²	2096.25
PV of third year's return is \$2400/(1.07) ³	1959.11
PV of fourth year's return is \$2400/(1.07) ⁴	1830.95
PV of fifth year's return is \$2400/(1.07) ⁵	<u>1711.17</u>
Total PV	<u>9840.47</u>

- Since the annual flows are constant, the third present value formula used previously could have been used instead:

$$PV = (2400/0.07)(1-[1/1.07]^5) = 9840.48$$

This is the same answer as could have been obtained using the second present value formula. We can draw the needed conclusion from this, and also see the effects of waiting for returns:

- The conclusion is that the investment is not a good idea. It will cost \$10 000, but after calculating the interest cost of waiting for the money to be returned, the present value of the \$12 000 returned is only \$9840. Therefore, the investment is returning less than the 7 per cent rate the company has to pay to finance it. It's close, but still not attractive.
- From the annual calculations, you can see that the present value of the \$2400 is smaller the longer we wait for it. The \$2400 received after one year has a PV of \$2243, but the \$2400 received after four years has a PV of \$1831. This is a necessary result: the longer the wait, the lower the PV, because the greater is the amount of interest assumed included in the cash flow and, therefore, the lower the residual PV.

8



Extensions to financial reporting: assets, liabilities, capital markets, contracts and accounting standards

ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** describe the content of the Framework for the preparation and presentation of financial statements (8.1)
- LO2** define assets, liabilities and equity, and determine whether certain items meet these definitions (8.1)
- LO3** determine when an asset or liability is to be recognised (8.1)
- LO4** understand the alternative methods for valuation of assets and liabilities (8.2)
- LO5** describe the way in which capital markets operate and describe the role of financial accounting information in capital markets (8.3)
- LO6** explain what is meant by an efficient capital market (8.3)
- LO7** explain the implications for financial accounting for business contract arrangements (8.4) and for managers (8.5).

CHAPTER OVERVIEW

This is the last of the eight chapters introducing the financial statements. It has few numbers. (Perhaps the break from numbers will help the previous material settle into your understanding!) Instead, this chapter focuses on principles that govern the way accountants assemble the numbers. We have seen that accrual accounting and even transaction recording require judgement and managerial decisions. Now we will delve into the concepts that guide accountants in undertaking accounting.

Some of these ideas were introduced in Chapters 1 and 2 so that you could better understand what are assets and liabilities. With the knowledge gained in these earlier chapters, you are now in a better situation to understand more. In fact, a few points are repeated in this chapter to allow instructors more flexibility as to when they wish to cover these topics.

Both doing accounting and using accounting information require a solid conceptual understanding, in addition to being able to work with the numbers. Accounting information doesn't just appear; it follows accepted standards of preparation, format and disclosure, or should follow them. Accounting standards and principles are not just 'theory': they are a set of very practical guidelines that accountants and managers follow every day. This chapter is a foundation for succeeding chapters, which get into the specifics of doing accounting and making accounting choices, and use the principles from this chapter continuously.

All financial managers need an understanding of these frameworks to guide their decisions. For other managers, the knowledge of the frameworks will help them understand the constraints accountants work under in handling difficult valuation, revenue recognition and expense recognition judgements. Also, we need to know about the consequences of these judgements including how the numbers are used in capital markets and contractual arrangements.

We start with a coverage of the main concepts contained in the AASB's *Framework for the Preparation and Presentation of Financial Statements*.

8.1 Framework for the preparation and presentation of financial statements

LO1 The Framework issued by the AASB sets out the concepts that underlie the preparation of financial reports for external users. The Framework includes coverage of:

- the objectives of financial reports
- the assumptions underlying financial reports
- the qualitative characteristics that determine the usefulness of financial reports
- the definition of the elements from which financial reports are constructed: assets, liabilities, equity, income and expenses
- recognition and measurement of the elements of financial statements.

Some of these items will sound familiar. For example, in Chapter 1 we discussed the basic qualitative characteristics that determine the usefulness of financial reports, and in Chapter 2 we introduced you to definitions of the key elements of the financial statements, including assets and liabilities. These concepts will be expanded on here before we take a more detailed look at the various balance sheet, income statement and cash flow elements in the later chapters.

The Framework makes a distinction between general purpose financial statements and special purpose financial statements. The Framework deals with general purpose financial statements (as does this book). These general purpose financial statements are aimed at the common information needs of a wide range of users. These users generally have to rely on the financial report as their major source of financial information. Special purpose reports, such as prospectuses for the issue of shares, are outside the scope of the Framework.

In Chapter 1, you were introduced to the users of financial reports. These include: investors, employees, lenders, suppliers and other trade creditors, customers, governments and their agencies, and the public.

The Framework takes the view that investors, lenders and other creditors are the primary users of the financial reports, as the objective of general purpose financial reports is to provide information to existing and potential investors, lenders and other creditors to allow them to make decisions about providing resources to the organisation.

The Framework also recognises that the users of information about not-for-profit organisations may be different and their resource allocation decisions may differ. For example, they include donors, taxpayers, recipients of the services (e.g. the community) and parties providing an oversight role (e.g. Parliament).

Elements of financial statements

The key elements of financial statements related to financial position are assets, liabilities and equity; those related to financial performance are income and expenses. These elements were introduced in earlier chapters, particularly Chapter 2. In earlier chapters we referred to revenues, which are one of the sub-elements of income.

ASSETS

An asset is a present economic resource controlled by an entity as a result of past events. An economic resource is a right that has the potential to produce economic benefits (Section 4 of the Framework, Source: Conceptual Framework for Financial Reporting © Australian Government, Australian Accounting Standards Board).

Let's consider some aspects of the definition from the Framework. Rights that have the potential to produce economic benefits include the right to receive cash (e.g. from accounts receivable), the right to receive goods or services (e.g. prepayments), rights over physical assets (e.g. property, equipment, inventories) and rights to use intellectual property (e.g. patents).

- While many assets have physical form (such as property, plant and equipment [PPE]), this is not essential, as for patents, trademarks and copyrights (usually called intangibles).

- While the right of ownership established by contract, legislation or similar means is common for many assets (such as receivables or property), it is not essential; for example, a lease of equipment can be an asset if the entity controls the benefits that are expected to flow to the entity.
- An asset must be as a result of a past transaction or other past events. This will normally be purchasing or producing the asset, but other examples could be the discovery of mineral or oil deposits, or property given by the government as part of a development plan.
- Some goods or services are received and consumed immediately, e.g. employee services are not included as assets.
- An economic resource is the right that has the potential to produce economic benefits. It is essential that the right exists and that in at least one circumstance would produce economic benefit for the entity beyond those available to other parties (e.g. rights to use a public right of way over land that others can also use would not be an asset; also know-how that is in the public domain is not normally an asset).
- Control by the entity relates to the capacity of an entity to benefit from the asset in pursuing its objectives and to deny or regulate the access of others. The entity controlling the asset is the one that can exchange it, use it to provide goods or services, and charge others for its use. Although the ability to control the future economic benefits may be a result of legally enforceable rights, this is not an essential characteristic of an asset. For example, under a lease agreement, the owner (lessor) may transfer to the lessee control over the leased property for a certain period of time.
- If the entity cannot deny others access to the benefits of the asset, these future economic benefits will not be controlled by the entity. For example, consider a property developer who builds a series of townhouses, and is required by the local council to put in road improvements or a public park as part of the project. If access to the road or the park is open to the general public without charge, then the developer does not have control over the asset.

LIABILITIES

A liability is a present obligation of the entity to transfer an economic resource as a result of past events. According to the Framework, three criteria must be satisfied in order for the liability to exist. The first criterion is the entity has an obligation.

- An obligation is a duty or responsibility that an entity has no practical ability to avoid.
- Obligations are generally established by contract, legislation or similar means, and are normally enforceable by other parties. However, the obligation can arise from customary practices, company announcements, and published policies (e.g. public announcements about refund policies would be an example).
- In some circumstances, there is uncertainty about whether an obligation exists. For example, an entity is sued about a product malfunction but the case has not yet gone to court. Until the matter is resolved, there is uncertainty whether the entity has an obligation and consequently whether a liability exists (this issue is discussed further in our next section).

The second criterion for a liability is an obligation to transfer an economic resource.

- To satisfy this criterion, the obligation must have the potential to require the transfer of an economic resource to another party; the transfer may be required only if a specified future event occurs. It is necessary that the obligation exists and that in at least one circumstance it would require the transfer of the economic resource.
- These obligations to transfer an economic resource include obligations to pay cash, deliver goods or services (e.g. provide a training course where the participant has paid in advance) and an obligation to transfer an economic resource if a specified uncertain future event occurs (e.g. an insurance claim paid by the insurance company if a fire results in property damage).

Again, we should consider some of the content of this definition from the Framework:

- Settlement of a present obligation can occur via:
 - payment of cash
 - transfer of other assets (e.g. a company has received a deposit on a piece of equipment it is providing; it later transfers that equipment to the person who paid the deposit)
 - provision of services, where amounts have been received in advance of services being provided (as when there has been a receipt of cash for a future airline flight), the liability is later removed by providing the service (i.e. providing the flight for the passenger)
 - replacement of an obligation with another obligation (e.g. accrued expenses may later become accounts payable when the company receives an invoice from the supplier)
 - conversion of the obligation to equity (e.g. issuing shares to a company to extinguish a debt).
- The third criterion for a liability is that the present obligation exists as a result of a past event. According to the Framework, a present obligation exists only if the entity has obtained economic benefits or taken an action and as a consequence will need to transfer economic resources. One example where an entity has not yet obtained economic benefits or taken an action would be the signing of a contract to pay an employee a salary at a certain rate of pay. The signing of the contract does not create a present obligation to pay the salary until the employee's services have been provided for a period of time. The liability then becomes the amount of salaries earned by that employee. Past transactions would include the acquiring of goods and services (accounts payable), employees performing work (wages payable or provision of employee entitlements), the use of money from the bank (interest payable), receipt of a bank loan (bank loan), sale of goods (provision for warranty) and receipt of cash in advance of providing a service (revenue received in advance).



HOW'S YOUR UNDERSTANDING?

- 8A** XYZ Ltd signs a contract on 1 May 2022 for a new CEO at \$50 000 per month for the next two years. The CEO starts work on 1 June 2022 but no cash is paid to the CEO until 5 July 2022. What is the amount of the liability at 30 June 2022?

EQUITY

Equity is defined in the Framework as the residual interest in the assets of the entity after deduction of its liabilities; that is, the difference between the amounts assigned to its assets and liabilities represents an element of the balance sheet that is referred to as equity (i.e. $A = L + SE$; $SE = A - L$). Other names by which equity is sometimes known include owners' equity, shareholders' equity and shareholders' funds.

In the Framework, the approach taken of defining equity as a residual is based on the view that equity cannot be defined independently of the other elements comprising the balance sheet. Accordingly, the concepts of assets and liabilities must be defined before a definition of equity can be made operational.

Equity ranks after liabilities as a claim to the assets of an entity. In the event of the entity being wound up, all liabilities must be met before a distribution can be made to the entity's owners. This characteristic implies that equity is a residual interest – it is the claim to the net assets of the entity; that is, to the assets after liabilities have been deducted. This is called 'equity claims'.

INCOME

Income is defined in the Framework as 'increases in assets or decreases in liabilities, that result in increases in equity, other than relating to contributions from equity claims'. This tells you that such things as the issue of shares would not be included.

Although the term ‘invoice’ is not split into components in the latest version of the Framework, the definition of income is generally considered to have two components: revenue (which we have discussed in earlier chapters) and gains. Revenue arises in the course of ordinary activities of the entity, such as sales, fees, interest, rent, royalties and commissions. Gains refer to other items that meet the definition of income. Gains include the sale of a noncurrent asset above book value (cost minus accumulated depreciation). Gains are normally reported separately in the income statement. Another example of gains is when some form of current value accounting is used and there is an increase in the value of assets. Current value accounting is discussed in the next section of the book.

Consider the above definition of income referring to ‘increases in assets’ or ‘decreases in liabilities’ that result in increases in equity. Now think back to the following transactions discussed in Chapters 3 and 4:

- A credit sale for \$10 000: an asset (accounts receivable increases) and an equity account increases (revenue increases and, therefore, retained profits increases).
- A company has an unearned revenues account (liability) of \$5000. When it provides the service, the unearned revenue account (liability) decreases and an equity account increases (service revenue and therefore retained profits).

EXPENSES

Under the Framework, expenses are defined as decreases in economic benefits during the accounting period in the form of outflows of assets (such as cash paid for wages), depletions of assets (such as depreciation of equipment or expiration of prepayments) or incurrences of liabilities (such as increase in provision for employee entitlements) that result in decreases in equity (retained profits decrease), other than those resulting in distributions to equity holders (dividends are not expenses).

Expenses are recognised in the income statement when there is a decrease in future economic benefits related to either a decrease in asset (such as depreciation of equipment or cash paid for wages) or an increase in a liability (increase in electricity payable or an increase in the provision for employee entitlements) that can be reliably measured. The recognition of the expense occurs at the same time – the other side of the double-entry system – with the recognition of the decrease in asset or increase in liability.

Recognition criteria

The recognition process refers to the process of capturing in the financial statements items that meet the definition of assets, liabilities, income and expenses. Recognition refers to the words and dollar amount included in the financial statements.

It is important to consider the recognition criteria for including assets, liabilities and equity in the balance sheet (statement of financial position) and the income statement (statement of financial performance). In making these decisions, it is important to refer back to the two fundamental qualitative characteristics discussed in Chapter 1: relevance and faithful representation.

Using these qualitative characteristics, one needs to make a professional judgement about whether certain items, that potentially meet the definition of an asset or liability, should be recognised in the financial statements. In some situations, there is considerable uncertainty about whether a ‘right’ (and therefore an asset) exists or not. Also, there may be considerable uncertainty about whether an obligation (and therefore a liability) exists. For example, someone is seeking damages from a company for an alleged wrongdoing by an employee. The uncertainty relates to the outcome of possible court decisions, negotiations, arbitration, and so on. In some cases, the uncertainty is combined with the fact that there may be a low probability of an inflow or outflow of economic benefits. Such situations are discussed in more detail in section 5 of the Framework.

Where there is uncertainty whether an asset or liability exists (e.g. depends on a court case with high levels of uncertainty) but the probability of an inflow or outflow of economic benefit is low, then recognition of the asset or liability may not always provide relevant information. In addition, recognition of an asset or liability may not be appropriate as it does not give a faithful representation. For example, while measurement uncertainty is present in the valuation of many assets or liabilities, in some cases the level of

uncertainty is so high that the numbers in the financial statements are not a faithful representation. Examples of such circumstances include:

- the range of possible outcomes is exceptionally wide and the probability of different outcomes is exceptionally difficult to calculate (e.g. the value of investment depends on the likely success of a vaccine during a pandemic);
- the valuation is extremely sensitive to changes in the probability of different outcomes and the size of the cash flows vary substantially depending on those outcomes.

In all the cases above, professional judgement has to be exercised in determining whether to recognise the asset and/or liability and resulting changes in income or expenses. An alternative is to use the notes to the financial statements to provide relevant details.

8.2 Assets and liabilities: valuation and measurement

LO4 When we look at financial information, what do the numbers (the numeric values assigned to assets and liabilities) mean? The asset valuation question is both complex and controversial. You may intuitively think that the assets should be valued at what they are worth, but what does that mean? There are two measurement bases for measuring (valuing) assets and liabilities:

- historical cost
- current value.

As you read the description of each measurement and valuation method, think about which one you believe is appropriate, and in which circumstances. Asset and liability valuation is often controversial, partly because of a concern that the values should be useful in people's decision-making and a suspicion that historical cost values are not as useful as those that look more to the future. One worry is that historical cost valuation, the most common method, positions financial statements too much in the past, when there are equally important needs to recognise changes in market conditions and to predict the future when making decisions.

Two controversies will serve as examples. For asset valuation, one issue is whether market values may actually be better than historical cost, at least in some cases, such as for the financial and monetary assets of banks and similar financial institutions. For liability valuation, an issue is whether obligations due well into the future, such as warranty obligations, should be valued at the 'present value' of the likely future payments (future cash flows minus interest lost by waiting for the money), rather than just at the estimated future cash outflow itself, as is done now.

Historical cost has been the traditional measurement basis in accounting and the basis focused on in this book. Current values have come into much more common use in the last decade, particularly in certain industries such as finance and property. As you will see, there are both advantages and disadvantages to using current values. These relate particularly to the increased relevance of current values but also the added complexity of the estimates to be made and the increased level of uncertainty. More details of the mechanisms of current cost accounting will be left to more advanced courses but here we explain some of the key differences.

Historical cost

Historical cost, otherwise known as acquisition cost, values assets at the amount paid or promised to acquire the assets, and values liabilities at the amounts of any associated promises. These amounts can generally be found by referring to transactional evidence, such as invoices, receipts or contracts. The ability to document the cost of the asset is a major reason why historical cost is the usual valuation method for most assets and liabilities. Another principal reason is that an organisation will rarely purchase assets or make promises for their purchase for more than the organisation believes them to be worth. Under this method, an asset valued

at historical cost is valued at its expected lowest or most conservative value of future benefits at the date of acquisition.

In most cases, GAAP imply the use of historical costs, unless some other valuation basis is more appropriate and is specifically disclosed in the financial statements. For example, note 1 of BHP Group Plc Parent's 2020 financial statements states they are prepared 'using historical cost principles as modified by the revaluation of certain financial assets and liabilities in accordance with the UK Companies Act 2006'.

Some additional points in connection with this method are worth noting:

- At the point of acquisition, historical cost = market value = value in use (present value), in most cases. We assume that rational people would only pay what the asset is worth to them in the future in their business, and that, in general, such use valuation would therefore tend to determine the market value of the asset.
- Much of the criticism of historical cost has to do with time issues. If a piece of land was purchased 10 years ago for \$500 000, this has little meaning today. Is the land worth \$2 000 000 or \$200 000 today? That is something you do not know with historical cost.
- If an asset's market value later falls below its original cost, the asset may be written down to the market value. This violation of strict historical cost accounting is very much part of generally accepted accounting principles. It is behind two important accounting phenomena: 'writing down' of unproductive assets (often called an *impairment*) and the 'lower of cost or market' rule used in valuing inventories and some other current assets. You will see more about these later in this book.

Concerns over how assets are valued using historical cost have led people to suggest alternative methods for valuing assets and liabilities on the balance sheet involving current cost measurement systems.

Current value measurements reflect the situation at the measurement date rather than historical costs. Unlike historical costs, current values are not derived from the transaction or event that gave rise to the asset or liability. Here we consider three current value measurement bases:

- fair value
- value in use
- current cost.

Fair value

Fair value is the price a company would receive to sell an asset, or the amount paid to transfer a liability, in an orderly transaction between market participants on a particular date (called the *measurement date*). In some cases, there is an active market (e.g. for shares) and prices can be directly observed. For other assets, there may be a less active market but estimates can be made based on similar markets. For example, a company may possess a parcel of land in a particular street where no other land has been sold for over five years. However, similar size blocks of land have been sold in neighbouring streets/suburbs and so an estimate can be made to take into account the uncertainties. This could include the range and the most likely estimates. In other cases, it is necessary to try to estimate the value using cash flow-based measurement techniques.

Value in use (and fulfilment values)

This is the present value of cash flows and other economic benefits from the use of an asset and its ultimate likely disposal price. For example, an estimate for an airplane can be made by calculating the future net cash inflows (think about the complication of this: number of flights over x years, average number of passengers, flight fares, etc.) and then adding the expected disposal price at the time the airline intends to dispose of the plane. Fulfilment value relates to liabilities and is the present value of the cash, or other economic resources, that the entity expects to be obliged to pay in order to fulfil the liability.

This approach to valuing assets considers that value flows from the way the company will use the asset to generate future cash flows.

- *Value in use* is usually estimated by calculating the net present value of future cash inflows (the cash flows minus lost interest implied by waiting for the cash) expected to be generated by the asset (e.g. cash flows from customers), or cash outflows it will make unnecessary (e.g. labour savings).

- Present value is the future cash flows minus lost future interest implied by waiting for the cash. For example, suppose you are getting \$1 in a year. If you had the money now, you would be able to earn 10 per cent on it, but by waiting a year, you give up that interest. The present value of the \$1 is the amount before the lost interest: the amount that would build up to \$1 in a year at 10 per cent. That would be 91 cents. In a year, 91 cents at 10 per cent would earn 9 cents interest, bringing the total to the \$1 you will get in a year. The present value (91 cents) is thus always smaller than the future cash payment (\$1), which is said to be 'discounted' to a lower amount to remove the effects of future interest. Present value and discount factors were introduced in the previous chapter.

Current cost

This is the current cost of an equivalent asset at the measurement date and would include the consideration that would need to be paid and any transaction costs (e.g. in the case of the purchase of land, it would be a real estate fee; for shares it could be the stockbroker fee). The current cost of the liability is consideration that would be received for an equivalent liability at the measurement date. Note that historical costs and current costs are entry values (i.e. reflecting prices in the market in which the entity would acquire the asset. Both fair value and value in use are exit values.

The basic difference between entry values and exit values is as follows:

- **Entry value** is the amount it would cost to bring the asset into the company if it were not currently in it. It is usually measured by estimating replacement cost, to purchase the asset again, or reproduction cost, to make the asset again. The same idea holds for the hypothetical reborrowing of liabilities.
- **Exit value** is the amount an asset is worth if it were sold now (in other words, its net realisable value) or the amount that a liability could be paid off at now, usually measured by quoted prices, appraisals and similar estimates.



FOR YOUR INTEREST

The previous discussion of fair value and value in use is particularly important for accountants in the present environment, as accounting standards require directors to ensure the carrying value of an asset (cost minus accumulated depreciation) does not exceed its recoverable amount. This reduction is called an impairment loss and is recognised in the income statement with the expenses. This is discussed in Chapter 13, on noncurrent assets. There you will learn that 'recoverable amount' refers to the higher of fair value less the cost to sell the asset and the asset's value in use. Therefore, if you are not sure what the terms 'fair value' and 'value in use' mean, go back and re-read the last few pages.

An example: current market value as an alternative to historical cost

Let's look at a realistic and relevant example. In most countries, there are many companies that specialise in acquiring and developing real estate for office buildings, shopping centres, industrial plants, housing developments and many other uses. As you probably know, real estate values are highly variable, with frequent booms and busts. Let's consider two fictional real estate development companies operating in the Sydney market. They are called Oxbridge and Bramview:

- Oxbridge has undeveloped land, bought during a downturn in the Sydney real estate market, which cost \$50 million and has an estimated current market (output) value of \$80 million. The company's net profit has been about \$7 million per year in the last few years.
- Bramview also has undeveloped land, comparable to Oxbridge's, except it was bought during an overheated period of the Sydney market at a cost of \$110 million. Its estimated current market value is also \$80 million, and the company's net profit has also been about \$7 million per year.

The two pieces of land are about the same, but the companies' historical-cost-based balance sheets certainly do not look the same:

- Oxbridge: undeveloped land, at cost \$50 million
- Bramview: undeveloped land, at cost \$110 million.

Also, Oxbridge will show a higher ratio of net profit to total assets, indicating apparently stronger performance than Bramview, because its total assets will be lower than Bramview's. Now, we could argue that this is as it should be; that Bramview has not really done as well because, in hindsight, too much was paid for the land. But another argument is that, since the two pieces of land are comparable economic assets, net profit should be related to the economic value (such as the market value) of the assets, not to costs that depend on historical events rather than currently relevant economic conditions.

Let's consider the idea of changing both companies' asset valuations for the land to current market value. Using the concepts from earlier in this book, what might be some pros and cons of this idea?

Pros include the following:

- more relevant valuation for users in assessing the company's value
- more useful for comparing companies with similar economic assets
- fairer way of relating performance (income) to the economic value that managers are managing on behalf of owners
- more timely data than the 'obsolete' cost figures
- understandable to users who know something about real estate.

Cons include the following:

- less reliable numbers, because they are based on the estimated selling value of land that has not been sold
- less consistent balance sheet values, because real estate values tend to vary a great deal over time
- not transaction based, and therefore not easily verifiable
- can be costly if valuations need to be paid for
- no effect on cash flow directly or through income tax, because the land has not been sold, so there might be doubt that moving the financial statement numbers around in the absence of real economic effects would be very helpful to anyone.

You can probably add more pros and cons. We don't know the significance (materiality) of the land valuation issue to the companies' financial statements, or the income tax and other consequences of changing the accounting numbers. But you should see that the accounting concepts are useful in figuring out what the appropriate accounting procedure to use would be.

8.3 Capital markets

Share markets and other markets for financial capital

As business corporations developed, ownership rights in them were sold more and more broadly. The owners (shareholders) began to invest in several businesses at once and to buy and sell their shares from and to each other. To facilitate the buying and selling (trading) of shares among investors, share markets – organised as stock exchanges – developed. Today there are many such exchanges, including the major international ones in New York, London, Tokyo, Paris and Toronto. The Australian Securities Exchange (ASX) is also a large equities market, and the largest in the Southern Hemisphere. Brokers, investment banks, market analysts and others conduct, assist in and advise on trading.

LO5
LO6

Trading goes on in more than just the shares of companies. For example, there is also the trading of rights (using terms such as 'warrant' or 'options') to buy or sell shares in the future, to convert from one kind of share to another, to receive dividends and to perform a wide variety of other future actions. New rights, and financial instruments to convey such rights, are being invented and traded all the time. Corporate and government bonds are also traded, and there is such a variety of financial instruments that the distinction

between ownership shares, creditorship bonds and other rights and instruments is often blurred. For example, some bonds carry the right to be converted into shares at the option of the holder.

It is becoming increasingly common for investors to buy or sell securities anywhere in the world 24 hours a day. Taken together, all these exchanges, markets and buying and selling activities are usually called capital markets. They include both share trading and trading of all the other securities that corporations and governments use to finance their assets.

It is important to emphasise that these markets operate quite separately from the organisations that initially issue the securities. For example:

- When a company decides to issue some shares, these securities are offered to the market(s), and the company receives the proceeds of the initial sale of them (less commissions to brokers and others involved). After that, however, the company ceases to be a direct participant. Investors buy the securities from each other and sell them to each other with no participation from the company. This is all done through the exchanges, e.g. the ASX.
- Investors may even act in the face of opposition from the company; for example, an investor may try to get enough shares together to get voting control of the company (a takeover). There is always a risk for public companies (companies whose shares members of the public are able to buy or sell from each other without permission of the companies) that the markets will behave in ways companies do not like.
- The company may announce a new management team that it expects will improve the company's performance, but its share price may fall because the people buying and selling the shares do not like the new team, and more people want to sell their shares than want to buy them, producing a fall in the share price.
- The markets often create new securities out of the ones the company initially issued, then trade those. For example, a share may carry the right to buy another share in the future. That right may be bought and sold separately on the market, so that you could own the share without any such right, or the right without any such share.

Five particular aspects of capital markets are outlined in this section. These are:

- the way securities are traded and security prices are established
- the role of information (such as accounting reports) in such a market
- the idea of a 'risky return'
- the fact that markets are 'aggregates'
- the concept of 'market informational efficiency'.

These aspects, among many others, are dealt with in capital market theory. This theory is very down-to-earth, and incorporates much practical knowledge of how markets work. It has been a powerful impetus to economics, finance and accounting research, and to changes in the way capital markets are operated.

Security trading and security prices

Capital markets work in the same way as any market. People trade (buy and sell) what they own for something else, usually money or a promise of it.

- There are people who own securities, such as shares in BHP, Woolworths, Commonwealth Bank or numerous other companies. Some of these are willing to sell their shares, if the price is right. If no one was willing to sell at any price, there would be no trading!
- There are people who don't own any securities, or want more securities, and are willing to buy them, if the price is right. If no one was willing to buy at any price, there would be no trading! Let's call the first group the sellers and the second group the buyers.

Suppose we had the following list of possible prices of BHP shares:

Price	Sellers' willingness to sell	Buyers' willingness to buy
\$19	Everyone would sell	No one would buy
\$18	Most would sell	A few would buy
\$17	Half would sell	Half would buy
\$16	Some would sell	Most would buy
\$15	None would sell	All would buy

Notice that, from this hypothetical list of prices, we have a supply curve and a demand curve. Capital market prices are set by the interaction between those wanting to sell and those wanting to buy. At a price of \$19, there would be lots of shares for sale but no buyers; at a price of \$15, there would be lots of buyers but no sellers. Each day's market price for the shares is set by the balance between people willing to buy and people willing to sell:

- If there are more sellers than buyers, the price will fall, roughly down to the level at which there is an equal number of buyers and sellers (or at least, shares demanded and shares for sale).
- If there are more buyers than sellers, the price will rise, roughly up to the level at which there is an equal number of sellers and buyers (or shares for sale and shares demanded).

In the above example, we would expect the buyers and sellers to agree to trade (buy and sell) at a price of around \$17. So if we looked up BHP shares in the newspaper's listing of ASX prices, we would expect to see today's price to be about \$17. But the daily price is set by the pressures of supply and demand, so it will vary, depending on how many buyers and sellers make offers to buy or sell. Therefore, it will vary around \$17 as those pressures vary.

Role of information in a capital market

Why would the pressures of supply and demand vary? Broadly speaking, there are three kinds of reasons that are of interest in accounting analysis:

- *No information-based trading:* The circumstances of some buyers and sellers may require them to sell, or even buy, almost regardless of anything to do with the particular company whose shares are being traded. An owner of some shares may die and the estate may have to sell the shares in order to distribute the money to the beneficiaries of the owner's will, or an institutional investor, such as a superannuation fund, may need some cash to pay superannuation or other payments. A person may win a lottery and buy shares in a managed fund (an investment consisting of a sample of shares of many companies), so that the managed fund in turn has to buy some shares. Therefore, some trading is likely to be occurring continuously for reasons relating to raising or spending available cash. Such trading is referred to as liquidity trading.
- *General information-based trading:* Companies whose shares are traded are part of a general economic system, and some general events may modify people's views on the wisdom of investing in anything. As a result, this may cause changes in all or most shares traded on an exchange. The share price of companies such as BHP may therefore change, along with the rest. Examples of such general events are changes in national interest rates, announcements of trends such as inflation or consumer confidence, wars, pandemics, illness or the death of important people, and elections that change the party in power. If the Australian Government announced a new special tax on company profits, we might expect pretty well every company's share price to fall, including BHP, because investors would see this as hurting every company's future profits and, therefore, the returns investors would get from owning shares in any company. Market-wide price changes coming from the economic system are often called systemic effects. Some of the trades may happen because investors think some companies will be hurt or helped more than others, and some investors may be getting out of that market altogether by selling their shares and buying gold or real estate instead.
- *Specific information-based trading:* Information specifically about BHP's future prospects may also cause changes in the willingness of people to buy or sell its shares. For example, if BHP announced that it was

going to buy a mining company, some people may like that idea (and, wanting to buy, increase the demand for shares) and other people may dislike the idea (and, wanting to sell, increase the supply of shares). If most people think that BHP buying the other company is a good idea, the share price will rise; if most people think it is a bad idea, the share price will fall. This phenomenon, in which share prices are influenced by and reflect a person's evaluation about the impact or meaning of an event (and their desire, therefore, to hold on to or sell their shares), is very important for understanding share prices and accounting's information role. We can say that the share market prices the information, in that the change in the trading price of the shares (up, down, or not at all) is a measure of the value of the information to the market. Harking back to the accounting concepts, we might say that in a share market sense, *decision-relevant information is material* to the market if knowing about it changes, or would change, a security's market price or, perhaps, would prompt trading (buying and selling) even if the net effect on price were zero.

A great amount of analysis and research in accounting, finance and economics uses this idea to measure the apparent value of all sorts of company-specific information, such as a company's annual announcement of its net profit (earnings announcement), announcements of changes in management and news about other events initiated by or affecting the company. (Presuming that a change in share market prices is a measure of information's value requires some faith in the market system as a social good and confidence in the market's ability to respond appropriately, or efficiently, to information.)

Return and risk

The return you earn by owning a security (a share or bond) is the sum of:

- the cash you get (from dividends or interest payments) plus
- the change (hopefully an increase) in the market price of the security.

You get a cash return plus a holding gain or capital gain (or loss). Capital market theory develops much of its power from analysing the nature of these two kinds of returns, particularly the second kind. If the security you own varies in market price, that variation is, according to the theory, a measure of the risk from owning the security, since prices could go up or down. Risk is calculated as the variance or standard deviation of the prices around the average price – or trend in average price – of that security. A risky security, therefore, is one whose price varies all over the place. As described previously, a security's price may vary because the whole share market or bond market is going up or down, or because of information that is specific to that security or to the company issuing the security. So, analytically, the risk is separated into:

- *systemic risk*: the portion of the security's variation that relates to or correlates with variation in the overall market
- *non-systemic risk*: the security's own residual variation not related to the market. Beta (a term coming from the mathematical model used to relate a firm's returns to those of the market overall) is a measure of the security's relationship to overall market variations. Securities can be classified according to this relationship: a low beta security's prices vary less than overall market prices do, while a high beta security's prices vary more than the market does.

Risk can be controlled to some extent by holding a variety of securities with different betas. More will be said about this in the section on aggregates that follows.

A natural question at this point might be: 'Does accounting information (especially profit or cash flow) help to predict security prices and, therefore, risks and returns?' When important events that do affect security prices are also represented in the accounting information, the accounting information will indirectly be predictive, too. It depends on how well accounting represents the original event: it seems that if phenomena reported in the accounting information have a clear economic meaning (such as when they represent an impact on cash or risk), they do have some incremental predictive value.

After the fact, however, it is clear that accounting information (especially profit) does correlate highly with market prices. The longer the accounting–price relationship is measured, ordinarily the better it is: accounting profit, for example, usually correlates better with share prices over several years than over a few months.

Aggregates

Security markets involve aggregate behaviour. Capital market theory proposes that a sensible investor will invest in a group of securities termed a *portfolio*. By choosing a group with various individual betas (risk measured by variation in returns), the investor can assemble a portfolio with whatever overall risk the investor wishes. Generally, a portfolio is less risky than any individual security because, by adding together a group of securities with different non-systemic risks, the unique variations in each partially cancel each other out. When the price of one goes up, another price may go down. Thus, a portfolio is a way of diversifying away the non-systemic risk.

Market informational efficiency

Efficiency of information use means that markets respond so quickly and smoothly to information that once the information becomes public, its effects are immediately reflected in prices through the trading of securities. People who think the information implies that they should buy, do so, from people who think that they should sell. This fast response means that if the market is efficient, you can't use publicly available information (such as public financial statements everyone can read) to 'beat' the market; by the time you have the information and can act, the market will already have reacted to the information and produced a new trading price that reflects that information. You, as an individual trader, don't have the power to do much about the price that the overall sum of buys and sells has produced, so, unless you can trade on your information before anyone else knows it, you will find that the price already reflects the value of the information. If everyone gets an accounting report at the same time, probably only those traders nimble enough to act immediately will be able to take advantage of any news in the report. (More comments on whether accounting reports are likely to be news are made later.)

Capital markets operate on information, but they do so in light of expectations already formed, in accordance with what was already known. Therefore, the markets tend to respond to new information only if it is unexpected. The argument can be made that for an efficient capital market, only the *unexpected* portion of profit (or of any other such item or announcement) is information to the market. The market will not respond much to financial results that are exactly as everyone expected. There always is some response, though, because various market traders have different expectations and beliefs – these differences make the markets work!

Research indicates that some markets (such as the New York Stock Exchange) are quite efficient with respect to publicly available information, but exceptions have been found. The research is by no means conclusive, and the behaviour of many markets is not well understood (the Australian Securities Exchange, for example, has been studied much less than the New York Stock Exchange). Because informational efficiency is a difficult phenomenon to demonstrate conclusively, it is often called a hypothesis about how markets work: the *efficient market hypothesis*.

Securities commissions, such as the US Securities and Exchange Commission and the Australian Securities and Investments Commission (ASIC), are responsible for ensuring that securities trading is as fair as possible. One problem securities commissions worry about is so-called asymmetric information. Some market traders know more than others do about a security and, therefore, could potentially take advantage of the more ignorant traders. If you know that bad things are ahead, you sell to people who don't know that the price will fall when everyone learns about the bad things, or if you know that good things are ahead, you buy from people who don't know their shares are worth more than they think. A major role of financial accounting is to reduce information asymmetries by producing information that informs everyone.

An example of the effects of asymmetric information is that people on the 'inside' of the company might use their private knowledge to take advantage of other investors. Such insiders can buy or sell before other investors learn about something and, therefore, before the market can reach a new price based on the information. This is referred to as *insider trading*. If you were a senior executive of a company, and you knew that tomorrow the company was to release an unexpectedly good profit report that would cause the share price to rise, you could buy today from share sellers who were ignorant of what you knew. Securities commissions require that any significant information be released quickly and to everyone at once, and they

keep an eye on insider trading, which is illegal. Insider trading laws prohibit insider trading, and it can result in very large fines as well as jail sentences.

Financial statements are one of the ways in which companies disclose information about themselves to outsiders. Securities markets certainly pay attention to financial accounting information, but in a world in which many people buy and sell shares several times a day, half-yearly or annual financial statements only provide part of the picture. Much of the information in the financial statements leaks out over the year, in press releases, announcements and official information filings with securities commissions or stock exchanges. For example, the audit of a company's 30 June financial statements may be completed in August and the financial statements printed and issued in November, but throughout the prior year there will have been announcements about important events. Not surprisingly, accounting research shows that share price changes generally happen before the official profit reports are released, and this is more likely to happen for larger firms, which tend to have more information available between accounting reports.

There is, therefore, a continual flow of financial-statement-related information and other significant information from public companies to securities markets. The general idea is that information should be released as soon as it is known, so that general market traders are not disadvantaged, compared with insiders. This helps to keep the system fair for all, but it should also assist the market's pricing system to reflect informed evaluations of companies' prospects, so that the market prices are consistent with society's overall interest in the appropriate allocation of economic resources.

A cornerstone policy for stock exchanges is that all persons investing in securities listed on the exchange have equal access to information that may affect investment decisions. Investor confidence in the integrity of an exchange requires timely disclosure of material information concerning the companies listed on the exchange, with the result that all participants in the market have equal opportunities concerning securities trading.

Trading on an exchange can be affected by both material information and the existence of rumours and speculation. In this case, an exchange may require an announcement from a company as to whether such rumours and speculation are factual or not.



HOW'S YOUR UNDERSTANDING?

- 8B**
- 1 If a particular capital market is described as being efficient, what does that imply about the role and usefulness of financial accounting information in that market?
 - 2 Why is timely disclosure of financial accounting information and other information important to capital markets?

8.4 Contracts and financial accounting information

LO7 Reporting to capital markets is not all that financial accounting is good for – or that managers worry about. Financial accounting plays many other roles that are important to managers and other parties. Such accounting information is used in resource-allocation decisions made by governments, in assessing income taxes and in negotiations with and by labour unions (in assessing which projects and activities to support).

This section has some ideas about the contractual relationships among people involved in a business, and about a consequent role of accounting information in how such contracts work. There has been much research on contracts, as on capital markets. The area goes by several other names including agency theory, principal-agent theory and positive accounting theory.

In a contract, people agree to do things on each other's behalf and to be compensated for doing so properly. For example, managers, auditors, lawyers or physicians are entrusted with acting on behalf of one or more other people (the owners, creditors, defendants or patients). Contracts may be formally written ones

(such as legally binding indentures providing protection to bondholders), less-formal employment contracts or supplier agreements or informal arrangements such as a handshake between partners. The person who is to do something and be compensated is often called the *agent*, and the person who wants it done is the *principal*. Many contracts involve both parties doing things for the other, and in any case, it is usually assumed that a valid contract requires that both parties entered into it freely, because both expect to benefit.

There is a fundamental characteristic of contracts among self-interested participants: *the people are unlikely to have the same interests*. Conflict of interests is not viewed as being bad, but rather as being the natural state of affairs. For example, if the agent is to provide effort on behalf of the principal, it would be natural for the agent to want to work less hard than the principal wishes. For the agent, effort is costly and might therefore be minimised, whereas the principal would want the agent's effort to be maximised.

In the contract setting, accounting has a major role in reporting on what the agent did on behalf of the principal. This is the *stewardship* role of accounting information (in monitoring the past stewardship of the agent, such as company managers, on behalf of the principal, such as the owners or shareholders), as distinct from the future-oriented, decision-making role of such information in capital markets. Now the focus is on how the managers behave, rather than on how the capital market (consisting of shareholders and potential shareholders) behaves. You can think of the information produced by financial accounting as resulting from the wish by the various parties to provide incentives and controls over each other's behaviour, especially agents' behaviour. This wish exists because agents are assumed to want to act in their own interests, and, in the absence of appropriate incentives and controls, their interests are assumed not necessarily to coincide with those of their principals.

From this point of view, accounting information is a part of the contract, and should serve the monitoring and other needs of the contracting parties. Principals and agents will demand whatever information they require to manage the contractual relationship between them, and information, therefore, can be judged only in terms of that specific relationship. Is it what they need, or isn't it?

Here is an example. Suppose the shareholders of Lakewood Limited wanted management to work hard to maximise the price of Lakewood's shares, which are traded on a stock exchange. The higher the price, the better the return will be to the owners from owning the shares, and the higher their wealth will be. The owners might, through their representatives on Lakewood's board of directors, propose a management contract that specifies that the top managers get no salary, but instead get 20 per cent of the change in the company's share price over each year. The top managers might well reply that this is too risky for them, because all sorts of things might affect share price, including things over which they have no control, such as wars, recessions or other unexpected problems. The share price could go up, but it might as likely go down. The managers may then propose that they should be paid a flat salary of \$200 000 each, regardless of changes in share price, believing that the owners should take the risks. This isn't what the owners want, because they are concerned that the managers will not be sufficiently conscientious if they are guaranteed a salary regardless of performance.

Therefore, the two parties negotiate. Finally, a contract is agreed upon. Suppose it says that the managers will get \$150 000 each, plus performance bonuses of 5 per cent of the annual net profit and 3 per cent of the increase in share price, with no penalty for negative profit or negative change in share price, but with no bonuses then either. (The owners, interested in maximising the share price, and the managers, feeling that they have more control over net profit than share price, would in this case have agreed to include both factors in the bonus calculation.) Management compensation contracts are often very complex, and a subcommittee of the board of directors may be created specifically to design and monitor such contracts. Securities commissions increasingly require public companies to disclose the nature of such contracts and the compensation that results from them, especially for the chief executive officer (CEO) and other senior managers. Management compensation contracts – in which pay depends on performance, and pay includes shares or options to buy shares cheaply, in addition to cash – have become very common in recent years.

The result is that the managers, as agents for the owners (the principals), have agreed to work for the owners, and the owners have agreed to employ the managers. Both parties have entered into the contract for their own reasons, and both are reasonably satisfied with it. Now the owners can use financial accounting

information to monitor the managers' performance and to calculate their bonuses based on net profit. Both parties, because of their contract, are interested in the accounting information, and neither would be satisfied without accounting. They may specify in their contract that GAAP be used to calculate net profit, for the sake of convenience or because they prefer it that way. They also may specify other ways of calculating net profit that they think are to their mutual advantage.

If many companies have these sorts of bonus arrangements or other incentive contracts in which financial accounting information plays a role, there can be strong pressures on the development of GAAP or official accounting standards in directions that improve the effectiveness of such contracts. There is also a clear role for auditors in the smooth functioning of contracts. If the managers are responsible for the accounting information and are being paid on the basis of it, the owners (who are perhaps some distance from the company's offices and in any case would not want to have to show up to ask questions about accounting) may not be inclined to trust the managers' figures, and would prefer having an outside auditor evaluate them. Adding credibility to management's information is the oldest reason for auditing, and still central to it.

There are many kinds of formal and informal contracts, with many parties other than managers (such as suppliers, associated companies, foreign business partners and governments) that may use financial accounting information. The parties to such contracts will necessarily have an interest in the financial statements, in GAAP, in auditing, and in the other aspects of financial accounting. They will, therefore, act as part of the system of information demand and use that shapes accounting. Some of the contracts that are likely to be of interest from a financial accounting point of view include management compensation contracts (as illustrated earlier), labour contracts, contracts with suppliers and/or customers, and financial contracts, such as those drawn up for issuance of bonds, other debt or equity. One reason for written contracts is the conflict of interests mentioned earlier. For example, bondholders receive a claim on the company, or its assets, that has a higher legal priority than the shareholders' residual claim. A contract, such as a bond indenture, is written specifying the exact rights of the bondholders. The indenture might say that if the company's working capital falls below a certain level, the bondholders have the right to demand early payment or some other penalty. This doesn't remove the conflict of interests, but clarifying the situation makes everyone's assessments of the company's performance and prospects more informed.



HOW'S YOUR UNDERSTANDING?

- 8C** Green Limited has a set of management bonus contracts for its senior executives, specifying that their pay will be based partly on how well the company performs. Brown Limited, however, just pays its managers a flat salary. What differences would you expect in the attitudes of the two groups of managers to their company's financial statements?

8.5 Managers and financial accounting standards

LO7 The Framework discussed earlier provides the foundation for a set of accounting standards that provide information to management on the principles and rules for how to account for all sorts of different transactions. The consistent recording of these transactions is important for capital markets and contractual arrangements as discussed in the previous section. While the detailed coverage of the content of these accounting standards is left to later subjects, you should realise that a set of authoritative standards exist for financial reporting that specify how accounting transactions are recognised, measured, presented and disclosed in the key financial statements and the accompanying notes to the financial statements. Managers may be interested in accounting standards for several reasons. On the positive side, standards should:

- make reports on managers' performance clearer
- make it easier to make comparisons with other companies
- reduce the costs of accounting (each company would not have to work through and invent accounting methods on its own)

- increase the company's credibility in the eyes of important users who utilise financial statements in general
- help to evaluate the conceptual and numerical effects of accounting choices and business decisions managers may have to make.

On the negative side:

- Standards may specify general methods that do not work well for, or even mismeasure, some specific companies or situations.
- Not all managers may wish to be measured clearly or have their company's performance easily compared with that of other companies.
- Some complex standards may be quite costly to follow for some companies.
- New standards may cause difficulty for loan agreements, bonus plans or other arrangements that depend on accounting information, and were agreed to before the implementation of the new standards.

With reasons like these, it should be no surprise that the senior management of many companies (and of the firms of auditors who have the companies as clients) take accounting standards very seriously. Many companies seek to influence accounting standards through lobbying standard-setters, lobbying securities commissions and other government agencies, and doing their own studies into the effects of proposed standards. One of the main reasons that top managers of public companies pay close attention to their companies' financial statements, earnings announcements and other disclosures is that share markets and other securities markets respond quickly to information, and do so in accordance with the value of that information to the market traders.

Managers also pay close attention to their companies' financial statement figures, because important contracts are based on those, explicitly or indirectly. Many top managers are compensated based on the profit shown in the financial statements, and many own shares in their companies. In addition, if the company is a public company, the top managers may lose their jobs if stock market prices decline or fail to rise as the board of directors wishes.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Asset recognition

Indicate whether each of the events described below gives rise to an asset under the definition and characteristics within the Framework. If so, show the amount of the asset. What would the asset be called?

- 1 A temporary excess of cash is used to purchase shares in BHP for \$8500.
- 2 A deposit of \$5000 is paid on custom-designed equipment to be completed and delivered next year. The total purchase price of this equipment will be \$20 000.
- 3 A supplier sends notice that \$900 worth of raw materials has been shipped by freight, with payment due in 30 days. The buyer obtains title to the goods as soon as they are shipped by the seller.
- 4 A customer places an order for \$600 worth of goods.
- 5 A production manager has been hired to oversee the company's operations, with employment commencing next month. One-twelfth of the annual salary of \$96 000 is to be paid at the end of each month worked.
- 6 Inventory is acquired at a list price of \$1200, with payment made in time to secure a 2 per cent discount for prompt settlement. Cash discounts are treated as a reduction in the acquisition cost of the inventory.

PRACTICE PROBLEM B

Liability recognition

Indicate whether or not each of the following events immediately gives rise to the recognition of a liability. If a liability is recognised, state the account title and the amount.

- 1 A firm signs a contract to purchase at least \$40 000 worth of merchandise during the next two months.
- 2 A cheque for \$240 for a two-year subscription to a magazine is received.
- 3 A construction company agrees to build a bridge for \$2 million. A down payment of \$200 000 is received upon signing the contract, and the remainder is due when the bridge is completed.
- 4 During the last pay period, employees earned wages amounting to \$24 500 for which they have not been paid. The employer is also liable for payroll taxes of 8 per cent of the wages earned.
- 5 A company is informed by a previous employee that he is suing the company for \$300 000 for wrongful dismissal.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 Write a paragraph or two discussing the following topic: 'The only thing worse than the large and complex set of practices, standards and theories that make up GAAP would be if there were no such thing as GAAP.'
- 2 Define an asset. What are the essential characteristics of an asset?
- 3 Define a liability. What are the essential characteristics of a liability?

- 4 Describe each of the following methods for measuring assets and liabilities:
 - a historical cost
 - b price-level-adjusted historical cost
 - c market value
 - d value in use
 - e liquidation value
- 5 Compare the concepts of value in use and value in exchange.
- 6 Argue both for, and against, the following proposition: 'Historical cost accounting is irrelevant to users' decision-making.'
- 7 What is the role of information in a capital market?
- 8 What is meant by the efficient market hypothesis?
- 9 What is the major purpose of a stock exchange?
- 10 Explain the terms 'agency theory' and 'stewardship'.
- 11 Briefly describe two important implications capital market theory has for the use of accounting information.
- 12 Briefly describe two important implications agency (contract) theory has for the use of accounting information.
- 13 It appears that some top managers attempt to manage their companies' financial disclosure, including their financial accounting, to alter the story each disclosure tells. Why might managers be motivated to do this?

PROBLEMS

PROBLEM 8.1

Can financial statements meet various needs?

The chairperson of the board of directors of a large public company said in frustration: 'The company's written and unwritten contracts with its shareholders are so different from those with its managers that it's impossible to design financial statements that will meet the needs of both shareholders and managers.' What do you think?

PROBLEM 8.2

Usefulness of accounting concepts and principles

Jason is a hard-driving, impatient business executive. You work for him, and can feel the grey hair sprouting on your head from all the pressure. One day, he returns from a lunch meeting with his accountant and says, 'That accountant told me that there are accounting concepts and principles that tell me important things about why my financial statements are useful, why they are worth all the money they cost to produce and audit. I'm not convinced.'

Give Jason five reasons why accounting concepts and principles are useful. You may wish to refer to the accounting concepts and principles referred to in Chapter 1. Make your explanations brief and to the point: Jason hates longwinded answers!

PROBLEM 8.3

Recognition in accordance with standards and the Framework

For each of items 1–5 listed below, state whether, in accordance with existing accounting standards and the Framework, it would be recognised as:

- a an asset
- b a liability
- c a contingent liability
- d revenue
- e an expense
- f none of the above.

Items:

- 1 a provision for annual leave
- 2 \$1 million payable under a guarantee in the event of a third party being unable to pay
- 3 purchased goodwill
- 4 a patent
- 5 cash received from a client as a deposit for work to be carried out next year.

PROBLEM 8.4

Recognition of assets

Consider whether the following items should be included in an entity's balance sheet under assets. If yes, state the account name and dollar amount.

- a A property developer builds a series of townhouses and is required by local government to include a public park as part of the project. The cost of constructing the park is \$3 million.
- b A manager has been hired to oversee the company's operations, with employment commencing next month. One-twelfth of the annual salary of \$120 000 is to be paid at the end of each month worked.
- c A toy retailer incurs advertising costs in promoting its current 'specials' by printing a catalogue and distributing it to local residents.
- d Inventory is acquired at a list price of \$1200, with payment made in time to secure a 5 per cent discount for prompt settlement. Cash discounts are treated as a reduction in the acquisition cost of the inventory.
- e A department store receives goods from a manufacturer on consignment (cost \$80 000; selling price \$130 000). A consignment is a selling arrangement whereby a company (consignor) ships goods to an agent (the department store), who agrees to sell the goods on behalf of the company for a commission. Under the agreement, title to the goods remains with the consignor until the goods are sold to a third party.
- f A tennis association receives an \$80 000 grant from the local council to build a new tennis court.
- g A machine is purchased for \$800 000 and costs an additional \$50 000 to install.

PROBLEM 8.5

Recognition of an asset

The general manager of Telco Limited is considering spending \$15 million on the development of a new mobile phone that can also be used as a television.

What conditions would need to be met before the \$15 million can be recognised as an asset on the balance sheet?

PROBLEM 8.6

Conceptual components of asset cost

The new accountant for Mactaggart Industries is wondering how to calculate the cost of a new machine the company has just installed. Explain briefly whether or not you think each of the following items should be part of the machine's cost, and why:

- 1 the invoice price of the machine
- 2 GST paid on the machine
- 3 shipping charges to get the machine to the company's factory
- 4 the cost of the factory manager's trip to the machine manufacturer's plant to choose the machine
- 5 the cost of painting the machine light green, as other machines in the factory are painted
- 6 estimated revenue lost because the machine arrived late
- 7 the cost of substandard products made while the factory personnel were learning how to operate the machine (all thrown away so as not to damage the company's reputation for quality products)
- 8 interest cost on the bank loan used to finance the machine's purchase
- 9 the cost of moving three other machines in the factory to make room for the new one.

PROBLEM 8.7

Determine asset costs from various possible components

Determine the costs that would appear on the balance sheet of Smith Co. Ltd, in relation to land and a building, based on the following information:

	\$
Purchase price of plant site	175 000
Building materials (includes \$10 000 in materials wasted because of worker inexperience)	700 000
Machinery installation charges	40 000
Grading and draining plant site	20 000
Labour costs of construction (Smith Co. used its own workers to build the plant rather than laying them off because business was slack. However, the labour to build the plant cost \$40 000 more than outside contractors would have charged, because of inside workers' inexperience and inefficiency.)	500 000
Machinery purchase cost	1 000 000
Machinery delivery charges	10 000
Parking lot grading and paving	60 000
Replacement of building windows shot out by vandals before production start-up	7 000
Architect's fees	40 000

PROBLEM 8.8

Asset recognition

State whether or not an asset should be recorded in the balance sheet of LMR Ltd as at 30 June 2022 in each of the following situations. Indicate the amount of the asset (if any) and any assumptions made.

- 1 On 15 May 2022, LMR Ltd paid \$10 000 for an insurance premium. The premium covers losses incurred in the period up to 14 May 2023.
- 2 LMR Ltd paid \$100 000 for a patent in April 2022.
- 3 LMR Ltd has just hired a new general manager who is an expert in the business carried on by LMR Ltd. With the help of this person, the company is expected to increase its annual profits by \$850 000. The general manager's salary is \$450 000 per annum.
- 4 LMR Ltd purchased land in 1994 for \$500 000. The market value of this land is \$750 000 as at 30 June 2022.
- 5 On 29 June 2022, LMR Ltd paid \$900 000 for a printing service business consisting of machines worth \$500 000 and a list of 75 established clients.
- 6 Over the years, LMR Ltd has created goodwill among its clients so that it now enjoys good relations with over 2000 customers. It is estimated that if the business was sold, as at 30 June 2022, LMR Ltd could demand an additional \$400 000 above the sale price of its physical assets.
- 7 A machine is purchased for \$500 000 and costs an additional \$200 000 to install.

PROBLEM 8.9

Recognition of assets

For each situation below, state whether an asset would be recognised in the balance sheet. If the answer is no, state which of the essential characteristics relating to assets has not been met.

- 1 Equipment is purchased on credit.
- 2 Cash is received from a cash sale.
- 3 A yearly insurance policy is paid in advance.

- 4 A department store receives goods from a manufacturer on consignment. A consignment is a selling arrangement whereby a company (consignor) ships goods to an agent (the department store), who agrees to sell the goods on behalf of the company for a commission. Under the agreement, title to the goods remains with the consignor until the goods are sold to a third party.
- 5 Land is donated to a sporting association.
- 6 A sporting association receives a grant from the local council to build a new tennis court.
- 7 A patent is purchased using cash.
- 8 Money is spent on research and development that is unlikely to lead to any new product in the near future.
- 9 A company hires a new general manager who has a reputation for increasing profits in her first year with any new employer.
- 10 BHP shares are purchased for cash.
- 11 A council swimming pool offers free admission to ratepayers who provide identification.
- 12 A luxury resort paves a gravel road from the highway to the resort. The road can also be used by others to get to a number of sporting facilities in the area, including a golf course that is not owned by the resort.
- 13 A piece of equipment has a written-down value of \$100 000, and is no longer used by the company. It has no scrap value.

PROBLEM 8.10

Identify items as assets, liabilities or owners' equity

State whether or not, and why, each of the following items is likely to be an asset, a liability or an owners' equity account (perhaps both an asset and a liability in some cases):

Item
1 List of subscribers to a magazine company
2 Funds collected from employees, to be repaid to them after retirement as superannuation
3 Satisfied customers
4 Lawsuit against the company by a builder who alleges the company failed to pay for work done on the company's premises
5 Land that the company has agreed to sell to a real estate developer once it has been surveyed
6 A newspaper's skilled group of editors and reporters
7 Players under contract to an AFL team
8 Deposits received from customers of Harvey Norman for furniture not yet delivered to them
9 Profits earned by the company but not yet paid out to the owners as dividends
10 The parking lot surrounding Roselands Shopping Mall, Sydney
11 A guarantee a company has made on a bank loan owed by an associated company

PROBLEM 8.11

Recognition of liability

BRK Limited is being sued for \$3.5 million by a client for defamation resulting from statements made in newspapers by one of its executives. In each of the following situations, state whether a liability should be recognised in the balance sheet.

- 1 BRK receives legal advice that it is unlikely that the claim will be successful.
- 2 BRK receives legal advice that the claim has about a 50 per cent chance of being successful.
- 3 BRK receives legal advice that the claim is likely to be successful, with damages somewhere between \$500 000 and \$3 million.
- 4 BRK offers the client \$1 million in full settlement, but the client refuses.
- 5 At year-end, BRK is informed that legal costs to date are \$400 000, and they will increase substantially in the new year, depending on whether the matter goes to court or not.

PROBLEM 8.12

Recognition of liabilities in the balance sheet

State whether or not each of the following events would result in a liability being recognised in the accounts at 30 June. If so, what will the liability be called? If not, explain the reasons why it would not be recognised as a liability.

- 1 Taxes for the year ended 30 June, which are not payable until October.
- 2 Wages to be paid on 2 July to cover the two-week period up to 30 June.
- 3 The company sells washing machines and gives a one-year warranty to repair or replace any faulty machines.
- 4 A construction company receives a \$5 million advance in June for a contract. The work will commence in July.
- 5 The company has signed a contract to pay its managing director \$500 000 per annum (inflation adjusted) for the next four years.
- 6 On 1 June, the company is informed that it is being sued for damages of \$1 million caused by a faulty product. The company denies liability.
- 7 The company will go to arbitration in July to determine the amount of payment to repair environmental damage caused by one of its factories.

PROBLEM 8.13

Recognition of liabilities

Samantha is the accountant for Prior Ltd. How would you advise her to account for the following items in the financial statements, as at 30 June 2022?

- 1 A production manager was appointed on 1 May 2022 under a two-year contract that specifies an annual salary of \$50 000 for each of the two years. The contract can be terminated with six months' notice from either party.
- 2 The company pays, into a bonus pool, 5 per cent of the profits reported at the end of June for distribution to participating employees.
- 3 A subsidiary of Prior Ltd has just been placed in receivership. In April 2022, Prior Ltd signed as guarantor for an \$800 000 two-year loan from a finance company to the subsidiary.
- 4 Based on his experiences in previous years, the customer service manager expects warranty claims against sales made during 2022 to amount to \$70 000.
- 5 Gower and Co. is suing Prior Ltd for breach of contract. Samantha thinks Gower and Co. will probably lose the case.

PROBLEM 8.14

Liability recognition

Indicate whether each of the events described below results in a liability under the definitions and characteristics within the Framework. If so, show the amount of the liability. What would the liability be called?

- 1 A bank loan of \$10 000 is obtained, with the company signing an agreement to repay the amount in six months, together with interest of 8 per cent per annum.
- 2 Electricity used in the past month, worth \$230, has not been paid for.
- 3 A \$3000 cheque is received from a tenant for three months' rent in advance.
- 4 A company signs a two-year employment contract with a marketing manager. Employment begins next month, at a contract price of \$150 000 per year.

PROBLEM 8.15

Effects of an asset accounting change to market from cost

Beauport Ltd owns several parcels of land in the Sydney area. The area has been subject to wide swings in real estate values, and the general manager is doubtful that the historical cost basis is appropriate for use in

accounting for the company's land and buildings. Give short but careful answers to the following questions asked by the general manager.

- 1 'If we changed to market values for the real estate, instead of cost, would that make our balance sheet look better or worse?'
- 2 'Similarly for profit: would using market value instead of cost make us look more profitable or less profitable?'
- 3 'Does it matter what we do, as long as we disclose both cost and market value somewhere in our financial statements?'
- 4 In what way do the general manager's questions reflect a choice between the concepts of value in use and value in exchange?
- 5 What other bases for valuing the parcels of land and buildings would be available to the company?

PROBLEM 8.16

Authoritative standards, capital markets and contracts

Many of the accounting methods you are studying in this book are based on authoritative standards (such as AASB Statements), which attempt to specify how companies' financial accounting should be done. Such standards don't cover everything: companies must still make many choices when they are preparing their financial statements.

Why are there authoritative standards for companies to follow? Why don't they cover everything? Should we have more or fewer of them? Situate your answer in the context of this chapter's theories about information use.

PROBLEM 8.17

Capital markets, auditors and contracts

- 1 On 31 October 2021, analysts predicted that the earnings per share of Oakes Ltd would equal \$4.80 for the year ended 31 December 2021. Actual results were announced on 27 February 2022. Earnings per share for 2021 came to \$3.95. Consider the three dates noted above (31 October 2021, 31 December 2021 and 27 February 2022). On which of these dates would you expect to see share prices react to earnings information? Why? Can you predict the direction in which share prices would react on any of these dates? Explain why or why not.
- 2 Explain the importance of the audit function in the context of a large company where the ownership (composed of a large number of private investors) and the management are separated. To whom are the auditors primarily responsible? By whom are they hired? What would the investors expect of the auditors? Do your answers indicate anything that is inconsistent with the auditor's role as an independent party?
- 3 Agency theory describes the problems that are inherent when one party (the principal) hires a second party (the agent) to do work on the former's behalf. Choose one contractual relationship existing between parties connected with a corporation and describe this relationship in an agency theory context.

PROBLEM 8.18

Capital markets and contracts for a corporation

Choose any large, well-known corporation you are interested in, and answer the following questions, based on your choice.

- 1 What kinds of capital markets are likely to be important to the company?
- 2 Suppose those capital markets are efficient, and an unexpected and important piece of information about the company is released. What is likely to happen? Would it make a difference if the markets expected the information?
- 3 List some of the explicit, implicit or even casual contractual relationships between the company and other internal or external parties that are likely to be important to the company's success.

CASES

CASE 8A

Woolworths Limited

Refer to the full financial statements of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 Find each of the following and indicate the page:
 - a summary data on the company's performance
 - b a letter to shareholders from the company's chairperson of the board of directors or managing director
- 2 Peruse the list of assets in the balance sheet and the related notes. How are the assets valued? Are there 'assets' that are left out that you would have expected to see?
- 3 How are the concepts of fair value and value in use used by Woolworths?
- 4 What stock exchange is Woolworths Limited listed on? How many shares are issued? Look up a newspaper or online to discover its share price.
- 5 List three accounting-related events that are likely to increase the company's share price.
- 6 Are there any forms of incentive contracts in place for executives (see Woolworths' web page)?
- 7 What skills and experience does Woolworths suggest Board members need? (see page 43 of the annual report)

CASE 8B

Assets and liabilities

Read the following facts:

The merger between Northcorp and Carnation resulted in large losses for Northcorp resulting in a \$642.5 million write-down of goodwill and a \$240 million write-down of the value of the Carnation brand. Also the company recorded \$95 million in one-off provisions and restructuring costs.

- 1 Using the definition of an asset, explain why the assets discussed within this extract would be written down.
- 2 What accounting concepts would have been considered when determining the write-down of assets?
- 3 Using the definition of a liability, explain why the provision discussed within this extract may have been created.
- 4 Show the effect on profit of each of the amounts of \$642.5 million, \$240 million and \$95 million. What other accounts would be affected?
- 5 Provide possible journal entries for the items in question 4.

CASE 8C

Executive compensation plans

Find some newspaper or magazine articles about executive compensation. With capital market and agency (contract) theory as a background, discuss the compensation used by each company.

- 1 What features of each plan relate to the performance of the company's shares on the stock market?
- 2 What features of each plan relate to management's stewardship of the company on behalf of the shareholders?
- 3 What role does accounting information play in compensation for each company?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

8A \$50 000 for the one month's employment.

- 8B**
- 1 If a particular market is described as being efficient, it implies that publicly available information (such as public financial statements everyone can read) cannot be used to 'beat' the market. By the time an investor obtains the information and can act on it, the market would already have reacted to the information and incorporated it into share prices.
 - 2 Timely disclosure of information is important to capital markets in order to eliminate some traders gaining an advantage over others by having the information earlier.

- 8C** You would expect the managers of Green Limited to be more interested in the financial statements reflecting positive performance, as their remuneration is directly related to financial performance of the company. This may increase the chances of them selecting accounting policies that increase the company's profit (see Chapter 5). The auditor will consider these risk factors when conducting the audit.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1** Investments \$8500
- 2** Deposit on equipment \$5000
- 3** Inventory \$900
- 4** Nil, past transaction has not occurred
- 5** Nil, past transaction has not occurred
- 6** Inventory, $98\% \times \$1200 = \1176

PRACTICE PROBLEM B

- 1** No liability, no present obligation.
- 2** Liability – unearned revenue (also called 'revenue received in advance') \$240
- 3** Unearned revenue \$200 000
- 4** Wages payable \$24 500. Payroll tax payable \$1960
- 5** Nil, at this point. Potentially, a contingent liability

Sustainability reporting

9



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** explain the terms 'sustainability management' and 'sustainability reporting' (9.1)
- LO2** outline what information is generally reported in sustainability reports (9.2)
- LO3** identify who are the organisation's stakeholders and explain their information needs (9.3)
- LO4** describe the key reasons for the existence of sustainability reporting (9.4)
- LO5** explain the Global Reporting Initiative (GRI) guidelines and reporting criteria (9.5)
- LO6** provide examples of performance indicators used in sustainability reporting (9.5)
- LO7** explain how the United Nations Sustainable Development Goals (SDGs) inform sustainability reporting (9.6)
- LO8** explain the reasons for the increase in assurance of sustainability reporting (9.7)
- LO9** identify the objectives of integrated reporting (9.8)
- LO10** describe current initiatives to enhance sustainability reporting consistency (9.9).

CHAPTER OVERVIEW

Through Chapters 1 to 8, you have developed an understanding of the content presented in the three key financial statements – the balance sheet, the income statement and the statement of cash flows – and some other key aspects of the large annual reports produced by companies. It is now expected that companies provide shareholders and other key stakeholders with information on sustainability performance, including the impact of the organisation on the environment, such as its greenhouse gas (GHG) emissions and energy usage, workplace safety, and the communities in which it operates. For most companies, this information is also presented in the annual report. For some companies, a separate sustainability report and supporting metrics are published. In delivering the 2021 Bill Birkett Memorial Lecture, Steve Bingham (EY Asia-Pacific Technology Consulting Leader) emphasised the need for organisations to 'report and trace and prove' that they have achieved the goals in their sustainability plans. Given the expertise of accountants in measuring, reporting and assuring information, it is not surprising that accountants play an important role in sustainability reporting. This chapter introduces you to the concepts of sustainability reporting, as well as the standards and goals that guide the information presented in these reports. It also outlines recent trends and initiatives to encourage more informative and comparable sustainability reporting by organisations.

9.1 What is sustainability reporting?

LO1 In considering the nature of sustainability reporting, it is necessary to appreciate what is meant by sustainable development and sustainability management, and what sustainability information is being reported.

- Sustainable development is described as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
- Sustainability management is concerned with the maintenance and long-term enhancement of six types of capital that reflect an organisation's overall impact and wealth.

These six types of capital are defined as:¹

- *financial capital*: the pool of funds available to the organisation
- *manufactured capital*: manufactured physical objects available to the organisation, including buildings, equipment and infrastructure
- *intellectual capital*: knowledge-based intangibles available to the organisation, including intellectual property, systems and procedures
- *human capital*: capabilities, competencies and experience of individuals available to the organisation, as well as their motivations to innovate
- *social and relationship capital*: value added by internal and external relationships to the organisation
- *natural capital*: environmental resources (e.g. energy and water) and processes used by the organisation in producing goods and/or providing services.

These six types of capital relate to the organisation's environmental, social and economic performance, where environmental performance relates to natural capital, social performance relates to human capital and social and relationship capital, and economic performance (including financial performance discussed in earlier chapters) relates to the impact of the organisation on the wider economy, in addition to its own manufactured and financial capital.

A sustainability report provides information on the impacts that an organisation has on the environment, society and the economy. It assists organisations in setting goals, measuring performance and managing change in order to make their operations more sustainable. It provides stakeholders with disclosures on the effects the organisation has and contributions it makes to sustainable development through its strategies and activities.



HOW'S YOUR UNDERSTANDING?

- 9A** Select a company that you are familiar with, such as Woolworths, Transurban or any of the big four banks (ANZ, Commonwealth Bank, NAB, Westpac) and peruse its sustainability report.

How the concept of sustainability reporting has changed over time

The aim of the sustainability reports produced in the 1970s and 1980s was to consider the organisation's impact on people. These reports were referred to as social accounting, social responsibility accounting, or corporate social responsibility (CSR). As society's focus on environmental management increased through the 1990s, sustainability reports developed a greater focus on the organisation's environmental impacts (e.g., pollution). Through this period, triple bottom line (TBL) reporting was introduced to cover social, environmental and economic value creation. By the mid-2000s, this terminology was gradually replaced by the term 'sustainability reporting'. More recently, the term environmental, social and governance (ESG) reporting has been introduced to

capture social and environmental measures, as well as the internal systems, practices and procedures that the organisation has in place to manage sustainably, ethically and responsibly (i.e., governance).

It should be noted that different terminology is used by different countries and even across different organisations within the same country. For example, some Australian companies including BHP, NAB, Telstra and Woolworths use the term ‘sustainability report’, while ANZ uses ‘ESG report’. This book employs the more commonly used term ‘sustainability report’. Sustainability reports sometimes appear as part of the organisation’s annual report, but often appear as a separate report. Ideally, these reports will provide a balanced representation of sustainability performance for an organisation; that is, both positive and negative impacts.

9.2 What information is reported in sustainability reports?

With sustainability reporting largely voluntary, the content disclosed in sustainability reports varies considerably depending on the industry in which the organisation operates, the needs of stakeholders and the views of management.

LO2

Examples of disclosures include the following:²

1 Economic examples:

- *economic performance*, including financial implications of climate change-related risks and opportunities, and superannuation plan liabilities and the extent to which assets are sufficient to cover these
- *market presence*, including policies and practices relating to hiring staff locally
- *procurement practices*, including the proportion of the procurement budget spent on local suppliers
- *tax*, including whether the organisation’s tax strategy is publicly available, governance mechanisms to review and approve it, and how it links to sustainable development strategies.

2 Environmental examples:

- *energy*, including direct energy used, listed by source, and improvements in energy usage
- *biodiversity*, including areas of high biodiversity value near operational sites, listed by location, biodiversity attribute and protected status
- *emissions*, including direct and indirect greenhouse gas emissions and initiatives to reduce greenhouse gas emissions and the resulting achievements
- *supplier environmental assessment*, including the number of suppliers assessed for environmental impacts and those identified as having significant actual and potential negative environmental impacts.

3 Social examples:

- *occupational health and safety*, including the number of injuries, lost days and deaths
- *training and education*, including average hours on training provided to different employee categories.
- *diversity and equal opportunity*, including the proportion of diversity in the organisation’s governance bodies and across different employee categories
- *customer health and safety*, including the number of incidents of non-compliance with regulations and voluntary codes.

This content is often presented using a combination of quantitative and qualitative information, including narrative, pictures, tables and graphs.

In addition to a separate sustainability report and more detailed annual reports, many organisations also include sustainability information in key performance indicators. Exhibit 9.1 shows an extract from Westpac's summary of its performance in its 2021 Annual Report, including those on environment, sustainable lending and social impact.

In \$m unless otherwise stated	WESTPAC GROUP NON-FINANCIAL SUMMARY				
	2021	2020	2019	2018	2017
Environment					
Total Scope 1 and 2 emissions – Aust and NZ (tonnes CO ₂ -e)	61 832	107 634	121 168	128 339	134 237
Total Scope 3 emissions – Aust and NZ (tonnes CO ₂ -e)	71 738	91 616	87 262	90 454	94 279
Paper consumption – Aust and NZ (tonnes)	N/A	1 539	1 812	2 161	2 706
Carbon neutrality	Maintained	Maintained	Maintained	Maintained	Maintained
Sustainable lending					
Climate change solutions attributable financing – Aust and NZ (\$m)	10 862	10 059	9 263	9 113	6 979
Proportion of electricity generation financing in renewables including hydro – Aust and NZ (%)	79	75	75	71	65
Electricity generation portfolio emissions intensity (tonnes CO ₂ -e/MWh)	0.26	0.25	0.26	0.28	0.36
Finance assessed under the Equator Principles – Group (\$m)	816	126	454	773	891
Social Impact					
Community investment excluding commercial sponsorships (\$m)	144	153	130	128	164
Community investment as a percentage of pre-tax profits – Group (%)	1.69	3.58	1.33	1.09	1.42
Community investment as a percentage of pre-tax operating profit (cash earnings basis)	1.72	3.21	1.32	1.10	1.41
Financial education (participants)	1 246 198	1 009 232	619 995	133 844	112 263

Copyright Westpac Banking Corporation, 2021 Annual Report, p.133
(https://www.westpac.com.au/content/dam/public/wbc/documents/pdf/aw/ic/Annual_Report_Final_2021.pdf).

Qantas reports financial and non-financial metrics over a five year period. Their key performance indicators are presented in the following categories: Economic Integrity, Customer, Safety, Community, People and Environment³. The performance metrics for the Environment category are reproduced in Exhibit 9.2.

EXHIBIT 9.2

QANTAS GROUP

PERFORMANCE METRICS

Environment	Unit	2019/20	2018/19	2017/18	2016/17	2015/16
Aviation fuel consumption	000 Litres	3 689 670	4 888 697	4 931 466	4 873 267	4 805 045
Fuel per 100 RTKs (Group Efficiency)	Litres	37.95	36.2	37.1	37.6	37.7
CO ₂ e emissions – Total (Scope 1 & 2)	Tonnes	9 360 546	12 406 303	12 526 141	12 387 666	12 212 701
CO ₂ e emissions – Scope 1	Tonnes	9 276 620	12 285 422	12 390 319	12 248 233	12 038 055
CO ₂ e emissions – Scope 2	Tonnes	83 920	120 881	135 822	139 433	141 214
CO ₂ e emissions – Domestic	Tonnes	3 438 403	4 412 114	4 451 018	4 503 746	4 569 452
CO ₂ e emissions – International	Tonnes	5 922 143	7 994 189	8 075 123	7 883 921	7 643 249
CO ₂ e per 100 RTKs (Group Efficiency)	Kilograms	96.2	91.8	94.3	96	96
CO ₂ e emissions – Scope 3	Tonnes	882 401	1 212 055	N/A	N/A	N/A
CO ₂ e emissions – Total	Tonnes	10 242 101	13 618 358	N/A	N/A	N/A
Electricity (Australia)	MWh	101 941	144 955	168 807	169 466	172 092
Direct waste to landfill (Australia)	Tonnes	15 166	13 209	21 292	20 635	21 972
Water (Australia)	000 Litres	477 856	800 019	895 100	902 545	973 611
Natural gas (Australia)	GJ	109 424	165 586	204 556	218 797	229 630
Diesel (Australia)	Litres	4 215 738	5 413 826	6 228 261	6 115 161	6 370 835
Average aircraft age – scheduled passenger fleet	Years	11.9	11.1	10.3	9.6	8.6

Qantas Group, Financial and Non-financial Metrics © Qantas Airways Limited.

9.3 Do stakeholders require more than financial reporting?

Who are the stakeholders and what information do they need?

Sustainability reporting involves both engagement and communication with stakeholders. Stakeholders are those groups in society that affect the organisation or can be affected by the organisation. Stakeholders typically include shareholders, employees, suppliers, customers, communities (particularly local communities) and the government. However, some organisations can have a wider range of stakeholders, including regulatory bodies, joint venture partners, opinion leaders, unions and representative groups. Different stakeholders will have different interests that will sometimes conflict; for example, in terms of the optimal number of staff employed, shareholders may have different interests from local communities. The number of stakeholders, their level of involvement and the type of involvement is also likely to vary between firms. For example, mining companies are likely to have considerable stakeholder involvement from the local community, including farmers and traditional land owners.

LO3

As an example of the role of stakeholders in sustainability reporting, let's consider Transurban Limited, a toll road owner and operator. It has assets in Australia and the United States. Transurban owns and operates many of the roads you are likely to have travelled on, including the M1, M2, M5 and M7 motorways in Brisbane, CityLink and the West Gate Tunnel in Melbourne, and the M2, M4, M5 and M7 motorways, plus the Eastern Distributor and Lane Cove Tunnel in Sydney. Transurban's ESG web page notes that: Transurban has a long-standing commitment to sustainability which is consistent with our purpose – to strengthen

communities through transport. We recognise that to provide long-term value for investors and meet the needs of each of our stakeholder groups, we must deliver more than just financial returns.⁴ Transurban has conducted a series of engagement sessions with internal and external stakeholders to identify the current issues and future priorities for its sustainability program. Included in these discussions were employees, investors, road authorities, industry leaders and research institutions.

BHP has many international operations and its mines are often in remote areas of these countries. Therefore, its activities are likely to have a significant impact on local communities. These impacts include: being a major employer in these communities; effects on the local environment, including the use of scarce water resources in competition with other users, and its reduction of environmental impacts through restoration activities; and giving back to the community through the support of community activities. We would therefore expect local community to be included in its list of stakeholders, which is what we find on the BHP sustainability website.⁵ Stakeholders are listed as:

- customers
- employees
- host governments
- industry peers and associations
- indigenous peoples
- investment community
- labour unions
- local communities
- media
- non-government organisations (NGOs) and civil society
- shareholders
- society partners
- suppliers.

STAKEHOLDER ENGAGEMENT

Organisations need to understand the way they affect their stakeholders. This involves identifying stakeholders and prioritising this list of stakeholders. This process is called stakeholder engagement and is used by the organisation to identify, understand and respond to sustainability issues. The stakeholder engagement process comprises the following steps:

- 1 involving stakeholders in developing and achieving responses to sustainability issues;
- 2 determining the relevance and significance of sustainability issues to the organisation and its stakeholders; and
- 3 communicating with stakeholders and responding to stakeholder issues that affect the organisation's sustainability performance.

The following example comes from the Commonwealth Bank's stakeholder engagement approach⁶:

- Achieving our vision requires us to build trusted and mutually beneficial relationships with our stakeholders, which long term supports our long-term success and sustainability.
- Our stakeholders are varied. The way we engage reflects the preferences of different groups.
- A range of internal networks are used to share insights and information from external stakeholder engagement and workshop and implement actions.

Common groups with which the Commonwealth Bank engages include customers, employees, investors community, suppliers, government and regulators, media, community organisations, and service providers and academics.

Below are the topics and engagement mechanisms for four of these stakeholder groups:

Stakeholder group	Topic and engagement mechanism
Customers	Ongoing reviews of satisfaction, feedback and complaints related to products, service and inclusion: <ul style="list-style-type: none">• Multi-channel engagement, including face-to-face customer engagement• Independent and proprietary customer surveys• Customer workshops• Community group surveys• Customer advocate• Call centres and complaints channels• Social media• Engagement with customer representatives and bodies• Meetings with relationship managers• Meetings with advisers• External dispute resolution
Employees	Ongoing reviews of employee engagement and feedback culture, strategy and priorities through: <ul style="list-style-type: none">• Group wide surveys• Ad hoc surveys• Digital and social platforms• Team meetings and exercises• Employee events and Town Halls• CEO and Group Executive mailboxes• SpeakUP Hotline
Investors community	Ongoing discussions regarding performance and performance related matters through: <ul style="list-style-type: none">• Financial and non-financial reporting• Briefings• Meetings• Annual General Meeting• Surveys
Suppliers	Ongoing discussions related to commercials, standards and issues: <ul style="list-style-type: none">• Supplier meetings, briefings and workshops• Risk assessments• SpeakUP Hotline• Innovation programs• Supplier Code of Conduct and Sustainability Questionnaire• Partner and customer surveys

Source: Commonwealth Bank Stakeholder Engagement Approach

9.4 Why do organisations produce sustainability reports?

The number of organisations preparing sustainability reports is increasing, both in Australia and the rest of the world. Here we outline a range of reasons for this trend:

- *Demonstrating transparency:* organisations often wish to demonstrate their commitment to managing environmental, social and economic impacts, and delivering long-term value creation. They can do this through sustainability reporting.
- *Improving sustainability performance:* by measuring and reporting on sustainability, organisations have information to make more informed decisions and engage in dialogue to improve their sustainability performance.

- *Creating financial value:* in preparing sustainability reports, organisations collect and analyse data and often assess business processes. These processes can lead to opportunities for cost savings through more efficient use of resources and materials.
- *Enhancing reputation:* it is important to manage stakeholders' perception of the organisation's environmental, social and economic dimensions, and in doing so enhance the organisation's reputation.
- *Achieving continuous improvement:* the process of externally reporting sustainability performance information focuses attention on the integrity of the data and the need for continuous improvement across different performance areas. Establishing performance goals and quantified targets that are incorporated in these reports often then leads to internal change.
- *Improving regulatory compliance:* by increasing the quality and quantity of voluntary disclosures, companies are likely to reduce future regulatory intervention.
- *Strengthening risk awareness and management:* management of risk is a key area of corporate governance, and sustainability reports help the organisation demonstrate it is managing this aspect of risk, for example, the financial risk of climate change.
- *Encouraging innovation:* better understanding of stakeholders' concerns, needs and expectations often leads to the development of changes within the organisation, including innovative products and services that meet sustainability requirements.
- *Raising awareness, motivating and aligning staff, and attracting talent:* both present and prospective employees have views and expectations about sustainability issues and this is a major driver of sustainability reports, which help to keep employees informed and assist the organisation to attract new employees.
- *Attracting long-term capital and favourable financial conditions:* increasingly investors take sustainability issues into account in their decision-making processes and in some instances stock exchanges require sustainability information be reported. Sustainability reports enable companies to inform these groups and also investment analysts, which is expected to affect their valuations of the company.
- *Maintaining a licence to operate:* many organisations recognise the link between business success and an ongoing licence to operate. Particularly in the resources sector, where both communities and other stakeholders are better able to engage with and more likely to support organisations that openly report on sustainability issues.

A survey of sustainability disclosures, the KPMG Survey of Sustainability Reporting 2020 (hereafter, the KPMG 2020 report), includes the top 250 companies listed on the Fortune Global 500 ranking for 2019 (referred to as G250) and the largest 100 companies by revenue (referred to as N100) in each of the 52 countries included in the survey.

The purpose of the survey is to examine trends in key aspects of sustainability reporting. It is based on publicly available information in annual financial reports, sustainability reports and on company websites. Sustainability reporting between 1 July 2019 and 30 June 2020 is generally used in the KPMG 2020 report. We refer to some of the results from the report in this chapter.

9.5 Criteria for sustainability reporting

LO6 While the disclosure of financial information is regulated under company law and by accounting standards, what is disclosed in sustainability reports has traditionally been determined by the organisation reporting. This has led to concerns from stakeholders about completeness of information, as well as very different reporting between organisations making comparisons difficult.

Suitable criteria

The Global Reporting Initiative (GRI) Sustainability Reporting Standards, referred to as the GRI Standards, are the most commonly used guidelines to aid organisations in their sustainability and reporting practices, with 67 per cent of N100 and 73 per cent of G250 companies aligned to the GRI Standards, as reported in the KPMG 2020 report.

The GRI Standards set out principles and indicators that organisations can use to measure and report on their economic, environmental and social performance. The benefit of using a consistent framework is that it allows comparability over time and between organisations.

The GRI Standards can be useful for:

- increased understanding of risks and opportunities
- emphasising the link between financial and non-financial performance
- influencing long-term management strategy and policy, and business plans
- benchmarking and assessing sustainability performance with respect to laws, norms, codes, performance standards and voluntary initiatives
- demonstrating how the organisation influences and is influenced by expectations about sustainable development
- comparing performance internally, and between organisations and sectors.

The GRI Standards provide reporting principles, standard disclosures and an implementation manual for the preparation of sustainability reports by organisations. The standard disclosures contain both general and specific disclosures. The specific disclosures are divided into three categories of non-financial indicators: economic, environmental and social. Examples of these specific disclosures appear in Exhibit 9.3.

EXHIBIT 9.3**GRI SUSTAINABILITY REPORTING STANDARDS****EXTRACTS FROM TOPIC-SPECIFIC STANDARDS****Economic****Economic performance:**

- direct economic value generated and distributed, including revenues, operating costs, employee wages and benefits, payments to providers of capital, payments to government and community investments
- financial implications and other risks and opportunities for the organisation's activities due to climate change
- financial assistance received from government

Market presence:

- ratios of standard entry-level wage by gender compared to local minimum wage at significant locations of operation
- proportion of senior management hired from the local community at significant locations of operation

Indirect economic impact:

- development and impact of infrastructure investments and services supported

Procurement practices

- percentage of the procurement budget used for significant locations of operation that is spent on suppliers local to that operation (such as percentage of products and services purchased locally)

Anti-corruption:

- total number and percentage of operations assessed for risks related to corruption and the significant risks identified

Anti-competitive behaviour:

- total number of legal actions for anti-competitive behaviour, anti-trust and monopoly practices and their outcomes

Tax:

- tax jurisdictions where entities are resident for tax purposes, including primary activities of the organisation, number of employees, profit/loss before tax and corporate income tax paid





Environment

Materials:

- total weight or volume of materials that are used to produce and package the organisation's primary products and services

Energy:

- energy consumption within the organisation
- reduction of energy consumption

Water and effluents:

- total water withdrawal by source percentage and total volume of water recycled and reused
- total volume of water discharge by quality and destination

Biodiversity:

- description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas

Emissions:

- direct greenhouse gas emissions (Scope 1)
- energy indirect greenhouse gas emissions (Scope 2)
- other indirect greenhouse gas emissions (Scope 3)
- reduction of greenhouse gas emissions

Waste:

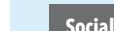
- total weight of waste by type and disposal method

Environmental compliance:

- monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations

Supplier environmental assessment:

- percentage of new suppliers that were screened using environmental criteria
- negative environmental impacts in the supply chain and actions taken



Social

Employment:

- total number and rates of new employee hires and employee turnover by age group, gender and region

Labour/management relations:

- minimum notice periods regarding operational changes

Occupational health and safety:

- type of injury and rates of injury, occupational diseases, lost days and absenteeism, and total number of work-related fatalities, by region and by gender

Training and education:

- average hours of training that employees have undertaken by gender and employee category

Diversity and equal opportunity:

- composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership and other indicators of diversity

Non-discrimination:

- total number of incidents of discrimination and corrective actions taken

Freedom of association and collective bargaining:

- description of operations and suppliers in which the right to freedom of association and collective bargaining may be at risk and measures taken to support freedom of association and collective bargaining



**Child labour:**

- operations and suppliers identified as having significant risk for incidents of child labour, and measures taken to contribute to the effective abolition of child labour

Forced or compulsory labour:

- operations and suppliers identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of all forms of forced or compulsory labour

Security practices:

- percentage of security personnel who have received formal training in the organisation's human rights policies or specific procedures and their application to security

Rights of Indigenous peoples:

- total number of identified incidents of violations involving the rights of Indigenous peoples and actions taken

Human rights assessment:

- total number and percentage of operations that have been subject to human rights reviews or human rights impact assessments

Local communities:

- percentage of operations with implemented local community engagement, impact assessments and development programs

Supplier social assessment:

- percentage of new suppliers that were screened using social criteria

Public policy:

- total monetary value of financial and in-kind political contributions made directly and indirectly by country and recipient/beneficiary

Customer health and safety:

- total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes

Marketing and labelling:

- total number of incidents of non-compliance with regulations and/or voluntary codes concerning product and service information and labelling, by type of outcomes
- total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship, by type of outcomes

Customer privacy:

- total number of substantiated complaints received concerning breaches of customer privacy
- total number of identified leaks, thefts, or losses of customer data

Socioeconomic compliance:

- total monetary value and number of significant fines and non-monetary sanctions for non-compliance with laws and/or regulations in the social and economic area, and cases brought through dispute resolution mechanisms

Adapted from Global Reporting Initiative, *GRI Sustainability Reporting Standards 2020*.

9.6 Alignment with Sustainable Development Goals

In 2015, the United Nations (UN) adopted 17 Sustainable Development Goals (SDGs), as part of the 2030 Agenda for Sustainable Development.⁷ These goals are aimed at ending poverty and protecting the planet, while ensuring that all people can enjoy peace and prosperity. The SDGs are integrated, so that actions in

LO7

one area are expected to affect outcomes in other areas. As such, they are based on the principle that development needs to balance economic, environmental and social sustainability.

Some of the economic-focused SDGs include:

- SDG 8 – Decent Work and Economic Growth
- SDG 9 – Industry, Innovation and Infrastructure
- SDG 12 – Responsible Consumption and Production.

Environmentally focused SDGs include:

- SDG 7 – Affordable and Clean Energy
- SDG 13 – Climate Action
- SDG 14 – Life Below Water.

Socially focused SDGs include:

- SDG 2 – Zero Hunger
- SDG 3 – Good Health and Well-Being
- SDG 4 – Quality Education.

In 2017, the World Economic Forum's International Business Council (IBC) led a campaign resulting in more than 140 CEOs committing to align their corporate values and strategies with the SDGs. This has seen a major shift in the number of organisations globally that align their business activities with the SDGs in their sustainability reporting.

The KPMG 2020 report finds that 69 per cent of N100 and 72 per cent of G250 companies now align their business activities with the SDGs in their sustainability reporting. These figures have increased from 39 per cent and 43 per cent respectively in 2017. The most commonly prioritised SDGs in these sustainability reports are SDG 8 – Decent Work and Economic Growth, SDG 12 – Responsible Consumption and Production and SDG 13 – Climate Action.

The KPMG 2020 report also notes that most sustainability reporting on the SDGs discusses the impact the organisation has on these goals, though often without specific SDG targets. The disclosures focus primarily on positive contributions made by the organisation, with less transparency relating to negative impacts. Given the largely voluntary nature of reporting in this space, this is the challenge stakeholders face in reviewing sustainability reports. How do we begin to address this challenge? More on that in the next section.



HOW'S YOUR UNDERSTANDING?

9B Review the sustainability report of the company you selected previously. See which UN SDGs they refer to in their reporting.

9.7 Trends in sustainability reporting

Assurance

LO8 As discussed in Chapter 5, it is mandatory for financial reports to be audited each year; in contrast, for sustainability reports, assurance is voluntary. However, the number of large companies having their sustainability report assured is increasing and there is a strong trend among companies to have their sustainability reports assured by independent third parties. The aim of assurance is to validate and provide credibility to these reports. Some drivers towards this trend of increased assurance include increasing credibility with external stakeholders, meeting the requirements of sustainability indices, and obtaining more reliable internal data.

While financial statements are audited by accountants, sustainability reports may be audited by a range of third-party assurers including the major accounting firms who carry out this assurance work.

Australia's largest public companies employ a mixed approach as to who assures their sustainability reports; some are assured by the Big Four accounting firms, while others use specialist sustainability assurers which are outside the accounting profession. There are also differences between companies on whether all the contents of sustainability reports are assured. Many of the large companies, including BHP, Commonwealth Bank and Wesfarmers, have assurance on sections of their sustainability reports, and it is likely that they choose only those areas that are of great importance to their stakeholders.

As an example of the procedures performed by a client engagement team to assure a sustainability report, consider the following list of assurance work carried out by PricewaterhouseCoopers on the Westpac 2020 Sustainability Performance Report:

- Making enquiries of relevant management of Westpac regarding the processes and controls for capturing, collating and reporting the performance data within the selected subject matter
- Interviewing selected members of the Westpac Executive team, business unit personnel and group level management to understand the key sustainability matters relevant to Westpac
- Testing the arithmetic accuracy of a sample of calculations of the selected performance indicators
- Reconciling the selected performance indicators to underlying data sources
- Reviewing the Westpac Group 2020 Sustainability Performance Report to assess whether it meets the disclosure requirements of AA1000 and the GRI Standards
- Undertaking analytical procedures over a sample of the selected performance indicators
- Reviewing a sample of relevant management information and documentation supporting assertions made in the selected subject matter.

Source: PricewaterhouseCoopers on the Westpac 2020 Sustainability Performance Report.



FOR YOUR INTEREST

A research study in Australia by Moroney, Windsor and Aw⁸ found evidence that the existence of assurance was associated with enhanced quality of voluntary environmental disclosures.

Energy efficiency and climate change

The 2020 KPMG report finds that a majority of organisations now link their carbon reduction targets to external climate targets established by governments and others. With rising energy costs and growing concerns over the effects of climate change, the measurement, reporting and verification of information related to energy use, greenhouse gas emissions and climate change more broadly is an increasingly common business practice. These forms of environmental disclosure are of use to a variety of stakeholders including:

- *business managers*: who set targets in an effort to manage costs
- *governments*: to inform emissions trading schemes and to assist in policy formulation and international reporting obligations
- *investors*: who seek to understand how increasing energy costs and climate change may impact business strategy, performance and prospects
- *other internal and external stakeholders*: who are interested in understanding the environmental impacts of business processes.

Supply chain operations

Many organisations now recognise that their responsibility to the environment and to society encompasses more than simply their own activities, and that the activities of their supply chain (including the various parties that supply them with goods and services) may also have an impact. This trend is evolving in

response to stakeholders holding businesses to account for the activities of others within their supply chains, and the potential negative impact on their reputation and value.

For example, a particular business may face criticism from stakeholders and loss of customers if one of its suppliers is causing large-scale environmental damage in the production of its supplies. Although the selling organisation may have very good internal environmental practices, it may be held responsible for facilitating environmental damage as it is purchasing from the supplier responsible for that damage.

Consequently, some organisations are creating codes of conduct for their supply chains, which their suppliers must follow in order to conduct business. For example, some large companies have a supplier sustainability program in place as they believe that the conduct of its suppliers can also affect its own sustainability performance and reputation. These programs often encompass sustainability areas such as corporate governance, environmental management, occupational health and safety, workforce policies and human rights, risk management, supply chain management, community and supplier diversity.

Greater integration showing valuation creation

The 2020 KPMG report finds evidence of a trend towards combining both financial and non-financial data in a single annual report. Some organisations are using the principles of integrated reporting, which is defined in section 9.8 of this chapter, to present this information. They report that 25 per cent of the organisations surveyed focused their reporting on value creation and not just historic financial earnings.

9.8 Integrated reporting

Is there a need for a new reporting direction?

LO9 The operating context for an organisation has changed dramatically in recent decades. An organisation faces new demands in the areas of corporate governance, accountability and transparency, especially in the wake of global financial crises. Organisations are also called upon to be more socially responsible to employees, customers and the broader community. Issues such as environmental concerns, resource scarcity and population growth are emerging strategic challenges for organisations. These issues are complex, far-reaching and interdependent.

In this context, the information required to assess an organisation's current performance and future prospects has changed considerably – moving beyond the scope of the traditional organisational reporting model. To meet these information needs, organisations are disclosing increasing amounts of complex information on a wide variety of topics (such as employees, corporate governance, management commentary and sustainability). Until recently, these new areas of disclosure evolved isolated from each other, considerably increasing the burden on organisations preparing these varied disclosures, and on users trying to understand them. Moreover, the linkages between different types of information (such as the link between carbon emissions and the impacts on revenues and expenses) have not always been easy to identify. Integrated reporting is emerging as a framework to support the future of reporting and to address these problems.

What is integrated reporting?

Integrated reporting is defined as:

a process founded on integrated thinking that results in a periodic integrated report by an organization about value creation over time and related communications regarding aspects of value creation.

An integrated report is a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value in the short, medium and long term.

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<https://integratedreporting.org/>

As stated in the KPMG Survey of Corporate Reporting 2020:

The COVID-19 disclosures of most companies have not only focused on the financial impacts of the pandemic, but also its implications for their employees, customers, suppliers and the broader community and how they have provided support where possible. Regulatory and other market-led initiatives have also driven an improvement in reporting on climate change risk and opportunity.

Source: KPMG Corporate Reporting 2020, A review of corporate reporting trends in the year to 30 June 2020 across the ASX 200 and beyond, p. 2.

Ideally, an integrated report should become an organisation's primary reporting vehicle, combining various and disparate types of reporting, including:

- management commentary
- governance and remuneration reporting
- financial statements
- sustainability reporting.

THE PRINCIPLES OF INTEGRATED REPORTING

The International Integrated Reporting Council (IIRC) was formed in 2010 to be the international authority on integrated reporting and to build consensus and clarity around the concept. The aim was to develop a globally accepted framework for integrated reporting. The IIRC is a team that includes regulators, investors, companies, standard-setters and the accounting profession.

After extensive consultation and testing by businesses and investors from all regions of the world, the IIRC released the *International Integrated Reporting Framework* in 2013. The framework provides guiding principles and elements to develop the content of an integrated report.

The 2021 *International Integrated Reporting Framework (<IR> Framework)* provides guiding principles to be applied by those organisations preparing an integrated report, and to distinguish integrated reporting from previous financial reporting models.⁹ These include:

- *Strategic focus and future orientation*: An integrated report should provide insight into the organization's strategy, and how it relates to the organization's ability to create value in the short, medium and long term, and to its use of and effects on the capitals
- *Connectivity of information*: An integrated report should show a holistic picture of the combination, interrelatedness and dependencies between the factors that affect the organization's ability to create value over time
- *Stakeholder relationships*: An integrated report should provide insight into the nature and quality of the organization's relationships with its key stakeholders, including how and to what extent the organization understands, takes into account and responds to their legitimate needs and interests
- *Materiality*: An integrated report should disclose information about matters that substantively affect the organization's ability to create value over the short, medium and long term
- *Conciseness*: An integrated report should be concise
- *Reliability and completeness*: An integrated report should include all material matters, both positive and negative, in a balanced way and without material error
- *Consistency and comparability*: The information in an integrated report should be presented: (a) on a basis that is consistent over time; and (b) in a way that enables comparison with other organizations to the extent it is material to the organization's own ability to create value over time.

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These principles have come about due to a desire to change the traditional financial reporting model. As outlined by the International Integrated Reporting Council, *Towards Integrated Reporting 2011*, some of the

limitations of the current reporting model, and how integrated reporting aims to address these limitations are discussed as follows.

Thinking	Isolated	»	Integrated
Because traditional reporting occurs in silos, it encourages thinking in silos. Integrated Reporting, on the other hand, reflects, and supports, integrated thinking – monitoring, managing and communicating the full complexity of the value creation process and how this contributes to success over time. Integrated Reporting demonstrates the extent to which integrated thinking is occurring within the organization.			
Stewardship	Financial capital	»	All forms of capital
An Integrated Report displays an organization's stewardship not only of financial capital, but also of the other 'capitals' (manufactured, human, intellectual, natural and social), their interdependence and how they contribute to success. This broader perspective requires consideration of resource usage and risks and opportunities along the organization's full value chain.			
Focus	Past, financial	»	Past and future, connected, strategic
Annual reporting at present is largely focused on past financial performance and financial risks. Other reports and communications may cover other resources and relationships, but they are seldom presented in a connected way, or linked to the organization's strategic objectives and its ability to create and sustain value in the future.			
Timeframe	Short term	»	Short, medium and long term
Much of the media and regulatory attention in response to the global financial crisis has focused on 'short-termism' as one contributory factor. Although short-term considerations are important in many ways, placing them in context is also essential. Integrated Reporting specifically factors in short-, medium- and long-term considerations.			
Trust	Narrow disclosures	»	Greater transparency
Financial reporting focuses primarily on a narrow series of mandated disclosures. Although an increasing number of organisations are improving their transparency, for example, through voluntary sustainability reporting, in absolute terms that number is still low. By emphasizing transparency, for example, covering a broader range of issues and disclosing the positive with the negative, Integrated Reporting helps to build trust.			
Adaptive	Rule bound	»	Responsive to individual circumstances
Today's reporting is often said to be too compliance orientated, reducing the scope for organizations to exercise an appropriate amount of judgement. While a certain level of compliance orientation is necessary to ensure consistency and enable comparison, Integrated Reporting offers a principles-based approach that drives greater focus on factors that are material to particular sectors and organizations. It permits an organization to disclose its unique situation in clear and understandable language.			
Concise	Long and complex	»	Concise and material
Long and complex reports are often impenetrable for many readers. A key objective for Integrated Reporting is to declutter the primary report so that it covers, concisely, only the most material information.			
Technology enabled	Paper based	»	Technology enabled
While the internet and XBRL are introducing elements of technological innovation, many corporate reports are still presented as if they were entirely paper based. Integrated Reporting takes advantage of new and emerging technologies to link information within the primary report and to facilitate access to further detail online where that is appropriate.			

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What is driving the move towards integrated reporting?

Integrated reporting represents a significant change from our current approach to reporting. Listed below are some of the key drivers that have paved the way for the introduction of integrated reporting:

- *internal management drivers:* One of the main drivers for this new form of reporting comes from reporting organisations themselves. Managers of many organisations have found that there are benefits available to their organisations by considering the relationships between financial and non-financial issues, and understanding the social, environmental and economic context their organisations operate in. Integrated

reporting provides a platform for better understanding how value is created in their organisations and promoting improved decision-making. Integrated reporting should also reduce the compliance burden of reporting individually to separate stakeholder groups.

- *development of sustainability measures and frameworks:* In response to escalating stakeholder demands for information, the disclosure of non-financial sustainability information has become increasingly common. These new approaches have provided the information and structure that have helped many organisations to explore the non-financial disclosures that are a crucial part of an integrated report.
- *policy and regulatory changes:* Government policy has been introduced in several countries to mandate or encourage the reporting of non-financial information, including in France, the United States, Denmark and Sweden, as well as the European Commission. In addition, several stock exchanges have voluntary or mandatory requirements to disclose non-financial information, including the Bursa Malaysia, the Singapore Stock Exchange and the Shanghai Stock Exchange. Sustainability indices and scores have also proliferated in recent years (such as the FTSE4Good), which create an additional compliance burden for listed reporting organisations. In South Africa, integrated reporting has become mandated for all companies listed on the Johannesburg Stock Exchange. Companies follow a 'comply or explain' basis, meaning that they must comply or, if they do not, they have to explain why. The result is that most companies provide the necessary information rather than facing the difficulty of explaining why the requirements are not relevant to them.

The content of an integrated report

The <IR> Framework defines eight content elements for an integrated report. The framework does not prescribe a standard format for the report; however, it poses questions for the organisation, under each of the elements, to then identify what information should be reported. The eight content elements defined in the <IR> Framework for integrated reporting are as follows:

- *Organizational overview and external environment:* What does the organization do and what are the circumstances under which it operates?
- *Governance:* How does the organization's governance structure support its ability to create value in the short, medium and long term?
- *Business model:* What is the organization's business model?
- *Risks and opportunities:* What are the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term, and how is the organization dealing with them?
- *Strategy and resource allocation:* Where does the organization want to go and how does it intend to get there?
- *Performance:* To what extent has the organization achieved its strategic objectives for the period and what are its outcomes in the terms of effects on the capitals?
- *Outlook:* What challenges and uncertainties is the organization likely to encounter in pursuing its strategy, and what are the potential implications for its business model and future performance?
- *Basis of presentation:* How does the organization determine what matters to include in the integrated report and how are such matters qualified or evaluated?

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The National Australia Bank (NAB) Annual Review 2020 is a document prepared on an integrated basis. NAB participated in the IIRC Integrated Reporting pilot program and continues to produce integrated reports. The '2020 at a Glance' page of the NAB's Annual Review 2020 (reproduced in Exhibit 9.4) highlights some of the unique parts of an integrated report

EXHIBIT 9.4

NATIONAL AUSTRALIA BANK

PERFORMANCE HIGHLIGHTS

2020 AT A GLANCE

► KEY FINANCIAL PERFORMANCE MEASURES¹



Statutory net profit
\$2.56BN

Cash earnings²

\$3.71BN

36.6% decrease from 2019

Cash earnings^{2,3} ex large notables of \$1.02bn

\$4.73BN

25.9% decrease from 2019

Dividend per share
(for the full year)

\$0.60

\$1.06 lower than 2019

► OTHER KEY PERFORMANCE MEASURES



Strategic Net Promoter Score⁴
-11

109 basis points increase from 2019,
#2 amongst major banks

SME Guarantee Scheme

>\$600M

Approved in Business Support Loans under Australian Government's Coronavirus SME Guarantee Scheme



Customers assisted experiencing financial hardship⁵
26,621

5 point increase from 2019,
35.3% increase from 2019



Colleague engagement score⁶
76

5 points above our 2020 target of 71

Supporting communities through crisis and recovery

\$5M

Committed to support customers, colleagues and communities impacted by the bushfires

>148,000

Business and home loan customers supported with deferrals

1. For more information on how we have performed and created value for our stakeholders this year, refer to How we create value on [page 9](#) and Our performance on [pages 23-24](#).

2. Information is presented on a continuing operations basis, unless otherwise stated. Prior periods have been restated for the presentation of MLC Wealth as a discontinued operation. Cash earnings is not a statutory financial measure, is not presented in accordance with Australian Accounting Standards, and is not audited or reviewed in accordance with Australian Auditing Standards. NAB's audited financial statements, prepared in accordance with the Corporations Act 2001 (Cth) and Australian Accounting Standards, are set out in NAB's [2020 Annual Financial Report](#).

3. 2020 Annual Financial Report includes all items of cash earnings to statutory net profit attributable to the shareholders of NAB, as also set out on [page 22](#) of NAB's 2020 Annual Financial Report.

4. Cash earnings large notables items after tax: customer-related net cash inflows deferred, a discount of non-cash items and a reduction of statutory net profit attributable to owners of NAB is set out in Note 2 of NAB's [2020 Annual Financial Report](#).

5. Net Promoter™ and NPS® are registered trademarks of Bain & Company, Satmetrix Systems and Fred Reichheld. Strategic NPS: Sourced from DBM Atlas, measured on a six month rolling average.

6. Definition has been updated to give all customers within the Business and Consumer Segments equal voice. The overall Strategic NPS result combines the Consumer and Business segment results using a 50% weighting for each. This has replaced "NPS priority segments" previously reported by NAB, which was a simple average of four customer segments (Home Owners, Investors, Small Business and Medium Business). Data is presented comprising September 2019 to September 2020 figures.

5. Number of unique primary customers approved with hardship assistance for home loans, credit cards and personal loans. Note this number reflects customers who have been referred to NAB Assist, and is not inclusive of customers with an active deferral as at 30 September 2020.

6. 2020 Employee Engagement Survey conducted by Glimt, score based on July 2020 survey. Australia and New Zealand colleagues, population excludes external contractors, consultants and temporary colleagues. 2020 methodology differs from prior years.

Source: © National Australia Bank, *Annual Review 2020*, p. 7. <https://www.nab.com.au/content/dam/nabrd/documents/reports/corporate/2020-annual-review-pdf.pdf>

There are a number of points to note about the NAB's review document:

- *It is a review, not an annual report:* This document is offered in addition to the bank's *2020 Annual Financial Report* and the *Sustainability Report 2020*.
- *The format is brief, concise and linked to other information:* Only the most material information about NAB is contained in the review (it is 38 pages long, compared with the 216 pages of the *2020 Annual Financial Report* and 49 pages of the *Sustainability Report 2020*). The review points to further performance measures and information that are made freely available on the NAB website.
- *It reflects the company's strategy and ambition:* For NAB, preserving a financial return and maintaining cash flow and profit levels are crucial to the success of the organisation, and this is shown by highlighting these upfront. This page also shows that NAB considers issues such as colleague engagement, community investment and customers experiencing financial hardship, consistent with NAB's ambition documented in the *Annual Review 2020* to 'serve customers well and help our communities prosper'.
- *Non-financial measures are included:* Not all of the key figures on this performance highlights page reflect financial outcomes. Colleague engagement score is a non-financial measure based on survey data. While the figure for community investment is a financial measure, it reflects an input rather than a return.
- *The audience for this report is varied:* A variety of users could find this information useful – capital providers and those with a financial stake in the organisation, as well as employees, customers, communities and the government.

- Measures are linked to strategy: Linking the organisational strategy to performance measures and reporting is an important part of an integrated report. Each of the measures on the performance highlights page is linked to a strategic focus for NAB, which is discussed in more detail later in the review.

Assurance of integrated reporting

Integrated reporting does present some challenges for the assurance profession. First, the breadth of information types contained in an integrated report is much greater. An integrated report may include disclosures on carbon emissions, management strategies, customer satisfaction or employee engagement. These represent new areas of knowledge for accountants, with different measurement approaches, different materiality levels, and different disclosure standards and regulations.

Second, the scope and flexibility of the integrated reporting approach further extends the challenge for assurance providers. They will need to change their approach as companies move away from the standardised financial reporting format to a report that contains a variety of material issues that are specific to an organisation. For example, the content areas of strategy, organisational model or future plans extend the scope of a traditional assurance engagement and also present extra risks for the assurers.

The NAB Annual Review 2020 discussed previously was subject to a limited assurance engagement by the audit firm Ernst & Young (EY). This is common practice for integrated reports, given the nature of the holistic performance metrics used and the complex judgements required in their measurement. In the short term, most assurance of integrated reports is likely to remain on a limited basis, as auditors and assurance providers build their experience, capacity and skills in this area.

The IAASB released a discussion paper in 2016 which identifies 10 assurance challenges to integrated reports and other emerging forms of external reporting (EER). The assurance challenges include:

- 1 Determining the scope of an EER assurance engagement can be complex.
- 2 Evaluating the suitability of criteria in a consistent manner.
- 3 Addressing materiality for diverse information with little guidance in EER frameworks.
- 4 Building assertions for subject matter information of a diverse nature.
- 5 Lack of maturity in governance and internal control over EER reporting processes.
- 6 Obtaining assurance with respect to narrative information.
- 7 Obtaining assurance with respect to future-oriented information.
- 8 Exercising professional skepticism and professional judgment.
- 9 Obtaining the competence necessary to perform the engagement.
- 10 Communicating effectively in the assurance report.

IAASB Integrated Reporting Working Group, Supporting Credibility and Trust in Emerging Forms of External Reporting:
Ten Key Challenges for Assurance Engagements.

These issues continue to be considered and researched by international and Australian audit and assurance standard setters, Big 4 accounting firms and accounting academics.

9.9 Consistency of sustainability reporting

While the GRI Standards are the most widely used guidelines globally, application of these standards largely remains voluntary. In addition, there are other voluntary framework and standard-setting bodies that provide guidance related to sustainability reporting, including the IIRC through the <IR> Framework. Without greater consistency in this guidance, it is difficult to compare sustainability reports between organisations and across countries.

LO10

In 2020, the World Economic Forum (WEF) in collaboration with the Big Four accounting firms (Deloitte, EY, PricewaterhouseCoopers (PwC) and KPMG) released a white paper aimed at introducing a common set of metrics to encourage consistency of sustainability reporting.¹⁰ This proposes a set of 21 critically important metrics and disclosures (core metrics) and an additional set of 34 metrics and disclosures

(expanded metrics) to encourage more consistent and comparable disclosures in sustainability reports across different industries and countries. Organisations can also use these metrics to demonstrate a long-term value creation focus, and align their sustainability reporting with the UN SDGs. The metrics are categorised according to four categories: Planet, People, Prosperity and Principles of Governance. Each of the 17 SDGs fits within one of these four categories.

Core planet metrics include greenhouse gas emissions, land use and ecological sensitivity, and water consumption. Core people metrics include disclosures on diversity and inclusion, pay equality, and health and safety incidents. Core prosperity metrics include the absolute number and rate of employment, total R&D expenses, and total tax paid. Core principles of governance metrics include percentage of key stakeholders (governance body members, employees and business partners) trained in anti-corruption policies and procedures, governance body composition, and risk disclosures.

Within the reporting ecosystem, there are various attempts being made to harmonise sustainability reporting guidance internationally. The five major voluntary framework and standard-setting bodies (including the GRI and the IIRC) have recently agreed to work toward a shared vision. Time will tell whether the guidance contained in the WEF white paper becomes the new norm for sustainability reporting. Regardless, always remember that the aim of sustainability reporting is for the organisation to create long-term sustainable value, while generating positive outcomes for the economy, environment and society.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

- 1 What is the purpose of a sustainability report?
- 2 Why do companies prepare a stand-alone sustainability report?
- 3 What disclosures are typically included in a sustainability report?

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 What types of information are missing in traditional financial reporting?
- 2 What are the main criticisms of traditional financial reporting?
- 3 Based on your accounting knowledge to date, do you think traditional financial reporting provides all the information that stakeholders require? Consider your answer based on the information needs of the different stakeholders discussed in this chapter.
- 4 What do we mean by the concept of sustainability, and why does it matter?
- 5 Outline the costs and benefits of preparing a sustainability report.
- 6 Are the stakeholders for sustainability reporting different from the stakeholders for traditional financial reporting? If you think they are, identify the different groups and explain their interests/requirements in the reports.
- 7 What skills do accountants have that are important in the development of sustainability reports?
- 8 Explain why sustainability reporting is necessary. Consider both the benefits of sustainability reporting and the drivers for sustainability reporting in your answer.
- 9 What are the three key disclosure categories used by the GRI in sustainability reports? Provide four examples of performance indicators for each category.
- 10 Select one of the three key disclosure categories used by the GRI in sustainability reports. For that category, which of the example disclosures listed in the chapter do you believe are most important for an organisation to cover?
- 11 Explain some of the key arguments on whether sustainability reporting should be voluntary or mandatory. Provide at least two points for each side of the argument.
- 12 Considering the various professions involved in the assurance of sustainability reports, what are some of the key tensions surrounding this issue?
- 13 What skills do accountants and non-accounting professionals provide in the assurance of sustainability reports?
- 14 How can supply chain management assist in raising awareness of sustainability issues? Provide examples in your answer.
- 15 Do you think it is important for organisations to present their sustainability reports in a form that is consistent with other organisations and over time? Explain your response.
- 16 Why should sustainability reports be aligned with the UN SDGs? Explain your response.
- 17 What is integrated reporting? How is integrated reporting different from other forms of reporting?

- 18 Identify the drivers of integrated reporting.
- 19 What are some of the challenges that integrated reporting must overcome?
- 20 Who will read integrated reports? Will all stakeholders have the same level of skills or competency to understand an integrated report?

PROBLEMS

PROBLEM 9.1

Relationship to GAAP

Do you think the kinds of accounting concepts and standards illustrated in Chapter 6 as being part of GAAP can or should apply to a company's sustainability reports? Discuss the pros and cons of such an expansion and interpretation of GAAP, based on the reasons you think companies would want to produce sustainability reports and why people would want to obtain them.

PROBLEM 9.2

Criteria

The KPMG Survey of Sustainability Reporting 2020 notes KPMG professionals can help your organisation: 'Benchmark the quality of your reporting against industry peers' (KPMG Survey of Sustainability Reporting 2020, p. 54).

What criteria are likely to be used to carry out this benchmarking exercise?

PROBLEM 9.3

Assurance

International surveys show that companies are increasingly having their sustainability reporting assured in some form.

- 1 What are the benefits of having this information assured?
- 2 Why would this assurance not be part of the audit of the financial statements?
- 3 What type of assurance could be given about the sustainability information reported?

PROBLEM 9.4

Integrated reporting

Refer to Exhibit 9.4 from the National Australia Bank (NAB) integrated report (2020 Annual Review). If you were an employee with NAB, which pieces of information in the '2020 at a Glance' section would you find most important? Why? Would this information affect your decision to work there?

PROBLEM 9.5

Interpreting sustainability reports

Go to the following websites to examine the sustainability reports of some Australian companies:

- a Telstra: <https://www.telstra.com.au/aboutus/community-environment/reports/>
- b CSL Limited: <https://www.csl.com/our-company/corporate-responsibility>
- c Westpac: <https://www.westpac.com.au/about-westpac/sustainability/performance-reports>
- d Commonwealth Bank: <https://www.commbank.com.au/about-us/opportunity-initiatives/performance-reporting.html>
- e Stockland Corporation: <https://www.stockland.com.au/sustainability/downloads>.

For each company:

- 1 provide two key performance indicators under each of the following three headings:
 - a economic
 - b environment
 - c social.

- 2 Are GRI criteria used?
- 3 Are the UN SDGs mentioned?
- 4 Was there an assurance report? If so, who was the auditor?
- 5 List the five main things you learned from reading each of the sustainability reports.

CASES

CASE 9A

Woolworths Limited

Obtain the Woolworths 2021 Sustainability Report (available at https://www.woolworthsgroup.com.au/icms_docs/195991_2021-sustainability-report.pdf).

- 1 List three important points the CEO and Chairman make relating to sustainability.
- 2 In the People section (pp. 7–21), how does Woolworths indicate alignment with the various UN Sustainable Development Goals?
- 3 In 2021, by how much had Woolworths reduced their carbon emissions relative to their 2015 baseline?
- 4 List three ways in which Woolworths states it reduced its emissions.
- 5 Review Woolworths' responsible sourcing and human rights due diligence framework on page 16, and list three things you learn from this table.

Now review the Woolworths 2021 Sustainability Report Appendix (available at https://www.woolworthsgroup.com.au/icms_docs/195995_2021-sustainability-report-appendix.pdf).

- 1 What are Woolworths' sustainability and workplace metrics for 2021?
- 2 What reporting framework does Woolworths use to report on its sustainability performance?
- 3 Was the Woolworths sustainability report assured? By whom? Is the assurer an Accounting firm?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

- 9A** For the company you select, you should see a variety of disclosures covering economic (e.g. economic value generated and distributed, including community investments), environmental (e.g. energy usage) and social (e.g. labour practices, human rights).
- 9B** For the company you select, you will likely see a reference to the UN SDGs. For some companies, this is in their discussion of particular sustainability initiatives; for others, each section of their report is mapped to the UN SDGs to which it is aligned.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1 A sustainability report provides disclosures on the impacts that an organisation has on the economy, environment and society in which it operates. It assists organisations in setting goals, measuring performance and managing change in order to make their operations more sustainable.
- 2 Reasons companies prepare a stand-alone sustainability report would include:
 - to emphasise their commitment to sustainability issues
 - it allows them to provide much more detail than in the annual report
 - some companies see it is beneficial to provide more summarised sustainability results in the annual report and then a separate stand-alone report for those that want more detail
 - increased concern about the expanding content of the annual report and therefore a trend towards separate reports.

- 3 As sustainability reporting is largely voluntary, what is reported varies considerably depending on the industry involved, the needs of stakeholders and the views of management. Examples of what may be disclosed under the GRI Standards are listed in Exhibit 9.3 of the chapter. These disclosures are categorised under the headings of economic, environmental and social indicators. Some examples include:
- economic: market presence and indirect economic impact
 - environmental: energy, water and emissions
 - social: occupational health and safety, non-discrimination and customer privacy.

NOTES

- 1 International Integrated Reporting Council, *International <IR> Framework*, <https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf>.
- 2 Global Reporting Initiative, *GRI Sustainability Reporting Standards 2020*, <https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language>.
- 3 Qantas, *Financial and non-financial metrics*, <https://www.qantas.com.au/en/qantas-group/delivering-today/financial-and-non-financial-metrics.html>.
- 4 Transurban Limited, Environmental, social and governance (ESG) web page, <https://www.transurban.com/investor-centre/environmental-social-governance>.
- 5 BHP, *BHP Sustainability Site*, <https://www.bhp.com/sustainability>.
- 6 Commonwealth Bank, Stakeholder engagement approach, <https://www.commbank.com.au/content/dam/commbank/assets/about/opportunity-initiatives/Stakeholder-Engagement-Approach.pdf>. © Commonwealth Bank of Australia.
- 7 United Nations, *Sustainable Development Goals*, <https://sdgs.un.org/goals>.
- 8 R. Moroney, C. Windsor & Y. T. Aw (2012), 'Evidence of assurance enhancing the quality of voluntary environmental disclosures: an empirical analysis', *Accounting & Finance*, 52(3), pp. 903–939.
- 9 International Integrated Reporting Council, *International <IR> Framework*, <https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf>.
- 10 World Economic Forum, *Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation*, http://www3.weforum.org/docs/WEF_IBC_Measuring_Stakeholder_Capitalism_Report_2020.pdf.



Record-Keeping

ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** describe the importance of good record-keeping (10.1, 10.4, 10.5)
- LO2** explain the various steps in the accounting cycle (10.2, 10.3)
- LO3** describe what source documents exist and how they provide data for the accounting system (10.2, 10.3)
- LO4** prepare journal entries (10.2, 10.3)
- LO5** post to ledger accounts and calculate the closing balances (10.2, 10.3)
- LO6** prepare a trial balance (10.2, 10.3)
- LO7** prepare closing entries and explain the need for these closing entries (10.2, 10.3)
- LO8** prepare financial statements from the trial balance (10.2, 10.3)
- LO9** prepare multi-column worksheets (10.4)
- LO10** complete the accounting process (10.5)
- LO11** explain why bookkeeping and control are important for managers (10.6, 10.7).

CHAPTER OVERVIEW

This chapter covers the processes by which transactions are recorded in the accounting system. It considers the basic steps in the accounting cycle: source documents, journal entries, posting to ledgers, trial balances, adjusting entries, closing entries and the preparation of financial statements.

10.1 The importance of good records

LO1 This chapter emphasises a very basic part of accounting: the record-keeping (bookkeeping) procedures that form the records on which accounting information is built.

Complete and accurate records are important: they provide the observations and the history of the organisation. Without knowing what has happened, investors and managers cannot make plans for the future, evaluate alternatives properly or learn from past actions. In today's complex business environment – especially since organisations have become very large – the number of events (or transactions, as we will call them) is much too great for anyone to keep track of without keeping accurate records. Records provide the basis for extrapolations into the future, the information for evaluating and rewarding performance, and a foundation for internal control over the existence and quality of an organisation's assets. Record-keeping, however, does cost money; therefore, records should be worth their cost. How complex and sophisticated to make one's records is a business decision, much like decisions such as how to price or market one's product.

10.2 Accounting's 'books' and records

LO2 This section will take you through the accounting cycle from the source document to the preparation of the financial statements. Each step in the accounting cycle will be explained in this section and then a comprehensive example working through each of the steps will be covered in section 10.3.

LO5 The accounting cycle

LO6 Figure 10.1 shows the sequence of accounting procedures from the original documentary evidence of a transaction (source documents) to the preparation of financial statements.

LO8 The source documents are the basis for journal entries, which in turn are posted to the general ledger accounts as a means of summarising the transactions. A trial balance is then taken out to ensure that the total of the debits equals the total of the credits. End-of-period accruals, corrections and other adjustments (covered previously in Chapter 4) are then incorporated via additional journal entries. A post-adjustment trial balance is taken out to ensure the total of the debits still equals the total of the credits. Further journal entries then close the revenue and expenses to retained profits to make all of those accounts' balances zero in preparation for the next period's step 1. (The balance sheet accounts continue into the next period and so are not closed.) Financial statements are then prepared.

The underlying accounting system

This section summarises some of the mechanics of the accounting system behind steps 1 to 9 in Figure 10.1, to show you how transactions are summarised into the financial statements. Keep in mind, though, that this is a basic description: much has been left out in order to keep the portrayal clear. These days, for almost all companies, the 'books' we refer to are electronic records.

Step 1: Source documents

Accounting record-keeping depends upon sets of documents to show that transactions have occurred. Such documents are kept so that the accounting records can be checked and verified to correct errors. They can also be audited, and can be used if there is a dispute or to support income tax claims and other legal actions. The transactions themselves reflect various events in operating a business. Here are some examples from the company Quality Printers, based on information provided by their CEO.

- 1 Quality Printers, a manufacturer of self-adhesive labels and cartons, is located in Sydney. To manufacture its products, it orders ink, paper and cardboard, among other things. Ordering the kinds of materials it needs to create products customers will want is an important early step. Ordering is not an accounting transaction, so orders are not recorded in the accounts, but documenting and keeping track of them is very important to Quality Printers, so it uses purchase order forms for this through its online system for

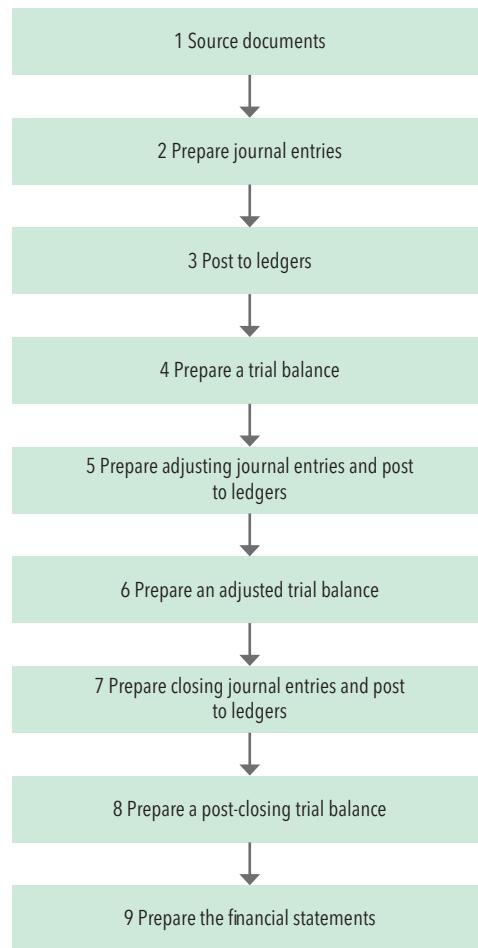


FIGURE 10.1 Steps in the accounting cycle

ordering (this is very similar to when you order online and items go to a shopping cart). The items ordered are listed in detail so they can be checked against what actually arrives from the supplier. The amount of goods and services tax (GST) is added. The accounting entries for GST are covered in Chapter 14.

- 2 When ordered items arrive, they are checked against purchase orders and the supplier's packing slips, to ensure all is correct. When Quality Printers accepts a delivery, this is an accounting transaction, and a purchases record is created to support the transaction *debit Inventory (asset)* and *credit Accounts payable (liability)*. If the company needed to return some goods to suppliers, it is recorded as well, in the opposite way: *credit Inventory* and *debit Accounts payable*.
- 3 When Quality Printers pays the supplier, it is usually by electronic transfer of funds. A copy of that is the source document for recording the transaction *debit Accounts payable* and *credit Cash (bank)*.
- 4 Selling the products is what Quality Printers is in business to do. When a sale is made, a sales invoice is prepared, specifying various useful details. A copy of this invoice supports the transaction *debit Accounts receivable* and *credit Sales revenue*. (Through the company's computerised inventory system, the sales invoice also supports recording the cost of the goods sold to the customer, *debit Cost of goods sold expense* and *credit Inventory*.) You will cover the cost of goods sold calculation for a manufacturing firm in a course on management accounting. It is determined based on the amount of material, labour and overhead incurred in the production process. The amount on the invoice will include GST. For example, if the total amount charged is \$707.30, it includes \$64.30 GST (i.e. selling price of \$643 plus GST of 10% of \$643). In effect, Quality Printers is collecting this amount on behalf of the government. While the entries

will be shown in more detail in Chapter 14, the journal entry will be: *debit Accounts receivable \$707.30 (i.e. the amount owed by the debtor), credit Sales revenue by \$643.00 (i.e. revenue earned by the company) and credit GST liability account with \$64.30 (i.e. the amount being collected in GST on behalf of the government).*

- 5 Collecting payment from customers is the last event we illustrate. When a customer pays Quality Printers, the payment is listed in the day's collections. That list is the source document to support the transaction *debit Cash (bank) and credit Accounts receivable*. It also supports the bank deposit made that day, so that if there are problems, someone can start with the monthly bank statement and trace the deposits shown on it back to the payments by individual customers.
- 6 Quality Printers, like many businesses, relies on credit cards and electronic funds transfer (EFT) for customers' payments on some sales. When a customer pays by credit card, Quality Printers has an electronic copy of the payment. Some customers pay Quality Printers by EFT, which has become very common for many organisations.

Quality Printers also uses other kinds of documents. It has more electronic transfers; for example, paying all employees by direct deposit into their bank accounts. There are many kinds of documents used by various companies. Each company adapts documents to its own needs, especially to provide legal and taxation evidence and to support accounting transactions records. You can count on two things regarding any company, government, sports club or other organisation: (1) it will have various documents to back up its accounting system; and (2) those documents will be suited to that organisation and so might not be quite like those of other organisations.

Step 2: Prepare journal entries

Based on source documents, accounting transactions are recorded by preparing journal entries. Because this is when the business event is first recorded by the accounting system, these basic transactional records are often called books of original entry.

Journal entries were introduced in Chapter 3 to illustrate the use of debits and credits. Journal entries provide, in chronological order, a record of all the transactions recorded by an organisation. Journal entries can take many different forms, depending on such factors as the size of the organisation, the frequency of transactions and the frequency of providing reports. In this section we describe the simplest form, known as a general journal entry. You had some practice in preparing journal entries in Chapter 3, but it is worth reinforcing here. Consider the following transactions:

- A consulting company provides services to a client on 1 February and sends it an invoice (source document) for \$10 000.
- The company buys a motor vehicle for \$30 000 on 3 February, paying \$12 000 cash and owing \$18 000 to be paid in two years.

These would be recorded as follows:

Date	Particulars	Debit \$	Credit \$
1	1 Feb 2022	Accounts receivable	10 000
		Consulting revenue	10 000
	Consulting services rendered on credit		
2	3 Feb 2022	Motor vehicle	30 000
		Cash	12 000
		Long-term loan	18 000
	Purchased a motor vehicle, paying \$12 000 cash with remaining \$18 000 to be paid in two years.		

Note that an alternative format for the journal entries often puts the debit (DR) and credit (CR) before each account rather than as headings to the right-hand column. This is the format we showed you in Chapter 3. For example:

		\$	\$
1 Feb	DR	Accounts receivable	10 000
	CR	Consulting revenue	10 000

Both methods are acceptable.

From the previous journal entries, the following should be noted:

- All journal entries have one or more accounts debited and one or more accounts credited. A journal entry can list as many accounts as are needed to record the transaction, but each journal entry must be recorded so that the sum of the debits equals the sum of the credits for that entry. If not, the accounting equation will not be maintained (the books will not balance).
- It is traditional for the debits to be listed first in each journal entry and for the debits to be written to the left and the credits to the right. Neither of these is arithmetically necessary, but keeping a consistent style helps keep the records understandable.
- It is common to omit the dollar signs in writing the entries. The transaction has to be measurable in dollars, so putting in dollar signs is thought to be redundant.
- It is also traditional to write a short explanation called a narration below each entry as a memorandum of what the recorded transaction was about. Again, this is not necessary, but it helps to make the record understandable.
- Every journal entry should also be dated, and is usually numbered, so there is no doubt about when the transaction was recorded. The date can have important legal and tax implications, and, of course, it is necessary to know which financial period a transaction belongs to when financial statements are being prepared.
- A posting reference is given to indicate the ledger account to which each journal entry is posted. This number can be obtained from the company's chart of accounts. In deciding what accounts to use, accountants develop a chart of accounts and use it to determine the name of the account that is affected by a transaction. A chart of accounts is a listing of the titles of all accounts. For example, assets may be numbered 1 to 99, liabilities 100 to 199, shareholders' equity 200 to 299, revenues 300 to 399 and expenses 400 to 499. This allows room for expansion over time as new account titles are required for new types of transactions. An illustration is provided in section 10.3.

Organisations with many transactions to record – this is most organisations – do not create a separate journal entry for each transaction, but instead use special records for each frequent, routine kind of transaction, such as a sales journal, a cash receipts journal, a cash payments journal and a purchases journal. These are illustrated in Chapter 11.

Almost all bookkeeping systems are computerised. These systems may or may not produce records that look like the preceding examples, but they have the same arithmetical objective of keeping all the debits equal to all the credits. You saw spreadsheet examples in Chapter 3, but spreadsheets are a little cumbersome for handling large numbers of transactions, so most organisations use dedicated accounting software.



HOW'S YOUR UNDERSTANDING?

10A What is the journal entry for:

- a credit sale of goods for \$80 000 that cost \$50 000?
- a cash sale of goods for \$40 000 that cost \$25 000?

Step 3: Post to ledgers

First we will introduce you to ledgers and then we will work through how to post from journal entries to ledgers. Consider a situation where, during the month, thousands of journal entries were written, of which 20 per cent included either a debit or credit to the cash account. If you were asked the balance of the cash account at the end of the month, how would you find out? One option is to get the opening balance, add on all debit entries affecting cash and deduct all credit entries affecting cash. But doing this is time-consuming, and it would be preferable to have a source that will give you the balance of the account at any point in time. Such a source is a ledger. Ledgers are books (or digital records) that have a separate page or account code for each individual account referred to in the chart of accounts. Each area or page contains a summary of all the transactions relating to that particular account and, therefore, posted to it.

Here is an example of the 'cash at bank' ledger account for a company:

Cash at bank					
Date	Description	Entry no.	Debits	Credits	Balance
02/12/22	First deposit	1	10 000		10 000 DR
02/12/22	Deposit	3	1 146		11 146 DR
02/12/22	Cheque	7		678	10 468 DR
02/12/22	Cheque	8		2 341	8 127 DR

Each ledger account is really just a convenient summary of the entries affecting it. In turn, the balance sheet is a summary of all the account balances. The general ledger is the complete set of all the accounts (assets, liabilities, equity accounts, revenues and expenses) that lie behind the financial statements.

You might want to think of the ledger as a set of account pages (real pages, such as in the books used by bookkeepers of old, or representations in a computer system), such as the one earlier, in which the sum of all the debit balance accounts equals the sum of all the credit balance accounts. The picture in Figure 10.2, using the accounting equation format and including the cash in bank account from earlier, might be useful.

Figure 10.2 shows the balance sheet ledger accounts. There will also be ledger accounts for income statement accounts.

For demonstration and analysis purposes, accountants and accounting instructors often use a simplified version of a ledger account called a T-account, which includes only the debits and credits columns of the account, without calculating the balance after every entry. A T-account version of the previous cash account example would look like this:

Cash at bank	
DR	CR
10 000	678
1 146	2 341
8 127	

The balance of \$8127 is simply the amount by which the debit entries exceed the credit entries.

Note that the normal balance of asset accounts is a debit and the normal balance of liabilities and equity accounts is a credit balance. (Also note that, as revenues increase equity, their normal balance is a credit and, as expenses reduce equity, their normal balance is a debit.)

By convention, left-hand entries to ledgers are called debits and right-hand entries are called credits. Here is an example of some T-accounts:

Cash		Loans	
DR	CR	DR	CR

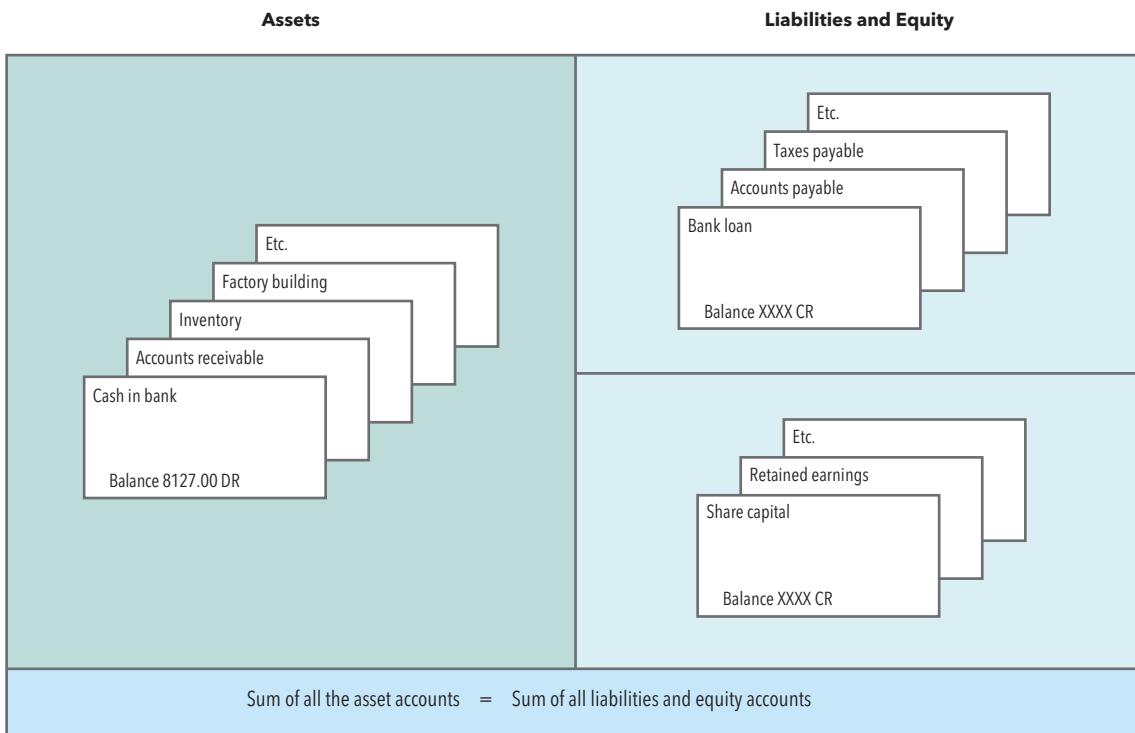


FIGURE 10.2 Ledgers

Recall our earlier debit/credit conventions from Chapter 3:

- For asset and expense accounts, increases are recorded on the left-hand side (i.e. debit) and decreases are recorded on the right-hand side (i.e. credit).
- For liabilities, shareholders' equity and revenue accounts, the opposite occurs. Increases are recorded on the right-hand side (credit) and decreases are recorded on the left-hand side (debit).

In addition when creating T-accounts:

- Balance sheet accounts will normally have an opening balance brought over from the closing balance of last period. You will then have a closing balance for this period at the bottom of the T-account.
- Income statement accounts will not have an opening balance as they were closed off and brought down to zero in the last period (see Step 7: Closing entries for further details). If multiple entries have been made in the T-account the account can be balanced before it is closed off for this period.

Now that we have looked at what a ledger is and introduced you to T-accounts we will cover how to post journal entries to ledger accounts. Posting from the journal to the ledger is very mechanical. You simply do what the journal entry tells you to do; that is, if it says debit cash for \$100, you place \$100 on the debit side of the cash ledger account. To illustrate, we will post the two journal entries from the previous section.

The journal entries from the general journal have been repeated in Figure 10.3. Each entry has then been posted into the relevant T-account.

At this point, you may question why we need journal entries at all; that is, why not recognise a transaction, then put it straight onto the ledger? The reason is that we want to have a complete record of all transactions, and the general journal gives us that. Each ledger account only records part of the transaction, so we would not have the whole transaction shown together.

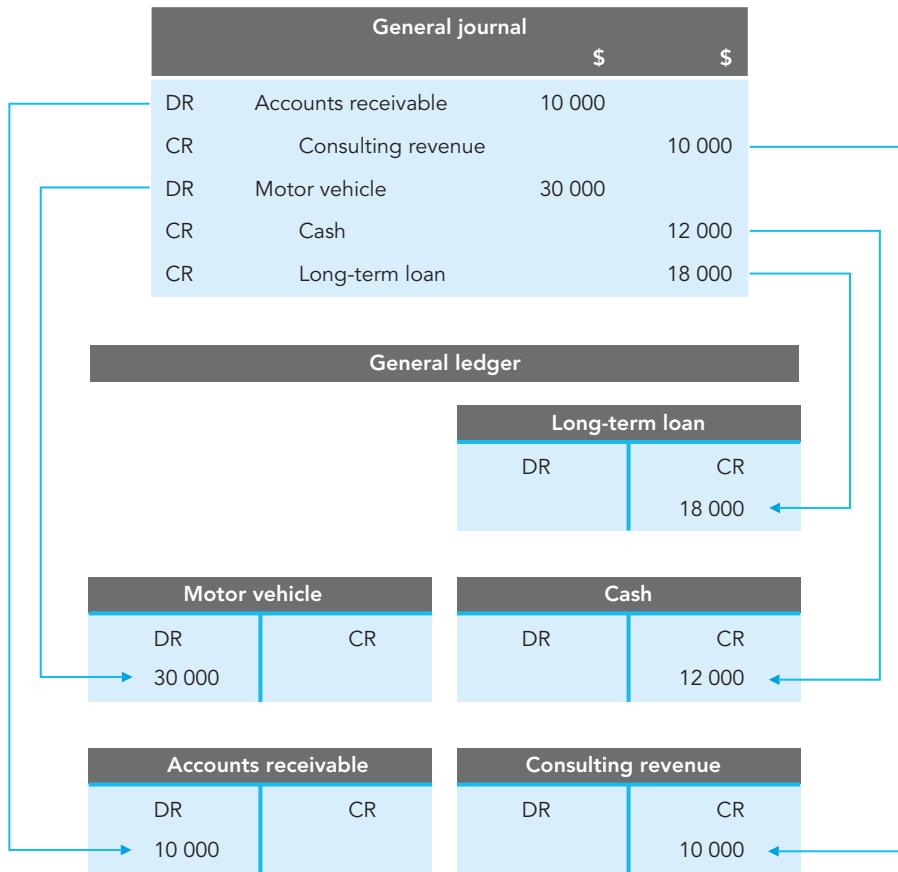


FIGURE 10.3 Journal and ledger entries

The ledger accounts referred to earlier are called general ledgers – the collection of all the asset, liability, equity, revenue and expense accounts, summarising the entire operations of the business. The general ledger is the central record of the financial accounting system, and is the base from which the financial statements are prepared.

In addition to the general ledger, most companies will maintain various subsidiary ledgers; accounts receivable and accounts payable ledgers are two examples of subsidiary ledgers. For instance, if a company extends credit to its customers, it may want to keep a separate ledger account for each customer. These ledgers are balanced by making sure that their accounts add up to the same amount as is shown in the relevant general ledger account; for example, the accounts receivable 'control' account in the general ledger, which is the account used to prepare the financial statements, should have the same balance as the sum of customers' individual accounts. A subsidiary ledger does not 'balance' by having its debits equal its credits, but rather by having its sum equal the amount in the primary (control) account in the general ledger. Ensuring this is true is an important way of making certain that individual customer accounts receivable, for example, are correct. Subsidiary ledgers, therefore, are part of the internal control system; their details are not in the financial statements but they support the validity of the main 'control' account that does appear in the financial statements. Subsidiary ledgers are discussed further in Chapter 11.

AN EXAMPLE ON LEDGERS

The basic purpose of ledgers is to accumulate journal entries related to each account and thus provide a summary of all transactions impacting a particular account (e.g. cash, inventory, accounts payable). As you work through this book, there will be many occasions where you need to construct a ledger account, in the form of a T-account, to find certain information.

Let's start with a very simple example where the company has only two opening balances:

	DR \$	CR \$
Cash	100 000	
Share capital		100 000

During the month the following transactions occur:

- 1 cash sale of a service, \$200
- 2 credit sale of a service, \$8000
- 3 paid wages, \$5000.

Each of these three transactions would be recorded as follows in the general journal:

General journal			\$	\$
1	DR	Cash	200	
	CR	Sales revenue		200
2	DR	Accounts receivable	8000	
	CR	Sales revenue		8000
3	DR	Wages expense	5000	
	CR	Cash		5000

The journal entries would then be posted to the ledger accounts. The ledger accounts would appear as follows (the type of account and the reference to the transaction are both shown in brackets):

GENERAL LEDGER

Cash (A)		Share capital (SE)	
DR	CR		
OB	100 000	(3)	5 000
(1)	200		—
CB	95 200		
Sales revenue (R)		Accounts receivable (A)	
DR	CR	DR	CR
	(1) 200	(2) 8 000	OB 100 000
	(2) 8 000		
	8 200		
Wages expense (E)			
DR	CR		
(3)	5 000		

Note, in these T-accounts and others within this book, OB represents 'opening balance' and CB represents 'closing balance'. Remember you will only see these for balance sheet accounts, as income statement accounts have a zero balance at the end of the year as all revenue and expense accounts are closed off.

Sometimes ledger accounts can be used to find missing information. For example, you may know from the balance sheet that the opening and closing balances of inventory are \$8000 and \$10 000, respectively. From the income statement, you can see that cost of goods sold is \$4000. Recall that when goods are sold, inventory decreases (i.e. CR inventory) and COGS increases (i.e. DR COGS). From the ledger account of inventory, we can determine the dollar amount of goods purchased (i.e. DR Inventory CR Accounts payable, assuming all inventory is purchased on credit).

Inventory		
	DR	CR
OB	8 000	4 000
Purchases	?	—
CB	10 000	

$8000 + \text{purchases} - 4000 = 10\ 000$
Therefore, purchases = 6000



HOW'S YOUR UNDERSTANDING?

10B Provide an example of a transaction which will increase and decrease the balance in the following accounts:

- (i) Accounts receivable
- (ii) Inventory.

10C Create T-accounts for cash (opening balance \$4000), inventory (opening balance \$2000), sales revenue and COGS and then post the following from the general journal to the ledger accounts.

		\$	\$
10 Feb 2022	DR	Cash	1500
	CR	Sales revenue	1500
	DR	COGS	1100
	CR	Inventory	1100

Step 4: Prepare a trial balance

A trial balance is a list of all the accounts and the balances of each of the accounts. The aim is that the sum of the debit balances equals the sum of the credit balances. Because the general ledger contains all the accounts, all of which came from balanced journal entries, it must balance (sum of debit balance accounts equalling sum of credit balance accounts) and it leads to a balanced balance sheet. Because errors might have been made, a standard bookkeeping procedure is to check that the ledger does balance by adding up all the debit and all the credit account balances and making sure the two totals are equal. There is always a little uncertainty that this will work, so the calculation is called a trial balance.

An example of a trial balance is shown in Exhibit 10.1.

EXHIBIT 10.1

TRIAL BALANCE

AS AT 30 JUNE 2022

	DR	CR
	\$	\$
Cash	15 000	
Accounts receivable	65 000	
Inventory	130 000	
Accounts payable		40 000
Sales		100 000
Wages expense	30 000	
Other expenses	20 000	
Share capital		100 000
Retained profits		20 000
	<hr/> 260 000	<hr/> 260 000

This trial balance is for a company with only a very small number of accounts. In practice, the trial balance would include a balance of every account included in the company's chart of accounts.

You need the trial balance to balance before moving onto the next step of the accounting cycle; if not, you may carry an error through to the financial statements. So what would you do if your trial balance didn't balance? Here are some steps to follow:

- Re-add the trial balance.
- Check you have included the balance in the correct debit or credit column.
- Check that you balanced each ledger account correctly.
- Check that you posted the correct amounts in the journal entries to the correct side of the ledger account.
- Check that each journal entry balances (i.e. DR = CR).
- Determine how much the difference between the debits and credits is, and look for an account with that balance. This would indicate you have left this ledger balance out. Also, look for a journal entry with that amount, as this would indicate you have not posted one side of the entry.
- Divide the difference by 2 and look for a journal entry for that amount. It is likely that the amount is posted to the wrong side of the account.
- If the difference is divisible by 9, it is likely a transposition error has been made; for example, 21 instead of 12, 72 instead of 27.

Not all errors that are made will be picked up by the trial balance. Consider the journal entry:

		\$	\$
DR	Accounts receivable	10 000	
CR	Consulting revenue		10 000

If the following errors were made, would the trial balance still balance?

- The journal entry was not posted.
- The journal entry was posted by debiting consulting revenue and crediting accounts receivable.
- The accounts receivable amount was correctly posted, but the consulting revenue amount was posted to share capital by mistake.
- \$1000 is posted instead of \$10 000 for both accounts.

In all four cases, the trial balance will still balance!



HOW'S YOUR UNDERSTANDING?

10D Which of the following accounts normally have a CR balance?

- (i) Inventory
- (ii) Sales
- (iii) COGS
- (iv) Wages expense
- (v) Wages payable
- (vi) Share capital
- (vii) Accounts receivable
- (viii) Accounts payable.

10E Which of the following errors would be identified by a trial balance?

- (i) A journal entry was incorrectly recorded as DR to cash rather than as DR to accounts receivable.
- (ii) A journal entry was incorrectly posted to the general ledger as a DR to cash rather than a DR to accounts receivable.
- (iii) A journal entry was incorrectly posted to the general ledger as a CR to cash rather than a DR to cash.

Step 5: Prepare adjusting journal entries and post to ledgers

At the end of each accounting period, it is necessary to adjust the revenue and expense accounts (and the related asset and liability accounts) to reflect expenses incurred but not yet paid, revenues earned but not yet received, cash received from customers before the work being done, and the using up of assets, which creates an expense (such as depreciation).

It is all about splitting an expense or revenue item across two different accounting periods. For example, an insurance payment could be made in March 2022 covering 1 April 2022 to 30 March 2023. At 30 June 2022, accounts have to be adjusted to reflect that 25 per cent of the payment is a 2022 expense and 75 per cent is a 2023 expense. Assuming that the payment for insurance (say, \$200 000) was put to an asset account in March (i.e. DR prepayments \$200 000, CR cash \$200 000), at 30 June it is necessary to reduce the asset (prepayments) to reflect that part of the asset is used up. Therefore:

			\$	\$
30 June 2022	DR	Insurance expense	50 000	
	CR	Prepayments		50 000

This adjusting entry would be posted to the relevant ledger accounts.

Here are some other adjusting entries that you have been introduced to in earlier chapters:

- accrued expenses such as wages earned during the year but not paid at year-end (called 'wages payable' or 'accrued wages')
- interest revenue earned during a period but not received by year-end (called 'interest receivable' or 'accrued interest revenue')
- cash received for a service but the service has not been provided by year-end (called unearned revenue or revenue received in advance)
- depreciation expenses.

These adjustments are important in accrual accounting and were discussed in detail in Chapter 4.

Step 6: Prepare an adjusted trial balance

After all the adjusting entries have been made and posted to the ledger accounts, then another trial balance called an adjusted trial balance can be prepared. You will follow the same process as described previously in step 4.

Step 7: Prepare closing journal entries and post to ledgers

To facilitate the preparation of the financial statements and to prepare the accounting records to begin the next period, a company may prepare closing entries. Closing entries formally transfer the balances of the revenue and expense accounts to a profit and loss (P & L) summary, then to retained profits. This step will occur at the end of the accounting period.

Closing entries reset the revenue and expense account balances to zero to begin recording these items for the next accounting period.

Closing entries are simple to prepare. The steps are outlined as follows:

- Revenue accounts have credit balances and are closed (reduced to zero) with debits to the revenue accounts and a credit to the P & L summary account.
- Expense accounts have debit balances and are closed (reduced to zero), with credits to the expense accounts and debits to the P & L summary account.
- The P & L summary account, which is simply a holding account, is then closed off to retained profits. If the P & L summary has a credit balance after closing off the revenues and expenses (i.e. a profit has been made), the entry is debit P & L summary and credit retained profits. If the account has a debit balance (i.e. a loss has been made), the entry is a credit to P & L summary and a debit to retained profits.

To illustrate closing entries, we will use the trial balance from Exhibit 10.1 as an example. The only accounts that need to be closed off are the revenue and expense accounts (asset, liability and share capital accounts are carried forward as opening balance of the following period).

At 30 June 2022, the ledger accounts will appear as follows:

Sales		Wages expense		Other expenses	
DR	CR	DR	CR	DR	CR
	100 000		30 000		20 000

To get the sales account back to zero, we would need to debit it with a corresponding credit to P & L summary. To get the expense accounts back to zero, we would have to credit both these accounts and, correspondingly, debit the P & L summary account. This would result in the following journal entries:

		\$	\$
30 June 2022	DR	Sales	100 000
	CR	P & L summary	100 000
	DR	P & L summary	50 000
	CR	Wages expense	30 000
	CR	Other expenses	20 000

At this point sales, wages expense and other expenses have zero balances, while P & L summary has a credit balance of \$50 000. The P & L summary would then be closed by debiting it (the P & L summary will have a credit balance in the case because revenues are greater than expenses in this example) and crediting retained profits. To clear it, the following entry is prepared:

		\$	\$
30 June 2022	DR	P & L summary	50 000
	CR	Retained profits	50 000

These journal entries would then be posted to the ledger accounts. After the closing entries the ledger accounts would appear as:

P & L summary		Retained profits	
DR	CR	DR	CR
50 000	100 000	OB	20 000
<u>50 000</u>			<u>50 000</u>
0		CB	70 000

Sales		Wages expense		Other expenses	
DR	CR	DR	CR	DR	CR
100 000	100 000	30 000	30 000	20 000	20 000



HOW'S YOUR UNDERSTANDING?

10F Prepare closing entries based on the following trial balance.

GENERAL LEDGER TRIAL BALANCE 30 SEPTEMBER 2022

	DR \$	CR \$
Cash (bank)	5 522	
Equipment	660	
Accumulated depreciation	132	
Accounts payable	940	
Share capital	1 450	
Sales revenue	5 737	
Interest revenue	20	
Depreciation expense	132	
Rent expense	420	
Other expenses	850	
Travel expense	<u>695</u>	
Totals	<u>8 279</u>	<u>8 279</u>

Step 8: Prepare a post-closing trial balance

A post-closing trial balance can now be prepared as follows:

	DR \$	CR \$
Cash	15 000	
Accounts receivable	65 000	
Inventory	130 000	
Accounts payable	40 000	
Share capital	100 000	
Retained profits	<u>70 000</u>	<u>70 000</u>
	<u>210 000</u>	<u>210 000</u>

You will note that there are no revenue and expense accounts in the post-closing trial balance, as these accounts have been closed off in the previous step. If there is a revenue or expense account listed, a closing entry may have been missed; this should be resolved before preparing the financial statements.

Step 9: Prepare the financial statements

The items in the P & L summary account can be used as a basis for preparing the income statement, and the items in the post-closing trial balance can be used to prepare the balance sheet. These statements are shown in Exhibit 10.2.

EXHIBIT 10.2			FINANCIAL STATEMENTS	
INCOME STATEMENT FOR THE PERIOD ENDING 30 JUNE 2022				
	\$		\$	
Sales			100 000	
Less Operating expenses:				
Wages		30 000		
Other		20 000	50 000	
Net profit			50 000	

BALANCE SHEET AS AT 30 JUNE 2022				
Assets				
Cash			15 000	
Accounts receivable			65 000	
Inventory			130 000	
Total assets			<u>210 000</u>	
Liabilities				
Accounts payable			40 000	
Shareholders' equity				
Share capital			100 000	
Retained profits			70 000	
Total liabilities and shareholders' equity			<u>210 000</u>	



HOW'S YOUR UNDERSTANDING?

- 10G** Your bookkeeper rushes into your office to apologise that posting of cash sales to the general ledger was forgotten for that month. The journal showed that cash received from cash sales during the month was \$6782. Which ledger accounts would be incorrect because of the error, and by how much? Would a trial balance have picked up this error?

10.3 Illustrative example

LO2 Record-keeping examples were used in prior chapters without exactly calling them that. Therefore, to help you anchor your knowledge, let's examine a specific example and follow the business events of a company from transactions through to the financial statements. The purpose of this example is to reinforce the processes of preparing journal entries and posting to ledgers. In addition, the use of a chart of accounts and the use of reference numbers as a means of cross-referencing when posting journal entries are introduced.

LO3 Reval Limited is an importer and wholesaler of sporting goods to major department stores and specialist **LO4** sporting goods retailers. The company commenced business last year. The chart of accounts for Reval **LO5** Limited is as follows:

Chart of accounts	
Assets (1-99)	
Cash	1
Accounts receivable	2
Inventory	5
Prepayments	8
Other assets	10
Land	40
Buildings	42
Accumulated depreciation - buildings	43
Plant and equipment	50
Accumulated depreciation - plant and equipment	51
Liabilities (100-199)	
Accounts payable	100
Salaries payable	105
Notes payable	111
Accrued expenses	115
Long-term loan	140
Mortgage loan	145
Shareholders' equity (200-299)	
Share capital	200
Retained profits	210
Revenue (300-399)	
Sales	300
Interest revenue	305
Consulting revenue	310
Expenses (400-499)	
Cost of goods sold	400
Wages	404
Staff training	407
Electricity	408
Rent	415
Interest	419

>>

<<		
Depreciation		430
Municipal rates		438
Repairs and maintenance		440
Miscellaneous		460
Other		
P & L summary		500

The trial balance at 30 April 2022 was as follows:

	DR \$	CR \$
Cash	25 000	
Accounts receivable	65 000	
Inventory	50 000	
Accounts payable		21 000
Share capital		100 000
Retained profits		19 000
	<u>140 000</u>	<u>140 000</u>

During the month of May, the following transactions occurred:

Date	Transaction no.	Transaction
May 1	1	Credit sales of \$50 000. The cost of the goods sold was \$28 000.
4	2	Paid accounts payable of \$15 000.
6	3	Purchased additional inventory for \$20 000 on credit.
8	4	Five staff attended a seminar on understanding financial statements. The total bill received was for \$3000.
11	5	Received \$30 000 for an account receivable.
18	6	Of the goods purchased on 6 May, goods which cost \$2000 were returned to the supplier as they were damaged.
20	7	A local electrician carried out repairs. A cheque for \$500 was paid to the electrician.
24	8	Cash sales of \$20 000 (COGS \$11 200).
25	9	Purchased land for \$40 000 cash and obtained a bank loan of \$35 000. The bank holds a first mortgage over the land.
26	10	Paid the monthly wages bill of \$12 000.
30	11	Purchased equipment for \$30 000, paying \$20 000 cash and agreeing to pay the remainder in two years' time. The equipment has a useful life of 5 years and will start to be used on 1 June 2022.
31	12	Received the electricity bill of \$2000, which covered the month of May. It will not be paid for another week.

Step 1: Source documents

For this example, let's assume source documents have been adequately kept. Record could be kept either as hard copies or, more likely, in electronic form.

Step 2: Prepare journal entries

The general journal entries are shown in Exhibit 10.3. Posting references have been included as a cross-reference to the account to which the amount will be posted. The reference numbers are obtained from the chart of accounts. A narration for each entry has not been included for this example.

EXHIBIT 10.3

REVAL LIMITED
GENERAL JOURNAL

No.	Date	Description		Posting reference	\$	\$
1	1 May	DR	Accounts receivable	2	50 000	
		CR	Sales	300		50 000
		DR	COGS	400	28 000	
		CR	Inventory	5		28 000
2	4 May	DR	Accounts payable	100	15 000	
		CR	Cash	1		15 000
3	6 May	DR	Inventory	5	20 000	
		CR	Accounts payable	100		20 000
4	8 May	DR	Staff training	407	3 000	
		CR	Accounts payable	100		3 000
5	11 May	DR	Cash	1	30 000	
		CR	Accounts receivable	2		30 000
6	18 May	DR	Accounts payable	100	2 000	
		CR	Inventory	5		2 000
7	20 May	DR	Repairs and maintenance	440	500	
		CR	Cash	1		500
8	24 May	DR	Cash	1	20 000	
		CR	Sales	300		20 000
		DR	COGS	400	11 200	
		CR	Inventory	5		11 200
9	25 May	DR	Land	40	40 000	
		CR	Cash	1		40 000
		DR	Cash	1	35 000	
		CR	Mortgage loan	145		35 000
10	26 May	DR	Wages	404	12 000	
		CR	Cash	1		12 000
11	30 May	DR	Plant and equipment	50	30 000	
		CR	Cash	1		20 000
		CR	Long-term loan	140		10 000
12	31 May	DR	Electricity	408	2 000	
		CR	Accounts payable	100		2 000

While many of these transactions should be familiar to you by now, some need additional emphasis and some are new. These are explained in the list that follows. Note that in deciding which account names to use in the journal entries, it is necessary to refer to the chart of accounts.

- Transaction 1 involves credit sales, which results in accounts receivable (an asset) increasing and sales (a revenue item) increasing. As the items sold had a cost, an expense (cost of goods sold) is increased and inventory (an asset) will decrease.
- Transaction 2 reduces an asset (cash) and reduces a liability (accounts payable).
- Transaction 3 increases an asset (inventory) and increases a liability (accounts payable).

- Transaction 4 involves an increase in an expense and an increase in a liability, as the bill has not yet been paid. In deciding what expense account should be debited (i.e. what to call the expense), it would be necessary to check the list of expenses in the chart of accounts. Staff training costs appears to be an appropriate account in which to put the cost of staff attending seminars.
- Note that, for transaction 5, no revenue is recognised as this occurred previously – when the sale was made. The transaction simply converts one asset (accounts receivable) into another asset (cash).
- Transaction 6 involves the reversal of part of transaction 3. As part of the inventory is returned, the inventory balance reduces and the amount owing as accounts payable reduces.
- Transaction 7 involves some electrical repairs, and the appropriate expense account is repairs and maintenance.
- Transaction 8 is the same as transaction 1, except that cash instead of accounts receivable is debited.
- Transaction 9 is divided into two parts: the purchase of the land and the obtaining of a loan. There are two account names in the chart of accounts that would be reasonable descriptions of the loan: long-term loan and mortgage loan. As the bank has taken out a mortgage over the land, the second description appears preferable.
- Transaction 10 involves the payment of an expense. There is no indication that an expense (and a liability) was previously recognised (such as wages payable) in the opening trial balance.
- Transaction 11 involves the purchase of an asset (equipment) with the reduction of another asset and the creation of a liability (long-term loan).
- In transaction 12, the bill has been received and it relates to the month of May. The expense should therefore be recognised in May.

Step 3: Post to ledgers

To post these journal entries to the ledger accounts, the T-account format of ledgers will be used (see Exhibit 10.4). Only ledger accounts with an opening balance or ones affected by the transactions are shown in the exhibit. They are recorded in the same order as they appear in the chart of accounts. The first step is to include the opening balances from the trial balance. Second, each journal entry is posted. Third, each account balance is calculated. Fourth, a new trial balance is prepared.

EXHIBIT 10.4		REVAL LIMITED									
		GENERAL LEDGER									
		Cash			1		Accounts receivable			2	
30/4		25 000	1/5	(2)	15 000		30/4	65 000		11/5	(5)
11/5	(5)	30 000	20/5	(7)	500		1/5	(1)	50 000		30 000
24/5	(8)	20 000	25/5	(9)	40 000		31/5	85 000			
25/5	(9)	35 000	26/5	(10)	12 000						
		—	30/5	(11)	20 000						
31/5		22 500									
		Inventory			5		Land			40	
30/4		50 000	1/5	(1)	28 000		25/5	(9)	40 000		
6/5	(3)	20 000	18/5	(6)	2 000						
		—	24/5	(8)	11 200						
31/5		28 800									

>

Plant and equipment			50	Accounts payable			100	
30/5	(11)	30 000		4/5	(2)	15 000	30/4	21 000
				18/5	(6)	2 000	6/5	(3) 20 000
						—	8/5 (4) 3 000	
							31/5 (12) 2 000	
							31/5 29 000	
Long-term loan			140	Mortgage loan			145	
		30/5 (11)	10 000			25/5 (9)	35 000	
Share capital			200	Retained profits			210	
		30/4	100 000			30/4	19 000	
Sales			300	Cost of goods sold			400	
		1/5 (1)	50 000	1/5	(1)	28 000		
		24/5 (8)	20 000	24/5	(8)	11 200		
			70 000			39 200		
Wages			404	Staff training			407	
26/5	(10)	12 000		8/5	(4)	3 000		
Electricity			408	Repairs and maintenance			440	
31/5	(12)	2 000		20/5	(7)	500		

To illustrate how to balance accounts, the cash account will be used as an example. When the total debits exceed the total credits, the account will have a debit closing balance. Alternatively, if the total credits exceed the total debits, the account will have a closing credit balance. In this case, the total of the debits is \$110 000 and the total of the credits is \$87 500. Therefore, the closing balance will be a debit of \$22 500.

Step 4: Prepare a trial balance

The trial balance in Exhibit 10.5 shows that the debits total equals the credits total.

EXHIBIT 10.5

REVAL LIMITED
TRIAL BALANCE AT 31 MAY 2022

	Debit	Credit
	\$	\$
Cash	22 500	
Accounts receivable	85 000	
Inventory	28 800	
Land	40 000	
Plant and equipment	30 000	
Accounts payable		29 000
Long-term loan		10 000
Mortgage loan		35 000
Share capital		100 000
Retained profits		19 000



Sales	70 000
COGS	39 200
Wages	12 000
Staff training	3 000
Electricity	2 000
Repairs and maintenance	500
	<u>263 000</u>
	<u>263 000</u>

Step 5: Prepare adjusting journal entries and post to ledgers

In this example, there are no adjusting entries to prepare. Depreciation expense does not need to be calculated for May because, as stated in transaction 11, the equipment will not be used until 1 June. Examples for adjusting entries were covered in Chapter 4.

Step 6: Prepare an adjusted trial balance

As per step 5 there were no adjusting entries so the trial balance created in step 4 is unchanged.

Step 7: Prepare closing journal entries and post to ledgers

The closing entries will formally transfer the balances of the revenue and expense accounts to the P & L summary and then to retained profits. From the trial balance in step 4 we can see the revenue account of sales and the expense accounts of COGS, wages, staff training, electricity and repairs and maintenance are to be closed off. Exhibit 10.6 shows the closing entries to be added to the general journal.

EXHIBIT 10.6

REVAL LIMITED

GENERAL JOURNAL

No.	Date	Description		Posting reference	\$	\$
13	31 May	DR	Sales	300	70 000	
		CR	P & L summary	500		70 000
		DR	P & L summary	500	56 700	
		CR	COGS	400		39 200
		CR	Wages	404		12 000
		CR	Staff training	407		3 000
		CR	Electricity	408		2 000
		CR	Repairs and maintenance	440		500
14	31 May	DR	P & L summary	500	13 300	
		CR	Retained profits	210		13 300

The amount closed to retained profits from the P & L summary is the total profit shown in the income statement. This month, the company made a profit of \$13 300.

Step 8: Prepare a post-closing trial balance

A post-closing trial balance can be found in Exhibit 10.7. You will notice that there are no revenue and expense accounts in this trial balance as they have been closed off in step 7.

EXHIBIT 10.7**REVAL LIMITED
POST-CLOSING TRIAL BALANCE AT 31 MAY 2022**

	Debit	Credit
	\$	\$
Cash	22 500	
Accounts receivable	85 000	
Inventory	28 800	
Land	40 000	
Plant and equipment	30 000	
Accounts payable		29 000
Long-term loan		10 000
Mortgage loan		35 000
Share capital		100 000
Retained profits	<u>206 300</u>	<u>32 300</u>
	<u>206 300</u>	<u>206 300</u>

Step 9: Prepare the financial statements

Items in the P & L summary account can be used as the basis for preparing the income statement and items in the post-closing trial balance can be used to create the balance sheet. Exhibit 10.8 shows the income statement and balance sheet.

EXHIBIT 10.8**REVAL LIMITED FINANCIAL STATEMENTS
INCOME STATEMENT FOR THE MONTH ENDING 31 MAY 2022**

	\$	\$
Sales	70 000	
Less COGS		<u>39 200</u>
Gross profit	30 800	
Less Operating expenses:		
Wages	12 000	
Staff training	3 000	
Electricity	2 000	
Repairs and maintenance	<u>500</u>	<u>17 500</u>
Net profit	<u>13 300</u>	

REVAL LIMITED
BALANCE SHEET AS AT 31 MAY 2022

Assets	\$	Liabilities and shareholders' equity	\$
Current assets	Current liabilities		
Cash	22 500	Accounts payable	29 000
Accounts receivable	85 000		
Inventory	<u>28 800</u>	Noncurrent liabilities	
	<u>136 300</u>	Long-term loan	10 000
Noncurrent assets		Mortgage loan	<u>35 000</u>
Land	40 000		<u>45 000</u>
Plant and equipment	<u>30 000</u>	Total liabilities	<u>74 000</u>
	70 000	Shareholders' equity	
		Share capital	100 000
		Retained profits	<u>32 300</u>
Total assets	<u>206 300</u>	Total shareholders' equity	<u>132 300</u>
		Total liabilities and shareholders' equity	<u>206 300</u>

Note calculating closing retained profits:

	\$
Beginning balance	19 000
Profit for the period	13 300
Dividends declared during the period	<u>0</u>
Retained profits at end of the period	32 300

10.4 Multi-column worksheets

Multi-column worksheets are a useful device to help you prepare financial statements where there are many adjusting entries. For example, with a 10-column adjusted worksheet, start with the pre-adjusted trial balance (columns 1 and 2), then include adjusting entries (columns 3 and 4), followed by the adjusted trial balance (columns 5 and 6), income statement numbers (columns 7 and 8) and balance sheet numbers (columns 9 and 10).

LO1
LO9

Where adjusting entries refer to a particular ledger account in the pre-adjusted trial balance (e.g. prepayments), the amount of the adjusting entry should be entered in the appropriate adjustment column opposite the relevant ledger account. When the debit or credit part of the adjusting entry refers to a ledger account that is not in the unadjusted trial balance, the name of that ledger account should be added to the bottom of the trial balance and the amount entered opposite it in the appropriate adjustment column.

To further illustrate these adjustments, consider the trial balance in Exhibit 10.9 and the following information:

- The company prepares accounts annually.
- Ending office supplies on hand was \$13 million.
- Prepayments related to insurance policies taken out on 1 October 2022 for one year.
- Unearned revenue relates to a six-month service agreement starting on 1 November.
- At the end of the year, wages of \$3 million were still owing.
- An electricity bill was received on 10 January showing that electricity costs for December 2022 were \$2 million.
- Of the cash balance, \$27 million was on fixed deposit with the bank. The accrued interest at the end of the year was \$1 million.

EXHIBIT 10.9

WESTBANK LIMITED

TRIAL BALANCE AT 31 DECEMBER 2022

	DR \$m	CR \$m
Cash	30	
Accounts receivable	180	
Inventory	220	
Office supplies	30	
Prepayments	40	
Accounts payable		150
Unearned revenue		30
Loan		100
Share capital		80
Retained profits		40
Sales		950
Interest revenue		50
Cost of goods sold	300	
Insurance expense	100	
Wages expense	400	
Electricity expense	20	
Other expenses	<u>80</u>	<u>—</u>
	<u>1 400</u>	<u>1 400</u>

The following journal entries would be required:

		\$m	\$m
Dec. 31	DR Office supplies expense	17	
	CR Office supplies		17
	<i>To record supplies used during the period</i>		
Dec. 31	DR Insurance expense	10	
	CR Prepayments		10
	<i>To record expiration of insurance coverage</i>		
Dec. 31	DR Unearned revenue	10	
	CR Fees revenue		10
	<i>Recognising revenue for fulfilling part of service contract</i>		
Dec. 31	DR Wages expense	3	
	CR Accrued expenses		3
	<i>To record accrued salaries at year-end</i>		
Dec. 31	DR Electricity expense	2	
	CR Accrued expenses		2
	<i>To record accrued electricity at year-end</i>		
Dec. 31	DR Accrued revenue	1	
	CR Interest revenue		1
	<i>To record accrued revenue at year-end</i>		

After these entries have been posted to the ledger accounts, a multi-column worksheet such as Exhibit 10.10 could be used to provide an adjusted trial balance and inputs for the income statement and balance sheet in Exhibit 10.11.

EXHIBIT 10.10

WESTBANK LIMITED
TRIAL BALANCE AT 31 DECEMBER 2022

Account name	Trial balance		Adjustments		Adjusted trial balance		Income statement		Balance sheet	
	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit
Cash	30				30				30	
Accounts receivable	180				180				180	
Inventory	220				220				220	
Office supplies	30						17	13		13
Prepayments	40						10	30		30
Accrued revenue	0				1				1	
Accounts payable		150					150			150
Unearned revenue		30	10				20			20
Accrued expenses		0			5			5		5
Loan		100					100			100
Share capital		80					80			80
Retained profits		40					40			40
Sales		950					950			950
Interest revenue		50			1			51		51
Fees revenue		0			10			10		10
Cost of goods sold		300					300			300
Insurance expense		100			10			110		110
Wages expense		400			3			403		403
Electricity expense		20			2			22		22
Other expenses		80					80			80
Office supplies expense		0			17			17		17
Net profit								79		79
		1 400	1 400		43	43	1 406	1 406	1 011	1 011
									474	474

EXHIBIT 10.11

WESTBANK LIMITED

INCOME STATEMENT FOR THE MONTH ENDING 31 DECEMBER 2022

	\$	\$
Sales	950	
COGS	<u>300</u>	
Gross profit	650	
Other revenue:		
Interest revenue	51	
Fees revenue	<u>10</u>	<u>61</u>
	711	
Operating expenses:		
Insurance expense	110	
Wages expense	403	
Electricity expense	22	
Other expenses	80	
Office supplies expense	<u>17</u>	<u>632</u>
Net profit	<u>79</u>	

BALANCE SHEET AS AT 31 DECEMBER 2022

Account name	\$
Assets	
Current assets	
Cash	30
Accounts receivable	180
Inventory	220
Office supplies	13
Prepayments	30
Accrued revenue	<u>1</u>
Total assets	<u>474</u>
Liabilities	
Current liabilities	
Accounts payable	150
Unearned revenue	20
Accrued expenses	5
Noncurrent liabilities	
Loan	<u>100</u>
Total liabilities	<u>275</u>
Net assets	<u>199</u>
Shareholders' equity	
Share capital	80
Retained profits*	<u>119</u>
Total shareholders' equity	<u>199</u>

*Closing retained profits = 40 + 79 = 119

10.5 Illustrative example

Below, we provide an example to reinforce the material covered in Chapter 4 and earlier in this chapter. It covers journal entries, posting to the ledger, trial balance, adjustments, closing entries and preparation of financial statements.

LO1
LO10

Scanlon Limited had the following trial balance at 1 January 2022:

	Debit \$	Credit \$
Cash	200 000	
Accounts receivable	600 000	
Inventory	700 000	
Prepaid insurance	60 000	
Prepaid rent	50 000	
Equipment	1 000 000	
Accumulated depreciation		200 000
Accounts payable		500 000
Revenue received in advance		100 000
Income tax payable		500 000
Loan		570 000
Share capital		420 000
Retained profits		<u>320 000</u>
	<u>2 610 000</u>	<u>2 610 000</u>

During January 2022, the following transactions occurred:

- a cash sales \$700 000
- b credit sales \$6 100 000
- c cost of goods sold \$3 000 000
- d inventory purchased on credit \$2 600 000
- e cash collected from customers \$5 800 000
- f cash paid to suppliers \$2 800 000
- g paid income tax liability
- h paid salaries \$1 200 000, commission \$600 000, other operating expenses \$100 000
- i paid \$40 000 for insurance
- j paid \$30 000 in rent (the company debits prepaid rent)
- k depreciation expense is calculated at 12 per cent per annum on cost.
- l closing balances in the prepaid insurance and prepaid rent accounts at the end of January 2022 should be \$70 000 and \$60 000, respectively.
- m the \$100 000 revenue received in advance related to a service contract that has now been fulfilled in whole.
- n the bank owes Scanlon Limited \$5000 for interest at the end of January.

The following steps will be carried out:

- 1 Prepare journal entries for the listed transactions (Exhibit 10.12).
- 2 Enter the opening balances in the ledger accounts and post the journal entries to the ledger (Exhibit 10.13).
- 3 Prepare a trial balance at 31 January 2022 (Exhibit 10.14).
- 4 Prepare closing entries (Exhibit 10.15).

- 5 Prepare a post-closing trial balance (Exhibit 10.16).
- 6 Prepare an income statement for the month of January 2022 and a balance sheet as at 31 January 2022 (Exhibits 10.17 and 10.18).

Before preparing the financial statements, the revenue and expense accounts are closed via the closing journal entries (Exhibit 10.15). They start with a zero balance in the next accounting period to enable profit for that period to be calculated.

After posting these journal entries, a post-closing trial balance is prepared (Exhibit 10.16). The income statement and the balance sheet are provided in Exhibits 10.17 and 10.18.

EXHIBIT 10.12**SCANLON LIMITED
JOURNAL ENTRIES**

				\$	\$
a	Jan. 22	DR	Cash	700 000	
		CR	Sales		700 000
			<i>To record cash sales</i>		
b	Jan. 22	DR	Accounts receivable	6 100 000	
		CR	Sales		6 100 000
			<i>To record credit sales</i>		
c	Jan. 22	DR	COGS	3 000 000	
		CR	Inventory		3 000 000
			<i>To record cost of goods sold</i>		
d	Jan. 22	DR	Inventory	2 600 000	
		CR	Accounts payable		2 600 000
			<i>To record credit purchases</i>		
e	Jan. 22	DR	Cash	5 800 000	
		CR	Accounts receivable		5 800 000
			<i>To record payments from debtors</i>		
f	Jan. 22	DR	Accounts payable	2 800 000	
		CR	Cash		2 800 000
			<i>To record payment of accounts payable</i>		
g	Jan. 22	DR	Income tax payable	500 000	
		CR	Cash		500 000
			<i>To record payment of tax</i>		
h	Jan. 22	DR	Salaries expense	1 200 000	
		DR	Commission expense	600 000	
		DR	Other expenses	100 000	
		CR	Cash		1 900 000
			<i>To record payment of expenses</i>		
i	Jan. 22	DR	Prepaid insurance	40 000	
		CR	Cash		40 000
			<i>To record payment of insurance premium</i>		
j	Jan. 22	DR	Prepaid rent	30 000	
		CR	Cash		30 000
			<i>To record payment of rent</i>		



>				
k	31 Jan. 22	DR	Depreciation expense	10 000
		CR	Accumulated depreciation	10 000
			<i>To record one month's depreciation</i>	
l	31 Jan. 22	DR	Insurance expense	30 000
		CR	Prepaid insurance	30 000
			<i>To record insurance expense for the month</i>	
l	31 Jan. 22	DR	Rent expense	20 000
		CR	Prepaid rent	20 000
			<i>To record rent expense for the month</i>	
m	31 Jan. 22	DR	Revenue received in advance	100 000
		CR	Service fee revenue	100 000
			<i>To record the earning of service fee revenue for the month</i>	
n	31 Jan. 22	DR	Accrued revenue	5 000
		CR	Interest revenue	5 000
			<i>To record the earning of interest revenue for month</i>	

EXHIBIT 10.13

SCANLON LIMITED

LEDGER ACCOUNTS

Cash		Accounts receivable	
OB	200 000	f	2 800 000
a	700 000	g	500 000
e	5 800 000	h	1 900 000
		i	40 000
		j	30 000
CB	1 430 000		
Inventory		Prepaid insurance	
OB	700 000	OB	60 000
d	2 600 000	i	40 000
CB	300 000	CB	70 000
Prepaid rent		Equipment	
OB	50 000	OB	1 000 000
j	30 000		
CB	60 000		
Accrued revenue		Accumulated depreciation	
n	5 000		OB 200 000
			k 10 000
			CB 210 000
Revenue received in advance		Revenue received in advance	
m	100 000	OB	100 000
		CB	0

>

Accounts payable				Income tax payable			
f	2 800 000	OB	500 000	g	500 000	OB	500 000
	_____	d	<u>2 600 000</u>			CB	0
		CB	300 000				
Loan				Share capital			
		OB	570 000			OB	420 000
Retained profits				Sales			
		OB	320 000			a	700 000
Service fee revenue						b	<u>6 100 000</u>
		m	100 000				6 800 000
Cost of goods sold				Interest revenue			
c	3 000 000					n	5 000
Other expenses				Salaries expense			
h	100 000			h	1 200 000		
Commission expense					Insurance expense		
h	600 000			i	30 000		
Depreciation expense					Rent expense		
k	10 000			l	20 000		

EXHIBIT 10.14

SCANLON LIMITED

PRE-CLOSING TRIAL BALANCE AT 31 JANUARY 2022

	Debit	Credit
	\$	\$
Cash	1 430 000	
Accounts receivable	900 000	
Inventory	300 000	
Prepaid insurance	70 000	
Prepaid rent	60 000	
Accrued revenue	5 000	
Equipment	1 000 000	
Accumulated depreciation		210 000
Accounts payable		300 000
Revenue received in advance		0
Income tax payable		0
Loan		570 000
Share capital		420 000
Retained profits		320 000



Sales	6 800 000
Service fee revenue	100 000
Interest revenue	5 000
Cost of goods sold	3 000 000
Salaries expense	1 200 000
Depreciation expense	10 000
Insurance expense	30 000
Rent expense	20 000
Commission expense	600 000
Other expenses	<u>100 000</u>
	<u>8 725 000</u>
	<u>8 725 000</u>

EXHIBIT 10.15**SCANLON LIMITED
CLOSING JOURNAL ENTRIES**

	\$	\$
DR Sales	6 800 000	
DR Service fee revenue	100 000	
DR Interest revenue	5 000	
CR Profit and loss summary		6 905 000
DR Profit and loss summary	4 960 000	
CR Cost of goods sold		3 000 000
CR Salaries expense		1 200 000
CR Depreciation expense		10 000
CR Insurance expense		30 000
CR Rent expense		20 000
CR Commission expense		600 000
CR Other expenses		100 000
DR Profit and loss summary	1 945 000	
CR Retained profits		1 945 000

EXHIBIT 10.16

SCANLON LIMITED
POST-CLOSING TRIAL BALANCE

	Debit	Credit
	\$	\$
Cash	1 430 000	
Accounts receivable	900 000	
Inventory	300 000	
Prepaid insurance	70 000	
Prepaid rent	60 000	
Accrued revenue	5 000	
Equipment	1 000 000	
Accumulated depreciation		210 000
Accounts payable		300 000
Revenue received in advance		0
Income tax payable		0
Loan	570 000	
Share capital	420 000	
Retained profits	<u> </u>	<u>2 265 000</u>
	<u>3 765 000</u>	<u>3 765 000</u>

EXHIBIT 10.17

SCANLON LIMITED
INCOME STATEMENT FOR THE MONTH ENDING 31 JANUARY 2022

	\$	\$
Sales:		
Cost of goods sold	<u>3 000 000</u>	
Gross profit	3 800 000	
Other revenue:		
Service fee revenue	100 000	
Interest revenue	<u>5 000</u>	<u>105 000</u>
	<u>3 905 000</u>	
Operating expenses:		
Salaries	1 200 000	
Depreciation	10 000	
Insurance	30 000	
Rent	20 000	
Commission	600 000	
Other expenses	<u>100 000</u>	<u>1 960 000</u>
Net profit	<u>1 945 000</u>	

EXHIBIT 10.18

SCANLON LIMITED

BALANCE SHEET AS AT 31 JANUARY 2022

	\$	\$
Assets		
Current assets		
Cash	1 430 000	
Accounts receivable	900 000	
Inventory	300 000	
Prepaid insurance	70 000	
Prepaid rent	60 000	
Accrued revenue	<u>5 000</u>	
	2 765 000	
Noncurrent assets		
Equipment	1 000 000	
Accumulated depreciation	<u>210 000</u>	<u>790 000</u>
Total assets		<u>3 555 000</u>
Liabilities		
Current liabilities		
Accounts payable	300 000	
Noncurrent liabilities		
Loan	<u>570 000</u>	
Total liabilities		<u>870 000</u>
Net assets		<u>2 685 000</u>
Shareholders' equity		
Share capital	420 000	
Retained profits*	<u>2 265 000</u>	
Total shareholders' equity		<u>2 685 000</u>

*Closing retained profits = Opening retained profits + Net profit – Dividends declared
= 320 000 + 1 945 000 – 0
= 2 265 000

10.6 Electronic commerce

With the advent of sophisticated interconnected computer systems most business transactions are now conducted entirely in an electronic format. Electronic commerce ('e-commerce') is quite a challenge to financial accounting, and to internal control, because its essence is the absence of the painstaking 'paper trail' that traditionally supported accounting records. Organisations still need good records for all the reasons outlined at the beginning of this section, but clearly the form of those records has changed dramatically. These days, many companies see little cash and very few cheques as they used to from customers, with most payments being made by credit card or EFT. They don't pay their own employees by cash or cheque, but deposit their pay directly into their personal bank accounts.

LO11

E-commerce has other interesting implications for accounting. One implication is that there needs to be some compatibility between computer systems if the accounting systems on both sides of a transaction are

to recognise the transaction properly. There also needs to be some trust in the electronic media to make the system work.

A second implication is that there can be a lot of 'in transit' activities because physical transfers (such as shipments and deliveries) are usually slower than the electronic system. If you order a book from an online retailer, then you, the retailer and your credit card company will have all the electronic records completed well before the book shows up. The tendency for records to be speedier, and separate from the physical movements of a product, means that in transit items can be a challenge to control and reconcile.

A third implication for accounting is that the parties to e-commerce can be bound together quite closely, with the ability to make enquiries into each other's computer systems to find out order specifications, progress on the production of goods and other things that will help make the business relationship successful. This means that not only must the financial statements be right, but the underlying records must be accurate too, so that business partners' enquiries are answered reliably. Some external parties – such as banks, tax authorities or securities regulators – may want to go straight to the underlying records without waiting for financial statements. There's a bit of a paradox here: e-commerce both operates without paper and demands a good trail of evidence. Even when you get a parcel delivered by an overseas courier, you can usually track its delivery progress.

Financial reporting itself is going online and becoming continuous, rather than waiting for the ritual quarterly or annual reporting dates. Many references to companies' web pages are made in this book, and many versions of online, and even interactive, financial reporting are being developed. E-commerce and electronic financial reporting will certainly continue to change accounting and financial reporting dramatically in future years.

10.7 Managers, bookkeeping and control

LO11 This chapter has demonstrated that record-keeping is an important topic for managers, primarily for two reasons:

- 1 Bookkeeping, and its associated record-keeping, provides the underlying data on which accounting's information is built. To a large extent, management decision-making and evaluations of management performance depend on accounting information. Such decisions and evaluations may be constrained by the nature of the underlying data. For example, if certain events are not recognised as transactions by the bookkeeping system, they may not be reflected in the financial statements either.
- 2 Bookkeeping, and its associated record-keeping, provides the data and systems used in meeting management's important responsibilities to safeguard assets and generally keep the business under control. Management's internal control responsibilities are discussed in Chapter 7.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Ledgers and preparation of financial statements

Go to the 11 transactions given in Newcombe Limited (Practice problem C in Chapter 3) and complete the following tasks.

- 1 Prepare a set of ledgers. Use the opening balances given in the balance sheet, and post each transaction to the ledger account.
- 2 Calculate closing balances for these accounts and prepare closing entries.
- 3 Based on the ledger accounts, prepare an income statement for the month of June 2022 and balance sheet as at 30 June 2022.

PRACTICE PROBLEM B

Closing the books

The following accounts have these balances at 30 June before closing entries.

Income statement accounts	\$	Balance sheet accounts	\$
Revenues		Cash	25 000
Sales revenue	270 000	Accounts receivable	33 000
Investment revenue	36 000	Share capital	80 000
Expenses		Retained profits	125 000
Cost of goods sold	121 000		
Wages expense	98 000		
General expense	7 000		

- 1 Provide the end-of-year journal entry to close the necessary accounts.
- 2 After the closing entries, what is the balance in the following accounts?
 - a Sales revenue
 - b Retained profits

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 What is the purpose of a journal entry?
- 2 What is a chart of accounts and what determines the number of account names to be included in a chart of accounts?
- 3 Why is it beneficial for transactions to be entered into a journal rather than being entered directly to a ledger?
- 4 What is the purpose of the trial balance?
- 5 What is the purpose of closing entries?

- 6 Recently you heard a small-business entrepreneur say, 'All that financial accounting information you students learn about is not relevant to me. I just started up my business. I only have five employees: four people in the shop building the product and one person in shipping/receiving. I'm out on calls, drumming up business so I have my finger on the real pulse of the firm – that's sales. My brother pays the bills and does the payroll every two weeks. It's all simple and smooth, so why add a lot of time-consuming, costly record-keeping to it all? Prepare an appropriate response to his comments.
- 7 Given the equality of debits and credits in a trial balance, what errors may still remain in a set of accounting records? How should these errors be guarded against?
- 8 What types of errors may be detected by perusing the items in a trial balance? What procedure should be used to locate the source of the discrepancy?
- 9 If accountants miss an accrued revenue or accrued expense at the end of an accounting period, how is the problem rectified in the next period?

PROBLEMS

PROBLEM 10.1

Journal entries for simple transactions

The events listed all took place on 21 June 2022. Provide the journal entry necessary to record each event in the accounts of JKL Ltd for the year ended 30 June 2022. If no entry is required, indicate this and give reasons. In most cases, an assumption is not necessary. If you feel an assumption is necessary, however, state it.

- 1 A new general manager is hired at an annual salary of \$140 000.
- 2 A loan is obtained from the bank for \$20 000, repayable in two years' time.
- 3 A landscaper agrees to improve land owned by JKL Ltd. The agreed price for the work is \$2100 and work will begin in July 2022.
- 4 An order for \$1300 of merchandise is received from a customer along with a cash deposit of \$400.
- 5 A \$1200 insurance premium for coverage over the period from 1 July 2022 to 30 June 2023 is paid in cash.
- 6 JKL Ltd places an order for the purchase of inventories with a cost price of \$2000.

PROBLEM 10.2

Identify transactions and write journal entries for them

Southward Stores Ltd is a general merchandise retailer operating in the suburbs. During a recent month, the events in the following list happened. For each event, decide whether it is an accounting transaction. If it is an accounting transaction, state briefly why and record it in journal entry form. Indicate where in the financial statements you wish each account to appear. If it is not an accounting transaction, state briefly why it is not.

- 1 Southward borrowed \$500 000 from the Commonwealth Bank. Payment is due in three years, but the loan can be called on 10 days' notice if Southward fails to make any of the monthly interest payments, which begin next month.
- 2 The company ordered inventory for resale, costing \$300 000, to be delivered in 40 days, and sent a deposit of \$10 000 with the order.
- 3 The company renewed its lease on the store premises, signing an agreement that stipulated that, beginning in three months, the monthly rent would rise from \$21 000 to \$23 000.
- 4 Southward was charged with unfair pricing of its main line of merchandise. News of this sent the company's shares (listed on the stock exchange) down in price from \$10 to \$8.50 each. The company has one million shares issued, all publicly traded.
- 5 The company declared a dividend of 0.50 cents per share, to be paid in one week, on each of its one million issued shares. This news sent the company's shares up by \$0.40 each on the stock exchange.

PROBLEM 10.3

Chart of accounts and source documents

The Great Outdoors Ltd has been established to retail bushwalking and mountaineering equipment. It proposes to open a shop in a suburban shopping centre that is currently under construction. To attract

customers, a noticeboard will be provided for bushwalking clubs to post details of walks and other activities. The shop assistants will be experienced walkers, able to advise customers on equipment and routes for walking trips. An agency for the Youth Hostel Association will be established in the shop.

- 1 Indicate the information you would need to enable you to design a suitable accounting system.
- 2 Describe the source documents that would be employed in the system.
- 3 Prepare a suitable chart of accounts.

PROBLEM 10.4

Accounting cycle with a very small number of transactions

RST Ltd starts the year with only two account balances: cash \$10 000 and share capital \$10 000.

The following transactions occurred during the year:

- a Credit sales for services, \$80 000.
- b Received cash from accounts receivable for \$60 000.
- c Paid wages of \$50 000 and other expenses of \$10 000.
- d At year-end there was an unpaid electricity bill for \$5000.

Required:

- 1 Prepare journal entries.
- 2 Post to the ledger.
- 3 Prepare a trial balance.
- 4 Prepare closing entries.
- 5 Prepare an income statement, balance sheet and statement of cash flows (note all cash flows are operating).

PROBLEM 10.5

Complete the accounting cycle from journal entries to financial statements

Take the transactions for Hoad Ltd (Problem 3.13 in Chapter 3) and:

- 1 prepare journal entries
- 2 post to the ledger accounts
- 3 prepare a trial balance
- 4 prepare closing entries
- 5 prepare an income statement and a balance sheet.

PROBLEM 10.6

Complete the accounting cycle from journal entries to financial statements

Cleaner Pools Ltd is a small pool shop situated in Oatley in the southern suburbs of Sydney. The business sells and repairs pool filters as well as providing consulting services on pool layouts. At 30 June 2022 it had the following assets, liabilities and shareholders' equity account balances: cash \$3000; accounts receivable \$4000; inventory \$4500; creditors \$3500; retained profits \$2000; and share capital \$6000. The company's chart of accounts is shown.

01	Cash
02	Accounts receivable
03	Inventory
04	Prepayments
11	Furniture and fittings
12	Accumulated depreciation – furniture and fittings
20	Accounts payable
22	Accrued expenses
30	Share capital
31	Retained profits

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40	Sales
41	Consulting revenue
42	Repairs revenue
50	COGS
51	Salaries
52	Rent
53	Motor vehicle expenses
54	Stationery
55	Depreciation – furniture and fittings
56	Advertising
57	Photocopier rental expenses

The following transactions occurred during July 2022:

Date	Transaction
July 1	Paid \$2400 for three months' rent on the premises, which covers from 1 July to 30 September 2022.
5	Completed a consulting job providing advice to a local developer on the design of a pool. Invoiced the developer for \$1400 to be paid in 15 days.
6	Repaired a pool filter and received a cash payment of \$100.
8	Credit purchase of shelving for \$2100 in the business office (payable in 30 days). Cash payment of \$300 to a tradesperson for installation of the shelves.
11	Sold three filters for \$900 cash each. (Cost of goods was \$1600 in total.)
13	Paid accounts payable, \$3500.
15	Received \$4000 from accounts receivable.
16	Purchased, for cash, office furniture that had a list price of \$4000 but was on sale for \$3000.
18	Received a bill for \$400 for advertising, payable in 10 days.
19	Paid the rental expense on the company photocopier of \$400, which covers the month of July.
23	Cash petrol expenses, \$50.
24	Cash purchase of office stationery, \$100.
28	Paid advertising bill.
29	Paid salaries for the month of \$2000. An amount of \$200 in wages was still owing at the end of the period.
29	Received \$1400 for 5 July transaction.
31	Charged depreciation on the furniture and fittings of \$100.

- 1 Show the relevant journal entries.
- 2 Post to the ledger.
- 3 Extract a trial balance at 31 July 2022.
- 4 Prepare an income statement for the month of July 2022 and a balance sheet as at 31 July 2022.

PROBLEM 10.7

Journal entries, post to the ledger and extract trial balance

Take the transactions for Roche Ltd (Problem 3.15 in Chapter 3) and complete the following tasks.

- 1 Prepare journal entries.
- 2 Post to the ledger accounts.
- 3 Prepare a trial balance.

PROBLEM 10.8

Accounting cycle and chart of accounts

Carlson Ltd is a business selling freezers to the public. This is its first year of operations. The chart of accounts is as follows.

Chart of accounts			
1-9	Shareholders' equity	30-39	Assets
1	Share capital	30	Bank of NZ
2	Retained profits	31	Sundry debtors
9	P & L summary	32	Inventories
		35	Delivery truck
10-19	Liabilities	40-49	Expenses
10	Sundry creditors	40	COGS
15	Loan from Finance Co.	42	Salary - shop assistants
20-29	Revenue	45	Delivery truck expenses
20	Sales	47	Office expenses
		49	Interest expense

Transactions for April 2022 were as follows:

2022		
Apr.	1	Owners introduced \$150 000 in share capital, deposited in Bank of New Zealand.
	2	Delivery truck bought from finance company for \$80 000 to become long-term loan.
	4	Goods purchased on credit for resale for \$200 000.
	7	Paid delivery truck expenses, \$4800.
	10	Sales made for cash, totalling \$50 000 invoice value - original cost \$30 000.
	15	Sales made to credit customers, \$120 000 invoice value - original cost \$70 000.
	25	Shop assistants' salary for month paid, totalling \$8000.
	27	Paid office expenses, \$26 000.
	29	Received \$90 000 from credit customers.
	29	Paid sundry creditors, \$100 000.
	29	Paid interest on loan, \$800.

- 1 Enter the transactions in a general journal.
- 2 Post to the ledger.
- 3 Extract a trial balance.
- 4 Prepare, and post, closing entries.
- 5 Prepare an income statement for April 2022.
- 6 Extract a post-closing trial balance and prepare a balance sheet at 30 April 2022.

PROBLEM 10.9

Journal entries for a small new business

At the end of last year, Fergama Productions Ltd, a company in the film industry, had the following closing accounts (in no particular order).

	\$		\$
Cash	23 415	Share capital	20 000
Accounts payable	37 778	Office equipment cost	24 486
Accumulated depreciation	11 134	Accounts receivable	89 455
Retained profits	51 434	Inventory of supplies	10 240
Long-term loan payable	15 000	Taxes payable	12 250

During this year, the company's activities resulted in the following:

- a Revenue, all on credit, totalled \$216 459.
- b Production expenses totalled \$156 320, \$11 287 of which was paid in cash and the rest charged.
- c Depreciation on the office equipment came to \$2680 for the year.
- d The company bought, on credit, new supplies costing \$8657 and used up supplies costing \$12 984 during the year.
- e Income tax expense for the year was estimated to be \$12 319.
- f The board of directors declared a dividend of \$25 000.
- g Collections from customers totalled \$235 260.
- h Payments to suppliers totalled \$172 276.
- i Payments of taxes totalled \$18 400.
- j A \$5000 payment was made on the long-term loan.
- k The dividend was paid in cash to shareholders.

Required:

- 1 To get you started, prepare a balance sheet for Fergama Productions Ltd as at the end of the last year.
- 2 Record the activities for this year using journal entries, then enter those entries to ledgers.
- 3 Prepare a trial balance of your accounts to show that they balance.
- 4 From those accounts, prepare the following financial statements:
 - a an income statement for this year
 - b a balance sheet at the end of this year
 - c a note showing the change in balance of the retained profits account.
- 5 Comment on what the financial statements show about the company's performance for this year and its financial position at the end of this year. Would you say the company is better off than it was last year?

PROBLEM 10.10

Trial balances

Which of the following errors would be detected by the preparation of a trial balance?

- 1 Goods were sold to a customer for \$540. The invoice showed \$5.40, which was the amount duly paid by the customer.
- 2 To record the purchase of a computer on credit, both the computer account and the accounts payable account were credited.
- 3 When an account from the service station was paid, the motor vehicle expenses account was debited with \$149 and the cash account was credited with \$194.
- 4 A photographic machine was repaired, but the invoice for the work was lost in the post.
- 5 Cash sales of \$1470 were made. The bookkeeper correctly debited the cash account, but the corresponding credit was never made.

- 6 A salesman left the keys in one of the firm's vehicles, which was stolen and never recovered. The accountant had omitted to renew the insurance policy on the vehicle.
- 7 In listing the balances of the accounts, the balance of the postages account was shown as \$541 instead of the correct figure of \$514, and the balance of the donations account was shown as \$3 instead of the correct figure of \$30.

PROBLEM 10.11

Finding missing values from ledgers

Assets	2022 \$	2021 \$	Liabilities and shareholders' equity	2022 \$	2021 \$
Cash	50 000	40 000	Accounts payable	45 000	30 000
Inventory	60 000	35 000	Retained profits	36 000	10 000
Accounts receivable	<u>71 000</u>	<u>65 000</u>	Share capital	<u>100 000</u>	<u>100 000</u>
	<u>181 000</u>	<u>140 000</u>		<u>181 000</u>	<u>140 000</u>

Some other information related to the year ended 30 June 2022:

- a Credit sales, \$130 000.
- b Purchase of inventory on credit, \$70 000.
- c No dividends were declared or paid.

Required:

- 1 What was cost of goods sold for the period?
- 2 Assume accounts payable only relate to inventory. How much in cash was paid to accounts payable?
- 3 How much cash was received from accounts receivable?
- 4 What was the profit for the year?

PROBLEM 10.12

Completing the accounting cycle

Take the transactions for Rosewall Ltd (Problem 3.10 in Chapter 3) and complete the following tasks.

- 1 Prepare journal entries.
- 2 Post to the ledger accounts.
- 3 Prepare a pre-closing trial balance.
- 4 Prepare closing entries.
- 5 Prepare a post-closing trial balance.
- 6 Prepare an income statement and balance sheet.

PROBLEM 10.13

Closing entries

JONES LTD
PRE-CLOSING TRIAL BALANCE AT 30 JUNE 2022

	DR \$	CR \$
Cash	120 000	
Accounts receivable	290 000	
Inventory	350 000	
Prepaid insurance	25 000	
Equipment	260 000	
Accumulated depreciation		32 000
Accounts payable		150 000

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<<	Salaries payable	12 000
	Loan	186 000
	Share capital	300 000
	Retained profits	300 000
	Sales	320 000
	COGS	190 000
	Depreciation expense	2 000
	Rent	10 000
	Salaries expense	37 000
	Insurance expense	5 000
	Telephone expense	5 000
	Electricity expense	6 000
		1 300 000
		1 300 000

Prepare the closing entries for Jones Ltd.

PROBLEM 10.14

Reconstruct journal entries from T-accounts

Sanderson Electronics is a new retail store that sells mainly small parts, such as switches, circuit boards and wire. Sanderson's ledger accounts are shown in T-account form, with entries made for the first month of business.

Cash		Accounts receivable		Supplies	
(a) 30 000	(c) 1 200	(e) 900	(g) 650	(i) 300	
(f) 1 300	(h) 1 000	(f) 1 400			
(g) 650	(j) 560				
Equipment		Inventory		Accounts payable	
(c) 3 600		(b) 5 000	(e) 540	(h) 1 000	(b) 5 000
			(f) 1 620		(d) 700
Notes payable		Share capital		Sales revenue	
(j) 500	(c) 2 400		(a) 30 000		(e) 900
					(f) 2 700
Supplies expense		Interest expense		COGS	
(d) 700	(i) 300	(j) 60		(e) 540	
				(f) 1 620	

For each of the transactions (a) to (j), write the general journal entry that was used to post the accounts, including an explanation of the entry.

PROBLEM 10.15

Accounting cycle

Wan Chai Ltd is a small wholesaler of electronic components located near Hong Kong's central business district. The firm has provided a year-end balance sheet at 30 June 2022 and a summary of all the transactions that occurred in the month of July 2022.

**WAN CHAI LTD
BALANCE SHEET AS AT 30 JUNE 2022**

	\$
Current assets	
Cash	324 000
Accounts receivable	906 000
Inventory	1 332 000
Prepaid insurance	42 000
Prepaid rent	<u>144 000</u>
Total current assets	<u>2 748 000</u>
Noncurrent assets	
Buildings and equipment	3 240 000
Accumulated depreciation	<u>(804 000)</u>
Total noncurrent assets	<u>2 436 000</u>
Total assets	<u>5 184 000</u>
Current liabilities	
Accounts payable	1 620 000
Accrued wages	264 000
Unearned revenue	<u>348 000</u>
Total current liabilities	<u>2 232 000</u>
Noncurrent liabilities	
Loan	<u>1 200 000</u>
Total noncurrent liabilities	<u>1 200 000</u>
Shareholders' equity	
Share capital	1 420 000
Retained profits	<u>332 000</u>
Total shareholders' equity	<u>1 752 000</u>
Total liabilities and shareholders' equity	<u>5 184 000</u>

The transactions are as follows:

- a Paid wages outstanding at the end of June.
- b Made credit sales of \$1 254 000. (The cost of those goods sold was \$750 000.)
- c Paid \$1 020 000 to accounts payable.
- d Purchased \$480 000 inventory on credit.
- e Paid cash for an annual insurance premium of \$504 000 (12-month policy starting 1 August 2022).
- f Received \$1 680 000 from debtors.
- g Made cash sales totalling \$270 000. (The cost of those goods sold was \$192 000.)
- h Interest on the loan is at 10 per cent per annum and will be paid in September.
- i The work related to unearned revenue was completed.
- j Paid wages expense of \$186 000 for July. Wages owing at the end of July are \$60 000.
- k Paid rent for August of \$144 000. (Rent is payable monthly in advance, at \$144 000 per month.)

- I Paid administrative expenses, incurred during the month, of \$126 000.
 - m Depreciation is calculated monthly at 20 per cent per annum for plant and equipment, based on cost.
 - n Commissions are determined on the last day of the month at \$13 200. They will be paid next month.
 - o The company is owed \$10 000 in interest from the bank at the end of July.
- Using Wan Chai Ltd's previous balance sheet as a starting point, prepare the following data for the month ending 31 July 2022:
- 1 journal entries and ledger accounts
 - 2 post-adjustment trial balance
 - 3 balance sheet and Income statement.

PROBLEM 10.16

Recording adjusting entries and preparing a balance sheet and income statement

PRS Ltd has the following unadjusted trial balance at 31 December 2021.

Account titles	Debit \$	Credit \$
Cash	19 600	
Accounts receivable	7 000	
Supplies	1 300	
Prepaid insurance	900	
Equipment	27 000	
Accumulated depreciation		12 000
Other assets	5 100	
Accounts payable		7 500
Share capital		16 000
Retained profit		10 300
Service revenue		48 000
COGS	<u>32 900</u>	
	93 800	93 800

Data not yet recorded at 31 December 2021 include the following:

- a Depreciation expense for 2021 was \$4000.
- b Insurance expired during 2021 was \$450.
- c Wages earned by employees but not yet paid on 31 December 2021 was \$1100.
- d The supplies count on 31 December 2021 reflected \$800 remaining supplies on hand to be used in 2022.
- e Income tax expense was \$2150.

Required:

- 1 Record the 2021 adjusting entries.
- 2 Prepare an income statement and a classified balance sheet for 2021 to include the effects of the preceding five transactions.
- 3 Prepare closing entries.

PROBLEM 10.17

Ten-column worksheet

Refer to the Scanlon Ltd example earlier in the chapter. Complete a 10-column worksheet separating out transaction k onwards as adjusting entries.

PROBLEM 10.18

Comprehensive example including a multi-column worksheet

CANBERRA LTD
BALANCE SHEET AS AT 31 DECEMBER 2020

Assets	\$	Liabilities	\$
Current assets		Current liabilities	
Cash	21 000	Accounts payable	27 000
Accounts receivable	39 000	Unearned revenue	<u>32 000</u>
Inventory	40 000	Total current liabilities	<u>59 000</u>
Prepaid rent	<u>11 000</u>		
Total current assets	<u>111 000</u>	Noncurrent liabilities	
		Long-term debt	0
Noncurrent assets		Total noncurrent liabilities	<u>0</u>
Land	100 000	Total liabilities	<u>59 000</u>
Property and equipment	400 000	Net assets	<u>562 000</u>
Accumulated depreciation	(80 000)		
Intangible assets (net)	<u>90 000</u>	Shareholders' equity	
Total noncurrent assets	<u>510 000</u>	Share capital	520 000
		Retained profits	<u>42 000</u>
Total assets	<u>621 000</u>	Total shareholders' equity	<u>562 000</u>

The following transactions occurred for Canberra Ltd in 2021:

- a Issued share capital for \$200 000 cash.
 - b Purchased \$35 000 of inventory on credit.
 - c Paid \$28 000 to accounts payable.
 - d Sold inventory costing \$60 000 for \$270 000. All sales are on credit.
 - e Collected \$52 000 from customers.
 - f Prepaid \$12 000 rent for the year commencing 1 January 2022.
 - g Depreciated property and equipment for the year using the straight-line method (20 per cent per annum).
 - h Dividends declared and paid totalled \$30 000.
 - i Borrowed \$100 000 on 1 July 2021. The loan is due on 30 June 2022 and carries a 10 per cent p.a. interest rate. Paid \$4000 interest on this loan during 2021.
 - j On 1 November paid \$24 000 for an insurance policy covering 1 November 2020 to 31 October 2021.
 - k Paid wages of \$90 000; wages of \$20 000 had been earned but not paid.
 - l Received interest of \$5000 in cash from the bank.
- On 31 December 2021:
- m The unearned revenue account had a balance of \$5000.
 - n Accrued interest revenue had a balance of \$2000.

Required:

- 1 Prepare journal entries for the transactions.
- 2 Prepare ledgers.
- 3 Prepare closing entries.
- 4 Prepare a 10-column worksheet.
- 5 Prepare an income statement and balance sheet for Canberra Ltd for the year ended 31 December 2021.

PROBLEM 10.19

Classifying balance sheet items

An adjusted trial balance at 31 December 2022 for a toy manufacturer is given as follows:

	Debit \$	Credit \$
Accounts receivable	295 000	
Accounts payable		120 000
Property, plant and equipment	1 000 000	
Accumulated depreciation		400 000
Income tax payable		40 000
Revenue received in advance		10 000
Prepaid expenses	20 000	
Accrued wages		25 000
Inventory	200 000	
Cash	60 000	
Accrued revenue	20 000	
Long-term debt		100 000
Share capital		700 000
Retained profits at 1 January 2022		150 000
Sales		800 000
Cost of goods sold	500 000	
Depreciation expense	20 000	
Other operating expenses	150 000	
Income tax expense	<u>80 000</u>	
	<u>2 345 000</u>	<u>2 345 000</u>

- 1 In the balance sheet, prepared at 31 December 2022:
 - a What would be the balance of total current assets?
 - b What would be the balance of total current liabilities?
 - c What would be the balance of total noncurrent assets?
 - d What would be the closing balance of retained profit?
- 2 What was the balance of the accumulated depreciation account at 31 December 2021, assuming no property, plant and equipment was disposed of during the year?

PROBLEM 10.20

Accounting transactions: reconstruction required

The balance sheet and income statement of Reconstruction Limited are reproduced as follows.

RECONSTRUCTION LIMITED BALANCE SHEET

	31/12/2022	31/12/2021
	\$	\$
Assets		
Cash	0	5 000
Accounts receivable	40 000	27 000
Prepaid insurance	3 000	2 000
Equipment	90 000	90 000
less Accumulated depreciation	(31 000)	(22 000)
Motor vehicle	25 000	25 000
less Accumulated depreciation	(10 000)	(5 000)
Total assets	117 000	122 000
Liabilities		
Accounts payable	500	1 000
Wages payable	6 000	4 000
Interest payable	2 500	3 000
Income tax payable	0	2 000
Long-term loan	50 000	50 000
Total liabilities	59 000	60 000
Net assets	58 000	62 000
Shareholders' equity		
Share capital	39 000	39 000
Retained profits	19 000	23 000
Total shareholders' equity	58 000	62 000

RECONSTRUCTION LTD INCOME STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2022

	\$	\$
Fees revenue		105 000
Depreciation expense	(14 000)	
Electricity expense	(8 000)	
Insurance expense	(17 000)	
Interest expense	(4 500)	
Rent expense	(24 000)	
Stationery expense	(3 500)	
Wages expense	(38 000)	(109 000)
Profit/(loss) before tax		(4 000)
Income tax expense		0
Profit/(loss) after tax		(4 000)

- 1 How much cash was paid for insurance during the year?
- 2 How much cash was paid for electricity during the year?
- 3 How much cash was paid for interest during the year?
- 4 How much cash was paid for income tax during the year?
- 5 The last monthly rent payment was made on 15 December 2022. Monthly rent is \$2000 per month. How much rent is owing as at the end of the year?

CASES

CASE 10A

Woolworths Ltd

Refer to the extracts of the annual report of Woolworths Ltd in this book's appendix. All questions relate to the consolidated accounts.

- 1 Prepare an example of the assets component of the chart of accounts that could be used by Woolworths.
- 2 What journal entry would Woolworths Ltd write for each of the following?
 - a A cash sale of \$38
 - b The purchase of 1000 white folders for \$3 each on credit for resale
 - c The payment of weekly wages of \$1 million
 - d The purchase of shop fittings on credit for \$800 000
 - e A bill to clients for management fees of \$1 million
 - f The receipt of \$1 million in management fees from clients

CASE 10B

Accounting records

A newspaper article referred to a Gold Coast building company being wound up owing Queensland businesses more than \$7.5 million. The article referred to the liquidator learning of creditors that weren't listed in the company's records.

- 1 From an accounting recording perspective, explain how the creditors would not be listed on the company's balance sheet.
- 2 If creditors were not listed, what other balance sheet or income statement item is likely to be understated?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

10A (i)

		\$	\$
DR	Accounts receivable	80 000	
CR	Sales revenue		80 000
DR	COGS	50 000	
CR	Inventory		50 000

(ii)

		\$	\$
DR	Cash	40 000	
CR	Sales revenue		40 000
DR	COGS	25 000	
CR	Inventory		25 000

- 10B** While you will be introduced to other transactions that will impact these accounts as you progress through the topics, the answers that follow are examples you would be expected to know at this stage.

- (i) Increase: credit sales; decrease: receipts from customers
(ii) Increase: purchases of inventory; decrease: cost of goods sold

10C

Cash			Inventory		
OB	4 000		OB	2 000	10/2
10/2	<u>1 500</u>		CB	900	<u>1 100</u>
CB	5 500				
Sales revenue			COGS		
		10/2	10/2	1 100	
		1 500			

10D Liabilities, shareholders' equity and revenue account normally have a CR balance. Therefore, the following accounts from the list would normally have CR balances: sales, wages payable, share capital, accounts payable.

10E Only error (iii) would be identified.

10F

		\$	\$
30/9	DR	Sales revenue	5 737
	DR	Interest revenue	20
	CR	Profit and loss summary	5 757
	DR	Profit and loss summary	2 097
	CR	Depreciation expense	132
	CR	Rent expense	420
	CR	Other expenses	850
	CR	Travel expense	695
	DR	Profit and loss summary	3 660
	CR	Retained profits	3 660

10G Both cash and sales revenue would be too low by \$6782. This error would not have been picked up from the trial balance.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1 Posting to the ledger accounts. Note as per part 2 of the question, the ledger accounts that follow show the closing balances and the closing entries have been posted.

Cash					
	OB	90 000	e	Loan	60 000
a	Accounts receivable	23 000	f	Admin expenses	7 000
b	Share capital	80 000	h	Wages expenses	13 000
		<u> </u>	i	Inventory	28 000
		<u> </u>	j	Dividends	6 000
		<u> </u>	k	Accounts payable	<u>36 000</u>
	CB	43 000			
Accounts receivable					
	OB	106 000	a	Cash	23 000
c	Sales	<u>76 000</u>			<u> </u>
	CB	159 000			

>>

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Inventory				
	OB	118 000	c	Cost of goods sold
i	Cash	<u>28 000</u>		—
	CB	114 000		
Prepayments				
	OB	<u>45 000</u>	g	Prepaid expense
	CB	36 000		9 000
Equipment				
	OB	400 000		
Accumulated depreciation				
			OB	125 000
			d	Depreciation expenses
				<u>4 000</u>
			CB	129 000
Accounts payable				
k	Cash	<u>36 000</u>	OB	<u>110 000</u>
			CB	74 000
Loan				
e	Cash	<u>60 000</u>	OB	<u>240 000</u>
			CB	180 000
Share capital				
			OB	200 000
			b	Cash
				<u>80 000</u>
			CB	280 000
Retained profits				
j	Dividend	6 000	OB	84 000
		—	P & L summary	<u>11 000</u>
			CB	89 000
Revenue				
	P & L summary	76 000	c	Accounts receivable
Cost of goods sold				
c	Inventory	32 000	P & L summary	32 000
Depreciation expense				
d	Accumulated depreciation	4 000	P & L summary	4 000
Administrative expenses				
f	Cash	7 000	P & L summary	7 000
Prepaid expenses				
g	Cash	9 000	P & L summary	9 000
Wages expenses				
h	Cash	13 000	P & L summary	13 000

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P & L summary			
Cost of goods sold	32 000	Revenue	76 000
Administrative exp	7000		
Prepaid exp	9000		
Wages exp	13 000		
Depreciation exp	4 000		
Retained profits	11 000		

- 2 The closing entries are as shown. The postings were seen in the ledger accounts in the solution to part 1.

		\$	\$
30/6	DR	Revenue	76 000
	CR	P & L summary	76 000
	DR	P & L summary	65 000
	CR	Cost of goods sold	32 000
	CR	Administrative exp	7 000
	CR	Prepaid expense	9 000
	CR	Wages expense	13 000
	CR	Depreciation exp	4 000
	DR	P & L summary	11 000
	CR	Retained profits	11 000

3

NEWCOMBE LTD
INCOME STATEMENT FOR THE MONTH ENDED 30 JUNE 2022

	\$	\$
Sales	76 000	
Cost of goods sold	(32 000)	
Gross profit	44 000	
Operating expenses		
Wages	13 000	
Prepaid expenses	9 000	
Administrative	7 000	
Depreciation	4 000	(33 000)
Net profit		11 000

NEWCOMBE LTD
BALANCE SHEET AS AT 30 JUNE 2022

	\$		\$
Current assets		Current liabilities	
Cash	43 000	Accounts payable	74 000
Accounts receivable	159 000		
Inventory	114 000	Noncurrent liabilities	
Prepayments	<u>36 000</u>	Long-term loan	<u>180 000</u>
	352 000		254 000
Noncurrent assets		Shareholders' equity	
Equipment	400 000	Share capital	280 000
Accumulated depreciation	<u>(129 000)</u>	Retained profits	<u>89 000</u>
	271 000		369 000
Total assets	<u>623 000</u>	Total liabilities and equity	<u>623 000</u>

PRACTICE PROBLEM B

1

	\$	\$
30/6 DR	Sales revenue	270 000
DR	Investment revenue	36 000
CR	P & L summary	306 000
DR	P & L summary	226 000
CR	Cost of goods sold	121 000
CR	Wages expense	98 000
CR	General expense	7 000
DR	P & L summary	80 000
CR	Retained profits	80 000

2 a Sales revenue: \$0

b Retained profit = \$125 000 (Opening balance) + \$80 000 = \$205 000

Accounts receivable and further record-keeping

11



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** understand the principles of recording sales transactions in accordance with accrual accounting (11.1)
- LO2** understand the use of contra accounts for recording of doubtful debts (11.2, 11.3)
- LO3** prepare journal entries for managing accounts receivable, including increasing the allowance for doubtful debts and writing off bad debts (11.3, 11.4)
- LO4** demonstrate the financial statement impacts of doubtful debts and bad debts (11.3, 11.4)
- LO5** calculate trade discounts for early payment of accounts receivable and payable, and record appropriately (11.5)
- LO6** understand the role of special journals, subsidiary ledgers and control accounts within the accounting recording system (11.6, 11.7, 11.8, 11.10)
- LO7** record transactions using special journals, subsidiary ledgers and control accounts (11.9)
- LO8** explain the role of bank reconciliations as part of an internal control system (11.11)
- LO9** prepare a bank reconciliation statement (11.12).

CHAPTER OVERVIEW

This chapter covers key issues related to accounting for sales revenue. This includes a detailed discussion of how to account for sales made where the cash has not yet been received (accounts receivable), as well as how accountants anticipate that not all of the credit extended to customers of the business will be repaid in full. We consider how accountants and managers deal with unpaid client accounts and the differing approaches that can be taken. We go deeper into the accounting recording system with a discussion of the use of special journals, subsidiary ledgers and control accounts, which is relevant for those students wishing to acquire a detailed knowledge of accounting recording systems. Bank reconciliations, a key control for cash, are also presented.

11.1 Receivables

LO1 Receivables are an asset that occurs when goods or services have been provided but cash will not be received until the following period. Common examples of receivables include accounts receivable, interest receivable on loans, commissions earned and unbilled revenues. For example, let's consider the example of Telstra, a telecommunications company that bills its customers monthly or quarterly. When it bills customers for phone and internet services they have used for the month, the company increases accounts receivable and increases sales revenue. When the cash is received from the customer, cash is increased and accounts receivable is decreased. Note that this later journal entry does not affect profit because the revenue was recognised at the point of sale, not later when cash is received. The journal entries for a customer of Telstra who is billed for use of a month of internet and phone services for their company would be:

At time of sale:			\$	\$
DR	Accounts receivable		10 000	
CR	Sales revenue			10 000
When cash is received:				
DR	Cash		10 000	
CR	Accounts receivable			10 000

You will recall that accounts receivable is a current asset that will appear in the balance sheet, and sales revenue is a revenue account that will appear in the income statement for the year ended 30 June 2022.

Let's consider another type of unrecorded revenue that you saw in Chapter 4. For example, assume a company deposited \$300 000 with a bank for one year at 10 per cent on 1 March 2022 (interest payable at the end of the period). At 30 June 2022, they would have earned \$10 000 interest, although the total interest of \$30 000 would not be received until 28 February 2023.

Accrued interest (also called interest receivable), which is an asset, would be increased by \$10 000, and interest revenue would be increased by \$10 000.

Assets	=	Liabilities	+	Equity
Accrued revenue				Interest revenue
30 June		+10 000		+10 000
Total		+10 000		+10 000

Accrued revenue (or interest receivable) is a current asset that will appear in the balance sheet, and interest revenue is a revenue account that will appear in the income statement for the year ended 30 June 2022.

The journal entry would be:

			\$	\$
30 June	DR	Accrued revenue	10 000	
	CR	Interest revenue		10 000

Recall that we discussed how Telstra bills its customers. However, at 30 June there will be a lot of telephone calls that have been made but not yet billed. For example, if you receive a bill on 1 June (and you are billed quarterly), you will not receive another bill until 1 September. As telephone calls have been made in June, Telstra has provided the service; therefore, it is entitled to recognise the revenue. Telstra's financial statements (see Exhibit 11.1) show accrued revenue of \$325 million (\$565 million in 2020) under current assets. That is, at the end of the year, it increased accrued revenue and increased sales revenue.



HOW'S YOUR UNDERSTANDING?

- 11A** What effect would failure to make adjustments for accrued revenue have on the balance sheet and the income statement?
- 11B** A company has a \$50 000 balance in the company's accrued revenue account. Where would this account appear in the balance sheet?

11.2 Control accounts and contra accounts

A company's balance sheet account is typically composed of many accounts. These accounts are known as control accounts. Cash is the sum of the physical cash on hand and the multiple bank accounts held by the company. Accounts receivable is the sum of all the company's individual customers' accounts. Inventory is the amount that should be found if the company lists or counts all the unsold goods physically on hand. Accounts payable is the sum of all the company's individual suppliers' accounts. The number of shares outstanding should be traceable to the company's share capital account. (The particular owners may change, for example, because of trading on the stock market, but the company should always know how many shares it has issued and the original issue price that was received for them.) Even the property, plant and equipment asset accounts are control accounts, as these represent the sum of all the assets whose costs are included that should be physically present.

The value of all these accounts as control accounts is that the amounts in them should be supported by, or reconcilable to, detailed lists or subsidiary ledgers, or some background data. What then could we do if we were required to make a change in a balance sheet account without changing the underlying records and lists?

In Chapter 4 we introduced the idea of a contra account to allow us to recognise expenses and related value changes to assets without changing the control account. The example we considered in Chapter 4 was accumulated depreciation, which was deducted from the cost of the asset to give the net book value of the asset that is shown on the face of the balance sheet.

So here is another form of contra account:

- We have become worried that we might not be able to collect all the accounts receivable, so, for conservatism and proper profit measurement, we want to recognise that we anticipate that there will be some 'bad debts'. However, we do not want to directly change the accounts receivable control account because it should correspond to the list of customers' accounts, and we have not yet given up on collecting any accounts receivable, so the control feature is still useful.

Recall from Chapter 4 that contra accounts have balances that are in the opposite direction to those of the control accounts with which they are associated. For example, contra asset accounts have credit balances that are 'contra' the assets' debit balances. Here we will focus only on one of the most common uses of contra accounts: allowing for doubtful accounts receivable. Here the asset, accounts receivable, will have a debit balance and the contra account, allowance for doubtful debts, will have a credit balance.

11.3 Accounts receivable and contra accounts

Before considering the use of the contra account called allowance for doubtful debts, we will provide a brief overview of the asset to which it relates, accounts receivable. Most accounts receivable are *recognised but uncollected revenue*, created by the accrual accounting entry: DR accounts receivable, CR sales revenue. Such receivables arise from the company's day-to-day business activities and are therefore often called trade receivables. They are included in current assets because they are usually expected to be collected within one year.

LO2

LO3

LO4

Valuation of accounts receivable

Receivables are valued on the balance sheet at the lower of cost or net realisable value. 'Cost' here is the original transaction value of the sale that gave rise to the receivable, plus any subsequent interest charges. Net realisable value is the amount expected to be collected (the cash value of the receivables, if you like). There is often collection uncertainty, and companies often experience difficulties in collection, especially as time passes after the sale. So, if the collectable amount is now expected to be lower than originally anticipated, the receivable must be reduced to an estimated collectable amount. The method for doing this involves subtracting an allowance for doubtful accounts from the accounts receivable balance.

The estimated collectable amount is gross accounts receivable minus the allowance for doubtful debts. Therefore, the allowance functions to adjust the net value down to the lower of cost (original value) and the current estimated collectable amount. On the balance sheet, accounts receivable are valued at this net amount. Australian companies show in the notes to the financial statements the amount of the allowance for doubtful debts deducted from gross accounts receivable.

For example, Telstra Corporation Limited, in its 2021 balance sheet, shows trade and other receivables and contract assets of \$4 577 000 000 in the current assets section. This amount is net accounts receivable and its breakup is shown in note 3.3 of the accounts as shown in Exhibit 11.1.

EXHIBIT 11.1

TELSTRA CORPORATION LIMITED

NOTE 3.3: TRADE AND OTHER RECEIVABLES

	As at 30 June	
	2021 \$m	2020 \$m
Current		
Trade receivables	3 136	3 248
Allowance for doubtful debts	(210)	(152)
	2 926	3 096
Finance lease receivable	80	90
Accrued revenue	325	565
Other receivables	253	355
	3 584	4 106

Telstra Corporation Limited, *Annual Report 2021*, notes to financial statements, p. 116. Reproduced with permission.
(<https://www.telstra.com.au/content/dam/tcom/about-us/investors/pdf-g/0821-TEL-AR-2021-FINAL-Singles.pdf>).

Trade receivables are shown at their gross amount (\$3136 million), and the allowance for doubtful debts (\$210 million) is deducted.

Other receivables

There are two other main kinds of receivables. If these are large, they are shown separately, but if not, they are usually just lumped together under the heading 'Other debtors'.

The first kind is notes receivable. These are supported by a signed contract between buyer and seller that specifies a payment schedule, an interest rate and, often, other legal details. Such notes are often used for large and/or long-term receivables, such as sales of motor vehicles, houses or appliances, and loans by banks and finance companies (long-term receivables would be properly classified as noncurrent rather than current assets). Notes are shown at present value (only interest that has built up so far is included in the asset, not future interest).

The second kind is loans to employees, officers and shareholders, loans to associated companies, tax refunds the company is waiting for and other receivables not arising from revenue transactions. They are accounted for and valued similarly to normal trade receivables and notes receivable, but because some may arise from peculiar circumstances, companies often disclose the reasons for them and explain other circumstances about them. They are often included under the heading 'Other debtors'.

Allowance for doubtful debts

This section discusses further the allowance for doubtful debts. When a company sells to a customer on account, there will always be some risk that the customer will fail to pay. Therefore, a portion of the sales on account will be doubtful, and that portion should be deducted from revenue in determining profit for the period. This is called a bad debts expense.

The transaction analysis for the creation of an allowance for doubtful debts based on some estimate of the likely level of doubtful debts is:

- ↑ Bad debts expense
- ↑ Allowance for doubtful debts (↓ total assets).

Note that the allowance for doubtful debts is a contra asset account, which means that when we increase the allowance we are actually reducing total assets. Let's assume that the company determines – by past experience or current evidence of customers' troubles – that about \$500 of sales on account are not likely to be paid.

The journal entry to recognise the expense is:

		\$	\$
DR	Bad debts expense	500	
CR	Allowance for doubtful debts		500

The credit in this entry is again to a contra asset account, just as it is for depreciation. (However, don't forget that accumulated depreciation is in the noncurrent assets section of the balance sheet, while this one is generally in the current assets section.) The reason for not deducting the amount directly from the accounts receivable asset is that even after the usual collection time has passed, the company may still try to collect on the accounts and, therefore, doesn't want to alter the accounts receivable amount. The list of individual accounts should have the same total as that of the accounts receivable account for control reasons, so the account should not be changed just because collection is doubtful.

Eventually, after pursuing a non-paying customer for months, a company may decide to write the account off. Another journal entry is then needed. Suppose the account in question equals \$100 (it was one of the risky ones contemplated when the allowance was created above), then the transaction effect would be to reduce the allowance for doubtful debts and reduce accounts receivable, both by \$100.

The journal entry is:

		\$	\$
DR	Allowance for doubtful debts	100	
CR	Accounts receivable		100

This entry eliminates the account from the books of the company completely, but you'll notice that it does not affect expenses (and, therefore, profit); that effect was created when the allowance and the expense were recognised earlier.

Note that this write-off is handled differently from the noncurrent asset write-offs described earlier. The reason is that the allowance for doubtful debts is considered to apply to the whole list of accounts receivable, in aggregate. We don't necessarily know which specific accounts receivable were provided for. For example, the \$500 allowance for doubtful debts was probably based on an average experience; for example, 15 per cent of accounts over 60 days old will not be collected. We don't need to know which accounts will go bad in order to make such an allowance for the aggregate risk being taken.

Bad debt write-offs can also throw the system out if they are large enough. For example, in the above case, what if a customer account for \$800 had to be written off? That's more than there is in the allowance! There are methods for adjusting the allowance to take such problems into account, but this book will not include them beyond the next brief example.

It is possible to operate a company's accounting system without an allowance for doubtful accounts. Bad debts can be written off directly to accounts receivable using the so-called direct write-off method. This is used when a company has few accounts receivable or when a large account not contemplated in the allowance account suddenly goes bad. Suppose an account totalling \$1500 is to be written off directly. Then the entry would be:

	\$	\$
DR	Bad debts expense	1 500
CR	Accounts receivable	1 500

This is equivalent to allowing for it first, then writing it off using the entries shown earlier:

	\$	\$
DR	Bad debts expense	1 500
CR	Allowance for doubtful debts	1 500
DR	Allowance for doubtful debts	1 500
CR	Accounts receivable	1 500

As this example shows, the allowance can be seen as a temporary holding account for amounts the company believes will not be collected, based on past experience and an assessment of outstanding accounts. However, during the holding period, an expense has been recognised and the asset value on the balance sheet has been reduced. Using an allowance account is usually preferable to direct write-off, not only because of the internal control advantages the contra account provides, but also because the allowance provides a way to have an expense before the company gives up on collection. Therefore, it is generally more conservative in its effects on the balance sheet and the income statement.

Here is a final example of the use and effect of an allowance for doubtful debts contra account.

- Twinky Ltd sells chocolates to retail stores. At the end of 2021, it had accounts receivable of \$53 000 and an allowance for doubtful debts of \$3100. Therefore, the estimated collectable amount of the accounts receivable was \$49 900 at the end of 2021.
- During 2022, the company had credit sales of \$432 800 and collected \$417 400 from customers. Therefore, at the end of 2022, the accounts receivable stood at \$68 400 (\$53 000 + \$432 800 – \$417 400).
- At that point, the sales manager went through the list of accounts receivable and determined that accounts totalling \$1200 were unrecoverable and should be written off. Furthermore, an aggregate allowance account at the end of 2022 of \$4200 was required. The amount of the allowance was based on the percentage of the debtors that had not paid in the past. It also took into account the ageing of accounts receivable and the state of the economy.

The effect of the above is to write off bad debts by decreasing the allowance for doubtful debts and decreasing the accounts receivable, both by \$1200. The doubtful debts are allowed for by increasing the bad debts expense account and increasing the allowance for doubtful debts by \$2300. The journal entries to accomplish what is needed are shown below.

	\$	\$
DR	Allowance for doubtful debts	1 200
CR	Accounts receivable	1 200

Allow for doubtful ones:

	\$	\$
DR	Bad debts expense	2 300
CR	Allowance for doubtful debts	2 300
	Balance in allowance \$3100 – \$1200 = \$1900	
	Allowance needed at the end of 2022 = \$4200	
	Additional allowance \$4200 – \$1900 = \$2300	

The accounts receivable balance is now \$67 200 (\$68 400 – \$1200) and the contra balance is \$4200. Therefore:

- The estimated collectable value of the accounts receivable (the net balance sheet value) is \$63 000 at the end of 2022.
- Bad debts expense for 2022 is \$2300.
- The write-off of the unrecoverable debts (\$1200) cleared it out of the list of receivables, but did not affect either profit or the net balance sheet value.

The purposes of contra accounts are, like most other things in accounting, to provide useful information to the readers of financial statements and/or to assist in accounting's internal control functions. Internal control was discussed in Chapter 5.



HOW'S YOUR UNDERSTANDING?

- 11C** Topsy's accounts receivable at the end of 2022 totalled \$78 490. The allowance for doubtful debts had been \$2310, but it was decided that this would be increased by \$1560, then \$1100 in unrecoverable accounts would be written off.
- i What is the value of the receivables at the end of 2022?
 - ii What is the balance of the allowance for doubtful debts at the end of 2022?
 - iii What is the bad debts expense for 2022?

Ageing of accounts receivable¹

When determining an estimate for uncollectable accounts, companies can use two approaches: the income statement approach and the balance sheet approach. Irrespective of the approach used, the journal entry is the same (however, the amounts may – and often do – differ). As their names suggest, the income statement approach focuses on the income statement and calculates the balance of the bad debts expense account, while the balance sheet approach focuses on the balance sheet and calculates the balance of the allowance for doubtful debts account.

The income statement approach relies on the historical relationship (or an estimate of the current relationship) between credit sales and the amount of those sales unlikely to be collected. For example, past experience might suggest that bad debts are about 2 per cent of net credit sales each year. This percentage is then multiplied by net credit sales to estimate the bad debts expense. The journal entries are illustrated in the following example.

The CFO of Anna Limited tells you that her past experience suggests that 2 per cent of credit sales become uncollectable. Anna's credit sales for this year were \$640 000. Using the income statement approach, Anna Limited needs to record:

	\$	\$
DR	Bad debts expense	12 800
CR	Allowance for doubtful debts	12 800

Note that the income statement approach can easily overstate or understate the level of bad debts being recognised as economic and market conditions change. For example, an economic downturn may mean that historic percentages of credit sales not collected may be understated. Generally speaking the balance sheet approach is more forward-looking than the income statement approach.

The balance sheet approach is based on the belief that the older the account receivable, the greater the probability that the amount will not be collected. This method calculates what the balance of allowance for doubtful debts should be. Don't forget that the allowance for doubtful debts is a balance sheet account and will have an opening balance that will need to be considered in determining the amount of the journal entry. The amount of the increase required to get the allowance for doubtful debts to the desired amount will be equal to the bad debts expense for the period. Let's look at another example.

The CFO of Elsa Limited has prepared a schedule based on her past experience indicating the following percentages of accounts receivable that have been written off as bad.

Age category	Percentage
Not yet due	1
1-30 days overdue	3
31-60 days overdue	9
61-90 days overdue	16
Over 90 days overdue	25

The present balance of the allowance for doubtful debts is \$1200 CR. As at 30 June, the ageing of accounts receivable revealed the following:

Not yet due	\$73 000
1-30 days overdue	\$12 000
31-60 days overdue	\$ 5 000
61-90 days overdue	\$ 3 000
Over 90 days overdue	\$ 1 300

To determine the required adjustment to the Allowance for doubtful debts, the CFO prepares a schedule as follows:

Age category	Amount	Percentage	Estimated uncollectable
Not yet due	\$73 000	1	\$ 730
1-30 days overdue	\$12 000	3	\$ 360
31-60 days overdue	\$ 5 000	9	\$ 450
61-90 days overdue	\$ 3 000	16	\$ 480
Over 90 days overdue	<u>\$ 1 300</u>	25	<u>\$ 325</u>
Total	\$94 300		\$2 345

Don't forget that the allowance for doubtful debts has an opening balance of \$1200 CR. As the calculated balance for the allowance for doubtful debts is \$2345, an additional \$1145 will need to be added to this account using the following journal entry:

		\$	\$
DR	Bad debts expense	1 145	
CR	Allowance for doubtful debts		1 145

Note that it is not uncommon for the allowance for doubtful debts to have a debit balance during the year; this can happen when more debts have been written off than have been provided for. In the above example, if the opening balance of the allowance for doubtful debts had been \$350 DR (instead of \$1200 CR), the appropriate journal entry would have been:

	\$	\$
DR	Bad debts expense	2 695
CR	Allowance for doubtful debts	2 695

11.4 Illustrative example

Recall the Scanlon Limited comprehensive example in section 10.6. During January 2022, some additional transactions occurred:

- o Following an analysis of past experience, it was decided that allowance for doubtful debts should be \$43 680
 - p Bad debts of \$8000 were written off.
- The following steps will be carried out:
- 1 Prepare journal entries for the above transactions (Exhibit 11.2).
 - 2 Enter the opening balances in the relevant ledger accounts (accounts receivable and allowance for doubtful debts) and post the journal entries to the ledger (Exhibit 11.3).
 - 3 Prepare a revised trial balance at 31 January 2022 (Exhibit 11.4).
 - 4 Prepare a new set of closing entries (Exhibit 11.5).
 - 5 Prepare a post-closing trial balance (Exhibit 11.6).
 - 6 Prepare an income statement for the month of January 2022 and a revised balance sheet as at 31 January 2022 (Exhibits 11.7 and 11.8).

LO3
LO4

EXHIBIT 11.2

SCANLON LIMITED

JOURNAL ENTRIES

		Debit	Credit
		\$	\$
o	31 Jan.	Bad debts expense	\$43 680
		Allowance for doubtful debts	\$43 680
		<i>To record the increase in the allowance for doubtful debts</i>	
p	31 Jan.	Allowance for doubtful debts	8 000
		Accounts receivable	8 000
		<i>To record write-off of certain debtors</i>	

Before preparing the financial statements, the revenue and expense accounts are closed via the closing journal entries (Exhibit 11.5). They start with a zero balance in the next accounting period to enable profit for that period to be calculated.

After posting these journal entries, a post-closing trial balance is prepared (Exhibit 11.6). The income statement and the balance sheet are provided in Exhibits 11.7 and 11.8.

EXHIBIT 11.3

SCANLON LIMITED
SELECTED LEDGER ACCOUNTS

Accounts receivable			
Opening bal.	600 000	e	5 800 000
b	<u>6 100 000</u>	p	8 000
Closing bal.	892 000		
Allowance for doubtful debts			
p	<u>8 000</u>	Opening bal.	0
		0	<u>43 680</u>
		Closing bal.	35 680

EXHIBIT 11.4

SCANLON LTD
REVISED PRE-CLOSING TRIAL BALANCE AT 31 JANUARY 2022

	Debit	Credit
	\$	\$
Cash	1 430 000	
Accounts receivable	892 000	
Inventory	300 000	
Prepaid insurance	70 000	
Prepaid rent	60 000	
Accrued revenue	5 000	
Equipment	1 000 000	
Allowance for doubtful debts		35 680
Accumulated depreciation		210 000
Accounts payable		300 000
Revenue received in advance		0
Income tax payable		0
Loan		570 000
Share capital		420 000
Retained profits		320 000
Sales		6 800 000
Service fee revenue		100 000
Interest revenue		5 000
Cost of goods sold	3 000 000	
Salaries expense	1 200 000	
Bad debts expense	43 680	
Depreciation expense	10 000	
Insurance expense	30 000	
Rent expense	20 000	
Commission expense	600 000	
Other expenses	100 000	
	<u>8 760 680</u>	<u>8 760 680</u>

EXHIBIT 11.5**SCANLON LTD**
REVISED CLOSING JOURNAL ENTRIES

	Debit	Credit
	\$	\$
Sales	6 800 000	
Service fee revenue	100 000	
Interest revenue	5 000	
Profit and loss summary		6 905 000
Profit and loss summary	5 003 680	
Cost of goods sold		3 000 000
Salaries expense		1 200 000
Bad debts expense		43 680
Depreciation expense		10 000
Insurance expense		30 000
Rent expense		20 000
Commission expense		600 000
Other expenses		100 000
Profit and loss summary	1 901 320	
Retained profits		1 901 320

EXHIBIT 11.6**SCANLON LTD**
REVISED POST-CLOSING TRIAL BALANCE

	Debit	Credit
	\$	\$
Cash	1 430 000	
Accounts receivable	892 000	
Inventory	300 000	
Prepaid insurance	70 000	
Prepaid rent	60 000	
Accrued revenue	5 000	
Equipment	1 000 000	
Allowance for doubtful debts		35 680
Accumulated depreciation		210 000
Accounts payable		300 000
Revenue received in advance		0
Income tax payable		0
Loan		570 000
Share capital		420 000
Retained profits		<u>2 221 320</u>
	<u>3 757 000</u>	<u>3 757 000</u>

EXHIBIT 11.7**SCANLON LTD****REVISED INCOME STATEMENT FOR THE MONTH ENDING 31 JANUARY 2022**

	\$	\$
Sales:		6 800 000
Cost of goods sold		<u>3 000 000</u>
Gross profit		3 800 000
Other revenue:		
Service fee revenue	100 000	
Interest revenue	<u>5 000</u>	<u>105 000</u>
		3 905 000
Operating expenses:		
Salaries	1 200 000	
Bad debts	43 680	
Depreciation	10 000	
Insurance	30 000	
Rent	20 000	
Commission	600 000	
Other expenses	<u>100 000</u>	<u>2 003 680</u>
Net profit		1 901 320

EXHIBIT 11.8**SCANLON LTD****REVISED BALANCE SHEET AS AT 31 JANUARY 2022**

	\$	\$
Assets		
Current assets		
Cash	1 430 000	
Accounts receivable (net)	856 320	
Inventory	300 000	
Prepaid insurance	70 000	
Prepaid rent	60 000	
Accrued revenue	<u>5 000</u>	
		2 721 320
Noncurrent assets		
Equipment	1 000 000	
Accumulated depreciation	<u>210 000</u>	<u>790 000</u>
Total assets		<u>3 511 320</u>





Liabilities	
Current liabilities	
Accounts payable	300 000
Noncurrent liabilities	
Loan	<u>570 000</u>
Total liabilities	<u>870 000</u>
Net assets	2 641 320
Shareholders' equity	
Share capital	420 000
Retained profits*	<u>2 221 320</u>
	<u>2 641 320</u>

*Closing retained profits = 1 901 320 + 320 000 = 2 221 320

11.5 Trade discount and cash discount

Before we move on to the recording process using special journals and subsidiary ledgers, it is desirable to distinguish between two forms of discount that may relate to both accounts receivable and accounts payable: trade discount and *cash discount*. Each represents a reduction in the amount that a customer ultimately pays a vendor for goods or services supplied. However, the two types differ in purpose and in the way they are customarily recorded in accounting systems.

LO5

Trade discount

Trade discount, where compatible with trade practices legislation, is a means of adjusting the actual price charged to a customer from a standard 'list price'. Usually, the amount of reduction depends on the category of customer or their normal volume of business. For example, a manufacturer may sell at list price to the general public, but allow a discount of 40 per cent off list price to retailers and a discount of 55 per cent to wholesalers. Whether receiving or giving the discount, record only the net amount of the transaction. This is because the effect of a trade discount is merely to set an actual price for the transaction.

For example, Eclipse Limited has a retail price list for its products, but offers a trade discount of 20 per cent to those who purchase greater than \$10 000 worth of inventories. A \$100 purchase on credit that does not receive the trade discount would be recorded in Eclipse's books as

DR	Accounts receivable	\$100
CR	Sales revenue	\$100

A \$20 000 purchase on credit attracts a trade discount of 20 per cent, so would be recorded as follows with the cost of purchase net of the trade discount:

DR	Accounts receivable	\$16 000
CR	Sales revenue	\$16 000

Cash discount

A cash discount, in contrast, is a conditional adjustment after determining the actual selling price at which the transaction takes place. It is an incentive for prompt settlement of debts and is allowed only if there is compliance with payment terms. It is not, therefore, a change in the price of the original sales transaction, and is generally recorded as an additional transaction.

A common arrangement is to extend credit terms such as 2.5/10, n/30. This means that a discount of 2.5 per cent may be deducted from the amount due if payment is made within 10 days; otherwise, the net

amount (with no early payment discount but after adjusting for any trade discount) is payable within 30 days. Thus, if sales totalling \$400 were made to a particular customer during April on the above terms, \$10 could be deducted from the payment if settlement was made in the discount period. In the first instance, the gross selling price is recorded by both parties. If a discount is allowed, it is commonly recorded as a discount allowed expense for the seller and as a discount received revenue by the purchaser.



HOW'S YOUR UNDERSTANDING?

- 11D** Using the data above, prepare the journal entries to record the \$400 sale; and the cash transaction for \$390 and a settlement discount of \$10 in:
- i the seller's accounts
 - ii the purchaser's accounts.

We will further demonstrate the recording of these transactions in the cash receipts and cash payments journals, respectively, in the next section.

11.6 Detailed recording using special journals, subsidiary ledgers and control accounts²

LO6 This section is most relevant to students who require a more detailed knowledge of recording systems.

Before going on, let's remind ourselves of the accounting cycle, as summarised in Figure 11.1. Up until this point, we have assumed that the economic events captured in the accounting system are initially recorded in a general journal, then summarised through posting to the general ledger. Such a system is fine for a business with a small set of transactions. However, if you think back on the sorts of transactions you have already recorded (and imagine a more complex business), you will have noticed that many of the transactions have common elements; for example, many transactions involve cash collections or payments. Given this feature, special systems can be put in place that allow a more efficient recording process for common transactions. These systems support and feed into the recording, classifying and summarising processes shown in Figure 11.1.

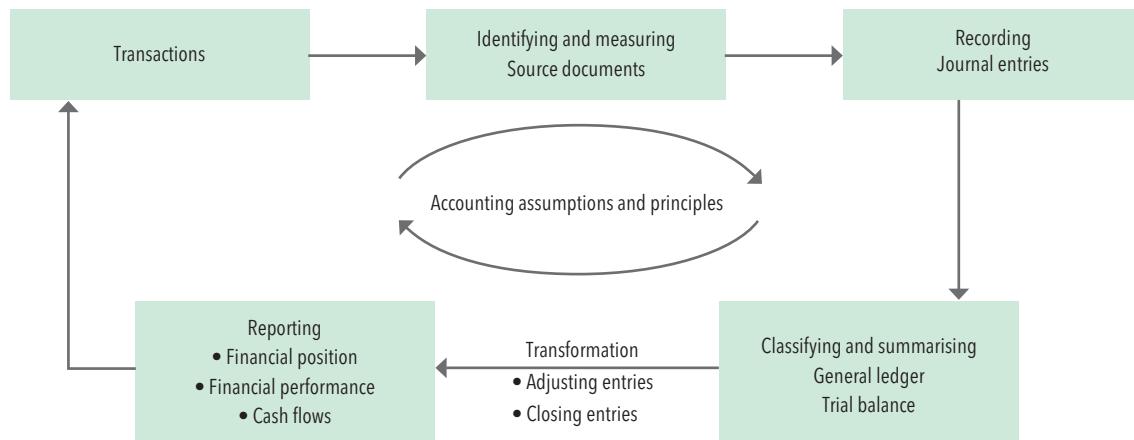


FIGURE 11.1 The accounting cycle

Rather than all the accounting information being captured in one journal and posted to one ledger, a system of special journals and subsidiary ledgers can be used to streamline the recording, storage and categorisation

of data. Special journals are designed to allow the easy recording of the most common transactions undertaken by a business, while subsidiary ledgers represent a detailed analysis of the information that is eventually transferred to a general ledger account.

In what follows, special journals and subsidiary ledgers are described in a manual framework to help you understand the relational nature of the databases used in a more sophisticated accounting system. Similar 'structures' and processes are used in computerised systems. While many computerised accounting systems do not require the use of special journals, the journals can be produced by the system to provide summaries of transactions, if required.

Let's briefly look at one example of how a common transaction for some businesses – credit sales – can be recorded in a system that uses special journals and subsidiary ledgers. Figure 11.2 shows the receipt of an order from a customer who is allowed to buy from a business on credit. When the customer receives the product or service, a sales invoice is issued to the customer showing the product or service he or she has bought, the amount owed and when it needs to be paid by. The sales invoice becomes the source document that is used to record information in the accounting system. In this case, the business transaction is recorded in a special journal called a sales journal, because it is used to record all information about credit sales. At the same time, the customer's account is updated in the subsidiary ledger to show that he or she owes money to the business.

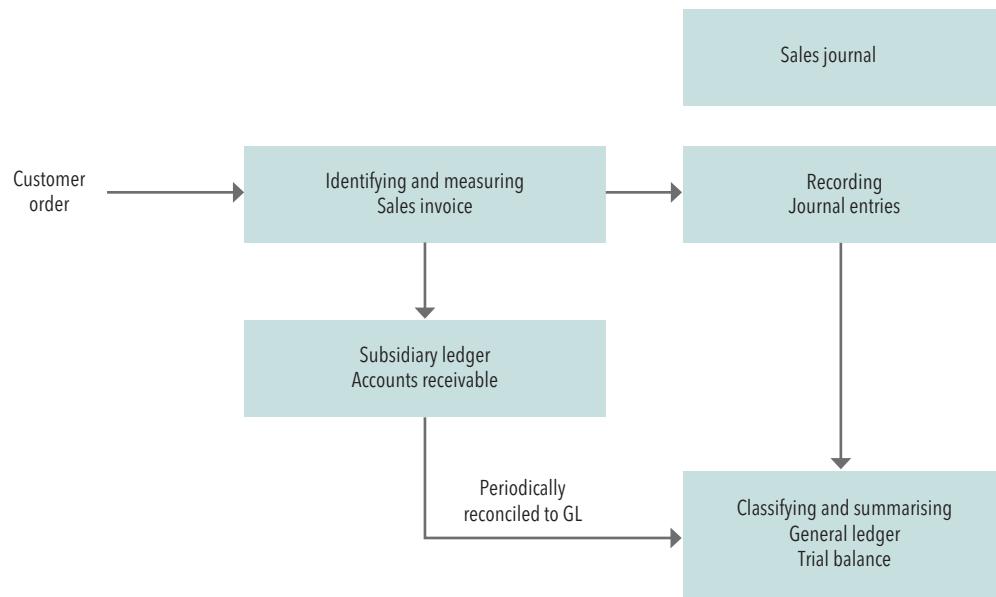


FIGURE 11.2 Flow of information in the accounting system using special journals and subsidiary ledgers

Periodically, information from the business' journals (including the sales journal) is transferred to the general ledger. This information is a summary of the more detailed records contained in the special journals and subsidiary ledgers.

Only a summary of all the information needs to appear in the main accounting system if there are subsystems that contain more detailed records. In Figure 11.2, a general ledger account called accounts receivable (also known as debtors) is supported by some form of detailed record showing how much each debtor owes the company and when he or she is expected to pay. This is the information contained in the subsidiary ledger. It is not much use knowing that you are owed \$900 000 from debtors in total without knowing exactly who owes you what amounts and when you expect them to be received! For example, the \$900 000 in the general ledger may be made up of the following three accounts in the subsidiary debtors' ledger: M. Andrews, \$100 000; T. Blake, \$300 000; and A. Crawford, \$500 000. Whenever one of these

customers buys from the business on credit, that transaction is recorded in the sales journal and the information is used to update the subsidiary ledger.

Refer to the information flow diagrams at Figures 11.1 and 11.2 as you learn more about special journals and subsidiary ledgers.

11.7 Prime entry records: special journals

LO6 The most common transactions undertaken by a business can be recorded in special journals. Typically, special journals are established to record the following transactions:

Special journal	Transactions recorded
Sales journal	Credit sales of inventory
Purchases journal	Credit purchases of inventory
Cash receipts journal	All cash inflows (including cash sales)
Cash payments journal	All cash outflows (including cash purchases)

In a special journal, each entry represents a transaction that belongs to the same class as others in the same journal. These special journals are used in addition to a general journal. Transactions that are not recorded in a special journal are recorded in a general journal (e.g. depreciation, adjustments for prepayments and other accruals).

Apart from recording efficiency, other advantages of special journals are:

- Amounts can be posted from special journals to the general ledger as totals rather than as individual journal entries.
- More than one user can update the accounting system, because it consists of a number of related subsystems. For example, the general ledger, the debtors' subsidiary ledger and the inventory subsidiary ledger could be updated by different individuals.
- The common nature of transactions eliminates the need for narrations.
- Information such as invoice or receipt number may be recorded in special columns provided for the purpose.
- Additional information can be recorded in a particular journal for convenience because it is available from the source document evidencing the transaction. For example, discount expense is generally recorded in the cash receipts journal because it is obtained from the duplicate receipt (which also shows the net amount of cash received).

11.8 Subsidiary ledgers and control accounts

LO6 The most common way of accommodating the need for detailed records in the accounting system, without grossly expanding the number of separate accounts in the general ledger, is to use subsidiary ledgers and control accounts. As previously mentioned, a subsidiary ledger is a set of ledger accounts that collectively represents a detailed analysis of one general ledger account classification. The relevant ledger account in the general ledger is known as a control account. The accuracy of the detailed accounts in the subsidiary ledger can be periodically checked against the aggregate data and balance contained in the control account.

Subsidiary ledgers do not form part of the general ledger. They are separate ledgers that show more detail about a general ledger account (such as debtors). Examples of general ledger accounts that have subsidiary ledgers are:

- *debtors/accounts receivable*: a separate account for each debtor
- *creditors/accounts payable*: a separate account for each creditor

- *property, plant and equipment*: separate records of each piece of property, plant and equipment – often called an asset register
- *raw materials inventory*: separate records of each type of raw material held
- *finished goods inventory*: separate records of each type of finished good held.

In each of these examples, the same principle applies. Every entry made to an account in the subsidiary ledger is contained within an aggregate amount in a general ledger control account. It follows that the total of all debit entries made to individual accounts in the subsidiary ledger must be equal to the debits made to the control account. Similarly, all credit entries made will be the same, in aggregate, between the subsidiary ledger and the control account. From this it follows that, at any time, when all required entries have been made in both records, the total of the balance appearing in the accounts in the subsidiary ledger should equal the balance appearing in the control account in the general ledger. If these amounts do not agree, it signals errors in one or both records.

Apart from providing a check on accuracy, subsidiary ledgers enable any desired amount of detail to be maintained to explain the composition of a selected general ledger account, without overloading that ledger. In some cases, subsidiary ledger accounts can include statistical data and written comments as well as dollar values. For example, the subsidiary ledger for equipment will include information beyond original cost and accumulated depreciation. It is likely to also include date of purchase, location in the organisation (e.g. at Burwood factory), an identification number (which is also placed on the equipment for internal control purposes) and, possibly, details of maintenance, warranty and so on.

11.9 Operation of special journals and subsidiary ledgers

To illustrate the operation of accounting systems using special journals and subsidiary ledgers, we will examine their operation for the following transactions: **LO7**

- credit sales
- credit purchases
- cash receipts
- cash payments.

Credit sales

Exhibit 11.9 shows an extract from a sales journal in a business that uses the perpetual method to record inventory:

EXHIBIT 11.9		SALES JOURNAL				
		EXAMPLE				
Date 2022	Invoice no.	Sales journal			Page S1	
		Customer	Post ref.	COGS	Accounts receivable	
July 5	0001	M. Andrews	✓	50 000	100 000	
5	0002	T. Blake	✓	150 000	300 000	
20	0003	A. Crawford	✓	<u>250 000</u>	<u>500 000</u>	
				<u>450 000</u>	<u>900 000</u>	
				(104/400)	(102/350)	

Had each of the credit sales been recorded in a general journal, each would have appeared as:

	\$	\$
DR Accounts receivable	XX	
CR Sales revenue		XX
DR COGS	YY	
CR Inventory		YY

The purpose of special journals is to eliminate the need for such detailed recording in a general journal and the general ledger. Only the totals for a suitable period (typically a month in a manual system) are posted to the general ledger. The general ledger account into which the total is posted is called a control account because aggregate amounts are posted to it. These totals are referenced in the general ledger account to the source of the information; in this case, the sales journal. If the sales journal in our example represents all the credit sales for the period, then only the total \$900 000 would be debited to accounts receivable (account number 102) and credited to sales revenue (account 350) and \$450 000 debited to COGS (account 104) and credited to inventory (account 400). The amounts are posted directly from the sales journal; there is no need to record the information again in a general journal.

A subsidiary ledger account might be established for each customer who buys on credit. The individual accounts in the debtors' ledger can be kept up to date by posting each line of the sales journal to the appropriate account in the subsidiary ledger. For example, the first entry in the sales journal shown earlier is recorded in the subsidiary ledger as a debit to the account of M. Andrews, the second to T. Blake and the third to A. Crawford. Part of this process is illustrated at Exhibit 11.10: note that the accounts for Blake and Crawford are not shown, but would be updated in a similar manner. The use of the posting reference S1 in the ledger accounts indicates that the information in these accounts comes from page S1 of the sales journal. The tick in the posting reference column of the sales journal indicates that the amount has been posted to the subsidiary ledger.

At the end of the period, the total of the subsidiary ledgers can be checked against the balance of the accounts receivable control account. That is, if we add up the balance in the accounts for Andrews, Blake and Crawford, it should agree with the balance of the accounts receivable control account.

Credit purchases

In its simplest form, the purchases journal is only used for recording the acquisition of goods, on credit, that are intended for resale. The relevant source document is the purchase invoice from the supplier, which is matched against the delivery docket and a copy of the official purchase order to ensure that the goods have been delivered in a satisfactory condition and that the agreed price has been charged.

Assume that the following credit purchases of furniture for resale were made during July 2022:

2022		\$
July 2	P. Renton	1 400
4	J. Quincy	320
18	R. Lemon	3 500

The purchases journal is illustrated in Exhibit 11.11.

In this case, note that P. Renton and J. Quincy expect payment within 30 days (their payment terms are n/30 and no discount is available for early payment). R. Lemon allows a discount of 2 per cent if payment is received within 10 days; otherwise, the net amount is expected within 30 days of purchase. Because we're not certain that payment will be made within the discount period, the full amount owing is recorded in the journal, not 98 per cent of \$3500. If we do qualify for the discount, our obligation of \$3500 is satisfied and the discount received (\$70) adjusts the amount of cash eventually paid to R. Lemon (\$3430).

EXHIBIT 11.10

CREDIT SALES

RECORDING CREDIT SALES IN A SALES JOURNAL AND POSTING TO SUBSIDIARY
AND GENERAL LEDGERS

Date 2022	Invoice no.	Sales journal			
		Customers	Post ref.	Cost of goods sold	Accounts receivable
July 5	0001	M. Andrews	✓	50 000	100 000
5	0002	T. Blake	✓	150 000	300 000
20	0003	A. Crawford	✓	250 000	500 000
				450 000	900 000
				(104/400)	(102/350)

Accounts receivable subsidiary ledger M. Andrews				
Date	Post ref.	Debit	Credit	Balance
July 5	S1	100 000		100 000 DR

General ledger Account receivable control				
Date	Post ref.	Debit	Credit	102 Balance
July 31	S1	900 000		900 000 DR

Sales				
Date	Post ref.	Debit	Credit	350 Balance
July 31	S1		900 000	900 000 CR

Cost of goods sold				
Date	Post ref.	Debit	Credit	104 Balance
July 31	S1	450 000		450 000 DR

Inventory control				
Date	Post ref.	Debit	Credit	400 Balance
		600 000		600 000 DR
July 31	S1		450 000	150 000 DR

As with the sales journal, subsidiary ledgers are updated each day for each creditor and for each item of inventory. In Exhibit 11.11, only the account of P. Renton is shown; a similar process would be followed to update the accounts of J. Quincy and R. Lemon in the subsidiary ledger. The inventory subsidiary ledger is not shown.

At the end of the period, the inventory control account in the general ledger is debited with the total of \$5220 and the creditors' account is correspondingly credited. Alternative treatments for the recording of inventories are discussed in Chapter 12.

EXHIBIT 11.11

CREDIT PURCHASES

RECORDING CREDIT PURCHASES IN A PURCHASES JOURNAL AND POSTING TO SUBSIDIARY
AND GENERAL LEDGERS

Purchases journal				
Date 2022	Suppliers	Post ref.	Terms	Accounts payable
July 2	P. Renton	✓	n/30	1 400
4	J. Quincy	✓	n/30	320
18	R. Lemon	✓	2/10, n/30	3 500
				<u>5 220</u>
				(104/200)

Post daily

Post monthly

Accounts payable subsidiary ledger				
Date	Post ref.	P. Renton	Debit	Credit
July 2	P1		1 400	1 400 CR
General ledger				
Date	Post ref.	Accounts payable control	Debit	Credit
July 31	P1		5 220	5 220 CR
Inventory control				
Date	Post ref.	Debit	Credit	Balance
July 31	P1	5 220		5 220 DR

Credit transactions involving the acquisition of fixed assets or items to be charged to expense accounts, such as repairs, maintenance, printing and stationery, are often recorded in a general journal. However, the above purchases journal can easily be expanded to include columns for other items, if they occur frequently.

Cash receipts

The source document providing evidence of a cash receipt is usually a duplicate of the receipt given to a customer to acknowledge payment. Alternatively, a list of cheques received or a direct deposit recorded on a bank account statement can serve as the source document.

A cash receipts journal is designed to meet the specific needs of an organisation, so analysis columns are created for the types of cash inflow that occur most frequently. In most businesses, these are likely to include payments received from debtors and, possibly, cash sales. In addition to specific analysis columns, there is also a need for a sundry or miscellaneous column for cash receipts not otherwise identified by a specific column that represents a particular general ledger account. Examples of sundry cash receipts include proceeds from the sale of fixed assets, refunds by creditors and new capital or mortgage funding. If a cash discount is allowed to debtors, a discount expense column is typically included in the cash receipts journal.

Exhibit 11.12 illustrates the process of recording and posting information about cash receipts. In contrast to the sales and purchases journals, separate columns are used to represent the debit and credit sides of transactions.

EXHIBIT 11.12

CASH RECEIPTS

RECORDING CASH RECEIPTS IN A CASH RECEIPTS JOURNAL AND POSTING TO SUBSIDIARY AND GENERAL LEDGERS

Cash receipts journal							
Date 2022	Description	Post ref.	Cash at bank Debit	Discount allowed Debit	Cash sales Credit	Accounts receivable Credit	
July 3	Sales	✓	50 000		50 000		
14	M. Andrews	✓	100 000			100 000	
28	A. Crawford	✓	490 000 640 000 (101)	10 000 10 000 (478)	— 50 000 (350)	500 000 600 000 (102)	

Post monthly

Post daily

Accounts receivable subsidiary ledger

M. Andrews				
Date	Post ref.	Debit	Credit	Balance
July 5	S1	100 000		100 000 DR
July 14	CR1		100 000	—

General ledger

Cash at bank				
Date	Post ref.	Debit	Credit	Balance
July 31	CR1	640 000		640 000 DR

Sales				
Date	Post ref.	Debit	Credit	Balance
July 31	S1		900 000	900 000 CR
July 31	CR1		50 000	950 000 CR

Discount allowed

478				
Date	Post ref.	Debit	Credit	Balance
July 31	CR1	10 000		10 000 DR

Accounts receivable control

102				
Date	Post ref.	Debit	Credit	Balance
July 31	S1	900 000		900 000 DR
	CR1		600 000	300 000 DR

The 3 July entry represents a cash sale. In this case, the debit and credit amounts are equal. The next two entries represent the receipt of amounts owing from customers. These amounts were previously recorded in the sales journal. Assuming that we offer discount terms of 2/10, n/30, A. Crawford qualifies for a discount and only pays \$490 000 of the \$500 000 owing. The balance is a financial expense of the business known as discount allowed.

No sundry accounts were affected by cash receipts during the period. If they had been, each item would be individually posted to the relevant general ledger account. The column total can't be posted because the amount represents the impact of transactions on a number of general ledger accounts.

In addition to the postings to the general ledger, each item appearing in the debtors' column is posted as a credit to the account of the particular debtor in the debtors' subsidiary ledger. Note that the account for A. Crawford is not shown in the Exhibit's subsidiary ledger.

Cash payments

The source document for cash payments could be a direct electronic funds transfer receipt from a bank or, for companies with a cheque account, a duplicate of a cheque or a cheque butt. There is usually supporting evidence such as statements and invoices from creditors, a receipt issued by the recipient or a payroll analysis certified as correct by a responsible staff member. The bank statement provides evidence of the amount of interest charged on any overdraft, together with information about other bank charges and fees.

In its simplest form, the cash payments journal comprises one column which lists the amounts of the cheques drawn by the business against its bank account. However, to minimise postings and to provide an analysis of payments, separate columns may be provided to record entries affecting those ledger accounts frequently involved. A sundry or miscellaneous column is necessary for those amounts which are to be posted to accounts for which there is no specific analysis column.

In the cash payments journal illustrated in Exhibit 11.13, the amount of each payment is recorded in the cash at bank column and then entered, according to the nature of the payment, either in one of the analysis columns or divided over more than one column. For payments to creditors, the amount paid is entered into the bank column and any discount received is entered in the discount received column. The total of these two amounts is then entered in the creditors' (accounts payable) column: this is the total amount by which accounts payable has decreased. The individual names of creditors are also included so the entry can be used to update the creditors' subsidiary ledger. Thus, when the journal is totalled at the end of each period, the aggregate of the bank and discount revenue columns should equal the sum of the totals of all the analysis columns, including the sundry column. This reflects the double entry analysis of cash payments, which, in all cases, involves a credit to bank or discount revenue and a corresponding debit to some other account.

In this case, postings to the general ledger occur as follows:

- 1 Debit each account for which there is a specific analysis column with the total of that column.
- 2 Debit each account for which there is an individual entry in the sundry column with the amount of that entry. Do not post the total of the sundry column.
- 3 Credit bank with the total of the bank column.
- 4 Credit the discount received account for the amount of the discount received.

It should be noted that it makes no difference in the double-entry system whether bank is an asset or a liability (in the case of the account being in overdraft). In either case, a cash payment is a credit because it either reduces the bank asset or increases the bank overdraft liability.

In general, it is desirable in all books of prime entry (journals) to provide a reference to the source document for each entry. In the cash payments journal, this is usually done by recording the cheque number associated with each payment. This also facilitates preparation of bank reconciliation statements (covered in sections 11.11 and 11.12 of this chapter).

In addition to the postings to the general ledger made at the end of the period, each individual item in the accounts payable column will be posted as a debit to the relevant individual creditor's account in the creditors' ledger on a daily basis.

EXHIBIT 11.13

CASH PAYMENTS

RECORDING CASH PAYMENTS IN A CASH PAYMENTS JOURNAL AND POSTING TO SUBSIDIARY AND GENERAL LEDGERS

Date 2022	Description	Post ref.	Cheque no.	Cash payments journal		Salaries	Sundries	Accounts payable Debit
				Cash at bank Credit	Discount received Credit			
July 3	Salaries	✓	501	2 500		2 500		
14	Telephone	424	502	270			270	
28	R. Lemon	✓	503	3 430	70			3 500
				6 200	70	2 500	270	3 500
				(101)	(351)	(420)	(-)	(200)

Post monthly

Accounts payable subsidiary ledger				
Date	Post ref.	R. Lemon Debit	Credit	Balance
July 5	P1		3 500	3 500 CR
July 28	CP1	3 500		—

Post daily

General ledger				
Date	Post ref.	Cash at bank Debit	Credit	101 Balance
July 31	CR1	640 000		640 000 DR
July 31	CP1		6 200	633 800 DR

Accounts payable control				
Date	Post ref.	Debit	Credit	200 Balance
July 31	P1		5 220	5 220 CR
		3 500		1 720 CR

Discount received				
Date	Post ref.	Debit	Credit	351 Balance
July 31	CP1		70	70 CR

Salaries expense				
Date	Post ref.	Debit	Credit	420 Balance
July 31	CP1	2 500		2 500 DR

Telephone expense				
Date	Post ref.	Debit	Credit	424 Balance
July 31	CP1	270		270 DR

11.10 Role of general journal and general ledger

LO6 Most of an organisation's transactions are recorded in special journals. There is, however, still a role for a general journal. A general journal is used to record a number of important transactions, such as:

- sales and purchase returns
- credit transactions other than those related to inventory, such as the purchase of equipment
- adjusting entries
- closing entries.

As we have already seen, each entry in a general journal is individually posted to the appropriate account in the general ledger. At the end of a period, all financial information will be posted to the general ledger, either as an individual entry sourced from a general journal (or from a sundry column in a special journal) or in aggregate form from the columns of the various special journals.

Once all the financial information has been posted to the general ledger, the reporting process represented in Figure 11.1 can begin and the accounting cycle can start again.

11.11 Bank reconciliations³

LO8 Many companies have voluminous amounts of cash receipts and disbursements during a given accounting period. Because of the high frequency of transactions and the potential for error, the accuracy of the cash balance in the general ledger should be examined periodically. This process, called a bank reconciliation, is based on a comparison of the cash account and a document called a bank statement, which is received from the bank, usually monthly. Accounting software can help one complete a bank reconciliation; however, it is important to understand the underlying process.

Bank statements versus cash accounts

Businesses and individuals receive monthly bank statements for every bank account they maintain. An example of a bank statement appears in Exhibit 11.14. Bank statements summarise the activity in a bank account and report the ending monthly balance. It is important to understand that although the cash account of a depositor (such as Johnson Manufacturing) is an asset, the depositor's account is carried on the bank's records as a *liability*. Consequently, debits and other debits by the bank reduce Johnson's account, while deposits and other credits increase the account. A bank feed can be linked to accounting software to display the transaction data.

At the end of a month, the bank statement cash balance and the company's cash records will normally not agree. A major reason for this discrepancy is the timing differences associated with the use of a bank account. Timing differences result in an item being recorded on the depositor's books or the bank's books, but not both, in a given accounting period. Common examples of timing differences include the following:

- Items reflected on the company's records but not yet reported on the bank statement, such as:
 - deposits in transit: receipts entered in a firm's accounts but not yet processed by the bank (e.g. a company could record certain cheques on the last day of the month, but does not deposit them at the bank until the next day)
 - outstanding cheques and payments: payments which have been processed or cheques written by a business but not yet presented to the bank. Outstanding payments and cheques are determined by comparing those reported on the bank statement against those recorded in the company's records.
- Items reported on the bank statement but not yet entered in the company's records, such as:
 - dishonoured customer payments or non-sufficient funds (NSF) cheques: customer payments or cheques deposited but returned because of lack of funds; these are reported on the bank statement via a debit memo notation, because the bank has reduced the depositor's account
 - bank charges

EXHIBIT 11.14

SYDNEY CITY BANK, GEORGE STREET BRANCH

BANK STATEMENT

Johnson Manufacturing Corporation 1 Anzac Parade Peakhurst NSW 2210		Account no. 0008564201	Page no. 1
		Statement period 31/7/22-31/8/22	
Date	Particulars	Debit \$	Credit \$
31/7	Balance		19 507.50 CR
01/8	Deposit	10 031.87	29 539.37 CR
04/8	Cheque no. 630	6 791.45	22 747.92 CR
09/8	Cheque no. 628	675.18	22 072.74 CR
09/8	Cheque no. 629	375.00	21 697.74 CR
10/8	Cheque no. 631	540.20	21 157.54 CR
12/8	Direct deposit from Company A	4 925.75	26 083.29 CR
12/8	Deposit	5 242.70	31 325.99 CR
15/8	Cheque no. 633	728.40	30 597.59 CR
16/8	Cheque no. 632	790.03	29 807.56 CR
18/8	Direct deposit from Company B	4 600.80	34 408.36 CR
19/8	Cheque no. 634	3 574.24	30 834.12 CR
22/8	Cheque no. 635	13 426.40	17 407.72 CR
22/8	Direct debit to Insurance Ltd	10 000.00	7 407.72 CR
25/8	Deposit	9 312.28	16 720.00 CR
26/8	Cheque no. 637	2 470.80	14 249.20 CR
26/8	Cheque no. 639	740.15	13 509.05 CR
29/8	Deposit	7 990.10	21 499.15 CR
31/8	Bank charges	147.90	21 351.25 CR
31/8	Interest	75.00	21 426.25 CR
		Total debits <u>40 259.75</u>	Total credits <u>42 178.50</u>

- electronic funds transfer transactions, in particular receipts from customers may not have been recorded in the company's records
- interest earned on the account.

In addition to timing differences, errors may cause a discrepancy between the bank statement balance and company accounting records. Errors can be made by either the company or the bank and must be corrected as quickly as possible.

For many companies there has been an increase in the use of direct debits (electronic payments direct from a company's bank account to another individual or company's bank account) or direct credits (receipt direct from another individual or a company to a company's bank account). The use of direct transfers from one account to another eliminates some of the above difficulties (in relation to timing), but care should be taken to ensure that these transactions are recorded in the company's records, as well as being alert to detecting errors caused by transfers made to or from incorrect accounts.

The reconciliation process

Several different types of reconciliations can be prepared. One commonly encountered form involves determining the amount of cash a company has control over and the reports on its end-of-period balance sheet. An example appears in Exhibit 11.15.

EXHIBIT 11.15		SYDNEY CITY BANK
BANK RECONCILIATION		
		\$
Ending balance per bank statement		xxx
Add:	Receipts/increases entered on company records but not reported on the bank statement	xxx
Deduct:	Disbursements/decreases entered on company records but not reported on the bank statement	xxx
Adjusted cash balance: bank		xxx
Ending balance per company records		xxx
Add:	Receipts/increases reported on the bank statement but not entered on company records	xxx
Deduct:	Disbursements/decreases reported on the bank statement but not entered on company records	xxx
Adjusted cash balance: company records		xxx

These amounts must agree

The exhibit demonstrates the purpose of a reconciliation; that is, we strive to isolate specific items that cause a difference between the depositor's records and the bank statement balance. The accountant considers these items and adjusts one cash balance or the other to bring both balances into agreement.

If the balances do not agree and the reconciling items are deemed correct, there is an excellent chance that a record-keeping error has been made. Errors must be identified, then added or subtracted on the reconciliation to arrive at the corrected cash balance. For example, if a cheque written by a firm for \$94.50 was incorrectly entered into the accounting records as \$49.50, the accounting records would be overstated by \$45.00 ($\$94.50 - \49.50). This amount (\$45) should therefore be deducted from the ending cash balance per company records, since the company's books are in error. The bank, of course, will deduct the correct amount of the transaction (\$94.50) when the cheque is received for payment. The reconciliation, then, not only highlights timing differences but also identifies errors made by either the bank or the depositor.

Most bank reconciliations contain adjustments to both the ending cash balance per bank statement and the ending balance per company records. After the reconciliation is completed, *general journal entries must be prepared for adjustments made to company records*. These adjustments are necessary to update the cash account (and others) in relation to the correction of company errors and information already processed by the bank. It is important to note that no journal entries are needed for adjustments made to the ending bank statement balance. These adjustments reflect items that have already been recorded in a company's accounts; thus, no further updating is necessary.

Here is an example. Exhibit 11.16 contains summarised data and the bank reconciliation of Johnson Manufacturing Corporation for the month ended 31 August 2022. It will help if you refer to Johnson's bank statement (in Exhibit 11.14), which serves as the source for much of the information presented.

The reconciliation reveals one increase to the bank statement cash balance: the deposit that was recorded prior to month-end but awaiting deposit. Johnson had control over each of these items as of 31 August, and they should be included in the ending cash balance. The decrease in the bank statement cash balance was caused by cheques Johnson had written that had not yet been cleared by the bank. The bank will receive these cheques shortly, and the funds will then be deducted from the company's account.

EXHIBIT 11.16**JOHNSON MANUFACTURING CORPORATION****DATA AND BANK RECONCILIATION****Data**

- a 31 August cash balance per bank statement, \$21 426.25.
- b 31 August cash balance per company records, \$17 473.35.
- c Bank charges of \$147.90
- d A direct deposit from Company B for \$4600.80 was received but has not been recorded in the company's records.
- e A deposit for \$1850.00 recorded by the company on 31 August did not appear on the bank statement.
- f Interest of \$75.00 received.
- g The following cheques written by Johnson were outstanding at the end of the month:

No. 638	\$410.00
No. 640	\$320.00
No. 641	\$240.00
No. 642	\$323.00
- h Cheque no. 628, written for \$675.18, was erroneously entered as \$657.18 in the company's books. The cheque involved a payment to a supplier on account.

Bank reconciliation**31 August 2022**

	\$	\$
Ending balance per bank statement	21 426.25 CR	
Add: Outstanding deposit		1 850.00
		23 276.25
Deduct: Outstanding cheques		
No. 638	410.00	
No. 640	320.00	
No. 641	240.00	
No. 642	323.00	1 293.00
Adjusted cash balance: bank statement		21 983.25 CR
Ending balance per company records		17 473.35 DR
Add: Direct deposit not previously recorded	4 600.80	
Interest	75.00	4 675.80
		22 149.15
Deduct: Bank charges	147.90	
Error in recording cheque no. 628	18.00	165.90
Adjusted cash balance: company record		21 983.25

The increase to company records arose from the direct deposit received but not recorded and interest, both of which appear on the bank statement. These funds have now been deposited in Johnson's bank account and must therefore be entered in the company's records. The deduction for the bank charges is on the bank statement but not as yet in the company's ledger. The error in recording cheque no. 628 was discovered during the reconciliation. Because the bank deducted the correct amount of the cheque, an adjustment to Johnson's records is required to bring them into agreement with those of the bank.

Note that, as the company is owed money, it has an asset; therefore, it will show up as a debit balance in the bank reconciliation (\$21 983.25 DR). However, as the bank owes money, it has a liability; therefore, the amount will be displayed as a credit balance in the bank records (\$21 983.25 CR).

On completion of the reconciliation, journal entries are needed for all the items that affect company records. The following entries will be made on 31 August.

	DR	CR
	\$	\$
Cash	4 675.80	
Accounts receivable - Company B		4 600.80
Interest revenue		75.00
Bank charges	147.90	
Cash		147.90
Accounts payable	18.00	
Cash		18.00

The first journal entry reflects the increase in cash caused by the direct credit and interest. The second entry shows bank charges for \$147.90. Finally, the error in recording cheque no. 628 was found to involve a payment on account; thus, accounts payable must be debited. These entries allow Johnson's records to reflect the true amount of cash held by the firm.



HOW'S YOUR UNDERSTANDING?

11E On 30 June, the bank account for Holmes Traders showed a debit balance of \$13 418 and the bank statement showed a credit balance of \$20 208. A comparison of the two sets of records disclosed:

- that there was a bank charge of \$10
- that a direct credit from Emma and Tim Limited had been received for \$1000 but was not included in the company's records
- that the date of a deposit of \$2450 was shown by Holmes Traders as 30 June, whereas the bank did not record the deposit until 1 July
- unpresented cheques totalling \$8250.

Prepare a bank reconciliation statement at 30 June.

11.12 Performing a bank reconciliation from information in cash journals

LO9 In section 11.11, you were given lists of outstanding deposits, outstanding cheques and errors in bank charges, etc. In this section we will show you how to find this information by comparing the content of the bank statement and the organisation's cash records (cash receipts journal and cash payments journal). Note that a cash receipts journal (CRJ) lists all payments received, and a cash payments journal (CPJ) records all cheques issued in cheque number order and direct payments made in payment number order.

The following steps should be undertaken to complete the bank reconciliation statement.⁴

Step 1

- Go through last month's bank reconciliation statement, ticking off any amounts that were outstanding last month (such as unpresented cheques and outstanding deposits) and that appear on this month's bank statement.

- Go through the bank statement and tick off items appearing both there and in the cash journals (tick them off in both places).
- Errors: if you see any cheques or deposits that are recorded incorrectly by the business or the bank (e.g. a transposition error), deal with these as follows:
 - If the bank has made a mistake, inform the bank of its error and list it in the bank reconciliation.
 - If the business has made a mistake, correct the relevant cash journal (CPJ or CRJ).

Step 2

- Go through the bank statements to see what amounts remain unticked. These unticked amounts may be dishonoured cheques, interest or cash transactions made directly through the bank and not yet recorded in the books. These should be entered into the appropriate CRJ or CPJ. After entering them, tick them in the journals and the bank statements.
- Go through the cash journals to see if there are any unticked amounts in the CRJ and CPJ. These will represent outstanding deposits and outstanding (unpresented) cheques, respectively.

Step 3

- If the CRJ and the CPJ have not yet been totalled and posted to the bank ledger account, this should be done.

Step 4

- Prepare a bank reconciliation statement in a form similar to that shown in Exhibit 11.16.

Illustrative example

The bank reconciliation prepared by Bergen Ltd, as at 31 March 2022, showed a deposit in transit of \$610 and the following outstanding cheques: no. 204 for \$615 and no. 221 for \$90. The balance – as per the cash at bank account in the general ledger of Bergen Ltd at 31 March 2022 – was \$4667 DR.

Bank statement					
Date	Particulars		Debit	Credit	Balance
			\$	\$	\$
2022	Balance				4 762 CR
April	1	DC – Martin		610	5 372 CR
	2	DC – Hughes		115	5 487 CR
	3	222	56		5 431 CR
	3	DD – Car lease	300		5 131 CR
	3	Deposit		630	5 761 CR
	6	204	615		5 146 CR
	6	Deposit		220	5 366 CR
	10	DC – Khalifa		105	5 471 CR
	10	224	196		5 275 CR
	13	Deposit		832	6 107 CR
	15	DC – Jane		50	6 157 CR
	17	Deposit		107	6 264 CR
	17	226	852		5 412 CR
	17	NSF	312		5 100 CR

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<<	20	225	846	4 254 CR
	22	DC - Michael	56	4 310 CR
	24	SC	24	4 286 CR
	27	227	100	4 186 CR
	29	228	409	3 777 CR
		NSF non-sufficient funds/dishonoured cheque		SC service charge
		DC Direct credit		DD Direct debit

From the cash receipts journal		From the cash payments journal		
Date	Amount	Date	Cheque no.	Amount
April	\$	April		\$
2	115	3	222	56
3	630	3	223	124
6	220	10	224	169
10	105	14	225	846
13	832	17	226	852
17	107	23	227	100
21	56	28	228	409
30	<u>403</u>	29	229	900
Subtotal	<u>2 468</u>	29	230	<u>556</u>
		Subtotal		<u>4 012</u>

Notice: For any errors assume the bank's records are correct.

- Take the above information and tick off, on the bank statement, any outstanding cheques or outstanding deposits from the March bank reconciliation. Note that the \$610 outstanding deposit is included on the bank statement on 1 April, and the unpresented cheque no. 221 is still unpresented.
- Compare the amounts on the bank statement with those in the cash journal. The unticked amounts on the bank statements refer to a direct credit from Jane of \$50, a dishonoured cheque for \$312 (i.e. the person who sent the cheque to Bergen Ltd did not have sufficient funds in the account), bank fees of \$24 and direct debit for a car lease of \$300. In addition, there is an error of \$27 for cheque no. 224 to Energy Australia.

As a result of the above, the cash journals would be adjusted as follows:

Cash receipts journals	
Subtotal	2 468
Direct credit - Jane	50
NSF/Dishonoured cheque	<u>-312</u>
	<u>\$2 206</u>

Cash payments journal	
Subtotal	4 012
Error no. 224	27
Bank charges	24
Direct debit - Car lease	<u>300</u>
	<u>\$4 363</u>

These amounts would then be posted to the cash at bank general ledger account.

Cash at bank				
1 April	Opening bal.	4 667	Payments	4 363
	Receipts	<u>2 206</u>		
		<u>6 873</u>		
30 April	Closing bal.	\$2 510		

- The unticked amounts in the cash receipts journal and the cash payments journal represent outstanding deposits (deposit in transit) and outstanding cheques (unpresented cheques).
- These outstanding deposits would be added to the balance (as per the bank statement) and the unpresented cheques would be deducted.

Bank reconciliation statement for Bergen Ltd at 30 April 2022		
Balance per bank statement	\$3 777	CR
add: Outstanding deposit	<u>403</u>	
	4 180	
less: Unpresented cheques		
no. 221	90	
no. 223	124	
no. 229	900	
no. 230	<u>556</u>	<u>1 670</u>
Balance per cash at bank ledger account	\$2 510	DR

Note: the unpresented cheques include no. 221, which was outstanding in the previous bank reconciliation.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Estimation of allowance for doubtful debts

The CFO of Olaf Limited has prepared a schedule based on her past experience indicating the following percentages of accounts receivable that have been written off as bad.

Age category	Percentage
Not yet due	1
1-30 days overdue	3
31-60 days overdue	10
61-90 days overdue	25
Over 90 days overdue	50

The present balance of the allowance for doubtful debts is \$1000 CR. As at 30 June, the ageing of accounts receivable revealed the following:

Not yet due	\$95 000
1-30 days overdue	\$25 000
31-60 days overdue	\$11 000
61-90 days overdue	\$ 4 000
Over 90 days overdue	\$ 2 000

- 1 Prepare a schedule of ageing of accounts receivable to determine the desired closing balance of allowance for doubtful debts.
- 2 Prepare the journal entry to record the closing balance of allowance for doubtful debts.

PRACTICE PROBLEM B

Reconciliation of subsidiary ledgers with control accounts

M. King Ltd, wholesaler, maintains subsidiary ledgers for debtors and creditors. The general ledger trial balance at 1 January 2022 is as set out below.

**M. KING LTD
TRIAL BALANCE AS AT 1 JANUARY 2022**

	\$	DR	CR
	\$	\$	\$
Share capital			20 000
Creditors:			
Adler	1 000		
Barnes	800		1 800
Mortgage loan			10 000
Bank		2 000	

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Debtors:		
Xavier	400	
Young	800	
Zoeller	<u>900</u>	2 100
Inventory		4 000
Premises		18 000
Fixtures and fittings		<u>5 700</u>
		<u>31 800</u>
		<u>31 800</u>

TRANSACTIONS FOR THE MONTH OF JANUARY

	Sales journal		Purchases journal	
	Sales \$	COGS \$		\$
Young	300	100	Barnes	1 600
Zoeller	600	300	Adler	5 000
Xavier	<u>700</u>	<u>350</u>		<u>—</u>
	<u>1 600</u>	<u>750</u>		<u>6 600</u>

CASH RECEIPTS JOURNAL

	Debtors \$	Sundry \$	Bank \$
Rent		3 000	3 000
Young	800		800
Zoeller	300		300
Dividends		4 000	4 000
Xavier	<u>400</u>	<u>—</u>	<u>400</u>
	<u>1 500</u>	<u>7 000</u>	<u>8 500</u>

CASH PAYMENTS JOURNAL

	Creditors \$	Sundry \$	Bank \$
Salaries expense		700	700
Barnes	800		800
Rent expense		400	400
Adler	<u>600</u>	<u>—</u>	<u>600</u>
	<u>1 400</u>	<u>1 100</u>	<u>2 500</u>

- Post from the journals to the general ledger and to the debtors' and creditors' subsidiary ledgers.
- Prepare supporting schedules of debtors and creditors at 31 January 2022 and agree with the balances in the control accounts.

PRACTICE PROBLEM C

Prepare a bank reconciliation statement and explain the need for cash records

The bank reconciliation made by Johnson Ltd on 31 August 2022 showed a deposit in transit of \$570 and two outstanding cheques: no. 597 for \$260 and no. 603 for \$180. The adjusted balance per books on 31 August was \$7980 debit.

The bank statement shown below is available for September. A list of deposits made and cheques written during September is shown here:

Deposits made			Cheques written		
		\$			\$
Sept.	1	350	No.	607	450
	4	420		608	325
	8	296		609	192
	12	580		610	285
	16	404		611	410
	24	535		612	242
	29	256		613	214
	30	<u>430</u>		614	453
		<u>3 271</u>		615	357
				616	<u>262</u>
					<u>3 190</u>

The cash at bank account balance on 30 September was \$8061. In reviewing the cheques, the bookkeeper discovered that cheque no. 610, written for \$258 for a repairs expense, was recorded in the cash payments journal as \$285. The 'return' item for \$335, which Johnson deposited on 24 September, was a payment on account from customer D. Lewis (dishonoured cheque).

Johnson Ltd Newtown, NSW	Bank statement		30 September 2022	
	DR	\$	CR	\$
31 Aug.	Brought forward			7 850 CR
1 Sept.	Cash/cheques		570	8 420 CR
	603	180		8 240 CR
2 Sept.	Cash/cheques		350	8 590 CR
5 Sept.	Cash/cheques		420	9 010 CR
	608	325		8 685 CR
	607	450		8 235 CR
8 Sept.	610	258		7 977 CR
9 Sept.	609	192		7 785 CR
	Cash/cheques		296	8 081 CR
15 Sept.	Cash/cheques		580	8 661 CR
	612	242		8 419 CR
17 Sept.	Cash/cheques		404	8 823 CR
	611	410		8 413 CR
25 Sept.	614	453		7 960 CR
	Cash/cheques		535	8 495 CR
30 Sept.	Cash/cheques		256	8 751 CR
	Return	335		8 416 CR
	Bank fee	15		8 401 CR

- 1 Prepare a bank reconciliation statement for Johnson Ltd at 30 September.
- 2 Prepare the necessary general journal entries to bring the cash at bank account up to date as at 30 September 2022.
- 3 Could a business dispense with its own cash records and rely entirely on bank statements?

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 Provide examples of accounts that would be included under the heading 'Receivables' in the balance sheet.
- 2 What is the difference between accounts receivable and accrued revenue?
- 3 Which of the following companies is likely to have low accounts receivable in comparison to total sales: Woolworths, Coca-Cola and QBE Insurance?
- 4 What is the difference between a bad debt and a doubtful debt?
- 5 Why do companies have an allowance for doubtful debts?
- 6 Outline the income statement approach to calculating the bad debts expense.
- 7 Outline the balance sheet approach to calculating the allowance for doubtful debts. What is an important step to remember in this approach?
- 8 What purposes are served by special journals? What control information could be made more readily available to management as a result of their use?
- 9 What considerations determine whether a special journal should be brought into use rather than placing entries in the general journal? Is the need for a general journal ever eliminated?
- 10 On what should you base your selection of the special analysis columns to be included in the cash payments journal?
- 11 Why should the sale of a fixed asset not be recorded in a simple sales journal?
- 12 Which special journal handles the following types of transactions?
 - a cash sales
 - b credit sales
 - c receipts from debtors
 - d payments to creditors
 - e cash purchases
 - f credit purchases
- 13 What is the purpose of a subsidiary ledger?
- 14 What are the advantages of a subsidiary ledger?
- 15 If a customer's account in the debtors' ledger shows a credit balance, does this necessarily indicate that an error has been made?
- 16 Does the double-entry principle of an equal value of debits and credits in the system cease to apply when subsidiary ledgers are being employed?
- 17 'Subsidiary ledgers involve unnecessary duplication, increase the opportunity for error and involve a breach of the double-entry principle. Under no circumstances can their use be justified.' Comment critically.
- 18 What is the purpose of a bank reconciliation statement?
- 19 Outline the importance of the bank reconciliation statement for a company's internal control system.
- 20 The bank reconciliation of XYZ Ltd reveals a significant bank error in XYZ's favour that will probably go undetected. As the accountant, you contact the general manager, who suggests that the bank has probably made errors in its favour in the past and that the bank should not be informed of its error. What should you do?

PROBLEMS

PROBLEM 11.1

Revision of revenues and expenses (including bad debts)

ADELAIDE LTD
BALANCE SHEET AS AT 31 DECEMBER 2021

Assets	\$	Liabilities	\$
Cash	168 000	Accounts payable	200 000
Accounts receivable (net of allowance of \$12 000)	312 000	Wages payable	16 000
		Unearned revenue	<u>256 000</u>
Inventory	320 000	Total current liabilities	472 000
Prepaid rent expense	<u>88 000</u>	Long-term debt	<u>0</u>
Total current assets	<u>888 000</u>	Total liabilities	<u>472 000</u>
Land	1 520 000	Shareholders' equity	
Equipment	3 200 000	Share capital	4 240 000
Less accumulated depreciation	<u>(640 000)</u>	Retained profits	<u>256 000</u>
Total noncurrent assets	<u>4 080 000</u>	Total shareholders' equity	4 496 000
Total assets	<u>4 968 000</u>	Total liabilities and shareholders' equity	<u>4 968 000</u>

The following transactions occurred during the year ended 31 December 2022 for Adelaide Ltd:

- a Issued share capital for \$300 000 cash.
- b Expiration of prepaid rent expense (i.e. prepaid rent expense balance to zero).
- c Purchased \$70 000 of inventory on credit.
- d Paid \$56 000 to accounts payable.
- e Sold inventory costing \$120 000 for \$340 000. All sales are on credit.
- f Collected \$106 000 from accounts receivable.
- g Depreciated equipment for the year using the straight-line method (10 per cent per annum).
- h Dividends paid totalled \$50 000.
- i Borrowed \$150 000 on 1 January 2022. The loan is due on 30 June 2024 and carries a 10 per cent per annum interest rate. Paid \$13 000 interest on this loan during the year ended 31 December 2022.
- j On 1 April paid \$30 000 for an insurance policy covering 1 April 2022 to 31 March 2023.
- k Paid wages of \$160 000; wages of \$30 000 had been earned but not paid to the first pay period in 2022.
- l Is owed \$9500 in interest from the bank at year-end.
- m Wrote off a bad debt for Sydney Ltd for \$3000 as the company went into bankruptcy. Increased the allowance for doubtful debts to \$13 000.
- n At 31 December 2022 the unearned revenue account balance had reduced to \$5000.

Required:

- 1 List all revenues (including dollar amounts) that will appear in the income statement for the year ended 31 December 2022.
- 2 List all expenses (including dollar amounts, ignoring taxation) that will appear in the income statement for the year ended 31 December 2022.
- 3 List all current assets at 31 December 2022 (including dollar amounts).

PROBLEM 11.2

Adjustments – accounting equation

Westworld Ltd operates three motels in large country centres. The accounts for the year ended 30 June 2022 have been finalised, with the exception of any adjustments that may result from the following:

- a Bonuses due to the motel managers totalling \$18 000 have not yet been recorded.
- b On 1 October 2021, a comprehensive insurance policy covering building and contents was taken out for the year ended 30 September 2022, the annual premium of \$4800 being paid on 1 November 2021.
- c Interest on investments amounting to \$450 is due but has not yet been received.
- d A payment of \$900 for embossed stationery was charged, in error, to the advertising account.
- e The accounts receivable balance is \$171 500. Allowance for doubtful debts is \$7000. Bad debts of \$350 are to be written off. Allowance for doubtful debts is to be adjusted to stand at 6 per cent of accounts receivable.
- f An amount of \$4500 spent on a laptop computer was charged to the office expenses account instead of the office equipment account.
- g In May, commission of \$360 was received in advance for the six months ending 31 October 2022.
- h At 30 June 2022, accrued electricity charges were \$292.

Required:

- 1 Show the impact of each transaction on the accounting equation.
- 2 Provide journal entries.

PROBLEM 11.3

Impact of transactions on financial statements

Management of Wei Limited are interested in the directional effect (i.e. increase, decrease or no effect) on net profit before tax and total assets for the year ended 30 June 2022, if the following occurred from January to June 2022.

- 1 Paying back a loan of \$200 000.
- 2 Purchasing inventory of \$150 000 on credit.
- 3 Receiving \$10 000 for a job to be done in July.
- 4 Making sales of \$200 000 on credit for goods that cost \$80 000.
- 5 Changing the depreciation policy by reducing the estimated life of certain equipment.
- 6 Prepaying insurance on 30 June 2022 for \$50 000. The policy covers the year commencing July 2022.
- 7 Increasing the allowance for doubtful debts by \$100 000.
- 8 Interest revenue is accrued at 30 June, and is \$5000.
- 9 Accounts receivable totalling \$12 000 are found to be uncollectable. The current balance of allowance for doubtful debts is \$100 000.

PROBLEM 11.4

Calculate bad debt expense and allowance for doubtful debts

Windjammer Technologies Ltd has been having difficulty collecting its accounts receivable. For the year 2022, the company increased the allowance for doubtful accounts by \$53 000, bringing the balance to \$74 000. At the end of 2022, accounts receivable equalled \$425 000. When the year-end audit was being done, it was decided to provide a further \$45 000 of accounts receivable that were doubtful, and write off \$30 000 of accounts receivable previously deemed doubtful.

Calculate the following:

- 1 bad debts expense for 2022
- 2 allowance for doubtful debts at the end of 2022
- 3 estimated collectable value of accounts receivable at the end of 2022.

PROBLEM 11.5

Questions about accounts receivable and doubtful accounts

Dragon Designs Ltd had the following general ledger accounts for last year, using the T-account format. All the company's sales are on credit to retail stores across the country. The first amount in each account is the balance at the beginning of the year; the last amount, under the solid line, is the balance at the end of the year. Other amounts are transactions and adjustments during the year.

Accounts receivable	Allowance for doubtful debts	Bad debts expense
Op. 244 620		Op. 11 914
1 693 784	1 599 005	9 117
<hr/> Cl. 331 106	<hr/> 8 293	<hr/> Cl. 12 738
		Cl. 9 117

- 1 What was the company's revenue for the year?
- 2 How much was collected on account of revenue for the year?
- 3 How much of the uncollected revenue did the company give up on during the year?
- 4 What was the expense the company incurred from taking the risk of extending credit to customers during the year?
- 5 What was the estimated collectable value of the accounts receivable at the end of the year?
- 6 What was the estimated collectable value of the accounts receivable before the year-end write-off of uncollectable accounts?

PROBLEM 11.6

Doubtful debts

On 1 July 2021, Morton Limited had accounts receivable of \$53 000 and an allowance for doubtful debts of \$3100. During the year ended 30 June 2022, credit sales amounted to \$432 500 and cash collected from customers was \$417 400. At the end of the financial year, the credit manager decided that accounts totalling \$1200 should be written off as bad debts and the allowance for doubtful debts increased to \$4200.

- 1 What was the estimated collectable value of accounts receivable as at 30 June 2022?
- 2 What was the amount of the bad debts expense for the year ended 30 June 2022?
- 3 What are the main reasons for using the allowance method of accounting for bad debts rather than the direct write-off method?

PROBLEM 11.7

Adjusting entries and financial statements

The trial balance shown below has been extracted from the general ledger of R. James Electronics Ltd at 30 June 2022. The following facts came to light after the trial balance was completed:

- a Investigation of a credit balance in a debtor's account in the subsidiary ledger showed that a credit sale of goods in May for \$800 had not been recorded.
- b The last day of the period, 30 June 2022, was a Wednesday. The staff are paid on Friday for a five-day working week that ends on Friday. Sales salaries are \$2035 per week and office salaries are \$475 per week.
- c Electricity expenses of \$350 have been incurred, but not billed and not recognised. Telephone expenses of \$200 have been incurred (in respect of calls) during June, but not recognised.
- d Rent expense includes an amount of \$600 prepaid for the first two weeks of July 2022.
- e Depreciation of \$2400 is to be charged on office equipment and depreciation of \$2805 is to be charged on demonstration equipment.
- f Interest on a loan is at the rate of 12 per cent per annum, payable quarterly in advance on the last day of each quarter. The loan was made on 1 October 2021.
- g Bad debts of \$700 are to be written off, and the allowance for doubtful debts is to be 2 per cent of debtors.

	Debit \$	Credit \$
Debtors	407 700	
Advertising	81 800	
Electricity	5 400	
Office equipment	24 000	
Postage and telephone	9 300	
Inventory	145 000	
Cost of goods sold	689 900	
Loans		160 200
Allowance for doubtful debts		8 800
Rent	16 000	
Sales salaries	105 800	
Office salaries	24 800	
Sales		1 105 800
Accumulated depreciation:		
Sales demonstration equipment		3 300
Office equipment		4 800
Sales demonstration equipment	22 000	
Share capital		50 000
Retained profits		61 500
Long-term loan		160 000
Interest on loan	19 200	
General office expenses	3 500	
	<hr/>	<hr/>
	1 554 400	1 554 400

- 1 Prepare general journal entries for any period-end adjustments for the above items.
- 2 Prepare an income statement for the year ended 30 June 2022.
- 3 Prepare a balance sheet as at 30 June 2022, suitably classified.

PROBLEM 11.8

Doubtful debts

Peakhurst Limited had the following trial balance at 1 January 2022:

	Debit \$	Credit \$
Cash	200 000	
Accounts receivable	600 000	
Inventory	700 000	
Prepaid insurance	60 000	
Prepaid rent	50 000	
Equipment	1 000 000	
Allowance for doubtful debts		20 000
Accumulated depreciation		200 000
Accounts payable		500 000
		>>

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Revenue received in advance	100 000
Income tax payable	500 000
Loan	570 000
Share capital	400 000
Retained profits	<u>320 000</u>
	<u>2 610 000</u>
	<u>2 610 000</u>

You are given the following additional information for the year ended 31 December 2022:

- a Bad debts of \$8000 were written off.
- b It was decided that allowance for doubtful debts should be 4 per cent of accounts receivable.

Required:

- 1 Prepare journal entries for these transactions.
- 2 Show the ledger accounts for the following for the year ended 31 December 2022:
 - a accounts receivable
 - b allowance for doubtful debts
 - c bad debts expense

PROBLEM 11.9

Income statement approach

Smarkly Limited uses the income statement approach to account for bad debts and allowance for doubtful debts. The following information is available:

- 1 Past experience suggests that 1 per cent of net credit sales will become uncollectable.
- 2 Credit sales for the year ended 30 June 2022, \$3 200 000.
- 3 Cash sales for the year ended 30 June 2022, \$700 000.
- 4 Bad debts written off during the year ended 30 June 2022, \$17 000.
- 5 Present balance of allowance for doubtful debts account, \$21 000.

Prepare the necessary journal entry or entries to account for bad debts for the year ended 30 June 2022.
Show all workings.

PROBLEM 11.10

Balance sheet approach

Sprintay Limited uses the balance sheet approach to account for its bad debts expense and allowance for doubtful debts. Past experience indicates the following percentages of accounts receivable that have been written off as bad.

Age category	Percentage
Not yet due	1
1-30 days	3
31-60 days	15
61-90 days	35
Over 90 days overdue	60

As at 30 June 2022, the ageing of accounts receivable revealed the following:

Not yet due	\$85 000
1-30 days	\$25 000
31-60 days	\$ 9 000
61-90 days	\$ 5 000
Over 90 days overdue	\$ 2 000

At present the allowance for doubtful debts ledger account is as follows:

Date	Details	Debit	Credit	Balance
1 July 2021	Opening balance			4 100 CR
15 September 2021	Accounts receivable	1 800		2 300 CR
27 November 2021	Accounts receivable	900		1 400 CR
15 March 2022	Accounts receivable	1 200		200 CR
19 June 2022	Accounts receivable	500		300 DR

Prepare the necessary journal entry or entries to record bad debts expense for the year ended 30 June 2022. Show all workings.

PROBLEM 11.11

Comprehensive example including a multi-column worksheet

Psyche Books Ltd is a bookshop specialising in psychology textbooks. Psyche Books has the following balance sheet as at 30 September 2022:

Account name	Account no.	\$
Assets		
Current assets		
Cash	1010	106 000
Accounts receivable	1020	147 000
Allowance for doubtful debts	1030	(14 400)
Inventory	1040	251 000
Prepaid insurance	1050	12 000
Prepaid rent	1060	45 000
Noncurrent assets		
Buildings	1100	1 400 000
Accumulated depreciation – buildings	1105	<u>(175 000)</u>
Motor vehicle	1200	45 000
Accumulated depreciation – motor vehicle	1205	<u>(9 000)</u>
Total assets		<u>1 807 600</u>
Liabilities		
Current liabilities		
Accounts payable	2010	94 000
Interest payable	2020	48 000
Income tax payable	2030	47 000
Salaries payable	2040	25 000
Provision for employee entitlements	2050	14 000
Accrued expenses	2060	12 400
Noncurrent liabilities		
Bank loan	2100	<u>900 000</u>
		<u>1 140 400</u>
Shareholders' equity		
Share capital	3010	400 000
Retained earnings	3020	<u>267 200</u>
Total liabilities and equity		<u>1 807 600</u>

Additional information:

- 1 Psyche Books uses perpetual inventory systems and all its textbooks are sold at a 30 per cent mark-up.
- 2 Buildings are depreciated at 2.5 per cent p.a.
- 3 Motor vehicle has a useful life of 10 years and is depreciated using the straight-line method.

Psyche Books uses the following chart of accounts:

Account name	Account no.	Account name	Account no.
Cash	1010	Share capital	3010
Accounts receivable	1020	Retained earnings	3020
Allowance for doubtful debts	1030	Sales	4000
Inventory	1040	COGS	5010
Prepaid insurance	1050	Interest expense	5020
Prepaid rent	1060	Income tax expense	5030
Prepaid advertising	1070	Salaries expense	5040
Buildings	1100		
Accumulated depreciation – buildings	1105	Sundry expenses	5060
Motor vehicle	1200		
Accumulated depreciation – motor vehicle	1205	Advertising expense	5070
Accounts payable	2010	Insurance expense	5080
Interest payable	2020	Rent expense	5090
Income tax payable	2030	Bad debts expense	5100
Salaries payable	2040	Inventory devaluation expense	5110
Provision for employee entitlements	2050	Depreciation expense – buildings	5120
Accrued expenses	2060	Depreciation expense – motor vehicle	5130
Bank loan	2100	Profit and loss summary	6000

The following events took place in October 2022:

01 October	Paid salaries.
03 October	Paid accrued expenses in full.
06 October	Credit sales, \$78 650.
07 October	Cash sales for the week amounted to \$17 849.
08 October	Paid interest on bank loan, as well as \$12 000 towards the principal.
11 October	Paid \$2000 for an advertisement in a local newspaper. The advertisement is going to be published every Saturday for 8 weeks, starting on 13 October.
12 October	Received \$109 456 from debtors.
14 October	Cash sales for the week amounted to \$9815.
15 October	Paid \$86 250 to creditors.
16 October	Ordered \$117 920 worth of inventory.
18 October	Credit sales, \$104 546.
21 October	Received the order placed on 16 October. Cash sales for the week amounted to \$1534.
25 October	Accounts receivable of \$14 230 were established to be uncollectable and were written off.
28 October	Paid income tax to ATO in full. Cash sales for the week amounted to \$819.
29 October	Received \$86 000 from debtors.
30 October	One of Psyche Books' employees decided to take his annual leave; he was paid \$5500.

At the end of the month the following events occurred:

- a Some of the stock of Psyche Books was recorded at \$5000 but was established to have a net realisable value of \$200.
- b Interest on bank loan accrued at the end of the month is \$46 000.
- c Depreciation was charged to the buildings and motor vehicle at the end of the month.
- d Monthly rent for Psyche Books' head office was \$5000 and is payable on the first of every month in advance.
- e Prepaid insurance was originally for two years, purchased on 1 January 2022.
- f The company policy is to keep allowance for doubtful debts at the end of the month equal to 3 per cent of total credit sales for the month.
- g Owed salaries at the end of the month, \$22 500.
- h Electricity charges for the month are estimated to be \$2760; phone charges for the month are estimated to be \$8900.

Required:

- 1 Prepare journal entries for the above transactions.
- 2 Enter the opening balances in the ledger accounts and post the journal entries to the ledger.
- 3 Prepare a 10-column worksheet.
- 4 Prepare and post the adjusting entries. Enter these entries into the worksheet.
- 5 Prepare pre-closing trial balance at 31 October 2022.
- 6 Prepare closing entries.
- 7 Prepare post-closing trial balance.
- 8 Prepare an income statement for the month of October 2022 and a balance sheet as at 31 October 2022.

PROBLEM 11.12

Preparation of control accounts

Smithers Ltd, a manufacturer, maintains subsidiary ledgers for creditors and debtors. At 30 June 2022, the total amount owing to the business by trade debtors amounted to \$4850 and the total amount owed by the business to its suppliers amounted to \$3976.

The following is a summary of the transactions for the month of July 2022.

	\$
Credit sales	8 626
Cash sales	2 374
Credit purchases	6 945
Cash received from debtors	9 673
Cash paid to creditors	6 575
Cash purchases	1 600
Discount received from creditors	56
Discount allowed to debtors	78
Creditors charged interest on overdue accounts	25
Freight paid and charged to debtors	22

Prepare the debtors and creditors control accounts, as they would appear in the general ledger, and bring down the balances as at 31 July 2022. Disregard any transactions that do not relate to either of these accounts.

PROBLEM 11.13

Preparation accounting for cash and receivables

Hardy Ltd provides cruise tours for seniors. Hardy Ltd provides these tours to four tour providers: A Ltd, F Ltd, N Ltd and Y Ltd.

The following was extracted from the schedule of debtors:

	2021 \$	2022 \$
A Ltd	(a)	29 432
F Ltd	65 147	94 564
N Ltd	(b)	47 733
Y Ltd	29 924	(c)

The following was extracted from the sales journal:

Particulars	Invoice No.	Accounts receivable \$
A Ltd	0501	25 365
F Ltd	0502	(d)
N Ltd	0503	15 000
N Ltd	0504	21 463
A Ltd	0505	51 156
N Ltd	0506	11 270

The following was extracted from the cash receipts journal:

Particulars	Accounts receivable \$
A Ltd	30 000
Y Ltd	9 924
F Ltd	15 677
N Ltd	24 376
A Ltd	22 365
F Ltd	23 742
A Ltd	19 050

The following information is also available (before any write-offs):

	2021 \$	2022 \$
Total cash receipts	289 563	350 742
Accounts receivable control	(e)	191 729
Total credit sales	251 764	(f)
Allowance for doubtful debts	7 552	(g)
Bad debts expense	14 372	(h)

No further sales were made during the year to Y Ltd, and it was decided at the end of the year that his remaining account would be written off against the allowance for doubtful debts. The closing balance of the allowance for doubtful debts for 2022 is 3 per cent of total credit sales for the year.

- 1 Calculate the missing figures (a) to (h). Show all workings.
 - a A Ltd (opening balance)
 - b N Ltd (opening balance)
 - c Y Ltd (closing balance – before write-off)
 - d F Ltd (sales)
 - e Accounts receivable control (opening balance)
 - f Total credit sales for 2022
 - g Allowance for doubtful debts for 2022 (closing balance)
 - h Bad debts expense for 2022
- 2 Using the general journal format, complete the following journal entries (as at the end of 2022):
 - a Write off the remaining balance of Y Ltd's account.
 - b Recognise the bad debts expense for the year.

PROBLEM 11.14

Specialised journals

Adrenaline Ltd provides tours for adventurers, such as mountain climbing, bungee jumping, whale watching and white-water rafting. Adrenaline Ltd provides these tours to four tour providers: Anna, Fred, Natalie and Yuki. All sales are on credit.

The following was extracted from the schedule of debtors:

	2021 \$	2022 \$
Anna	(a)	32 432
Fred	56 841	89 577
Natalie	(b)	48 830
Yuki	28 674	(c)

The following was extracted from the sales journal:

Particulars	Invoice no.	Accounts receivable \$
Anna	0501	26 653
Fred	0502	(d)
Natalie	0503	14 978
Natalie	0504	23 286
Anna	0505	53 561
Natalie	0506	10 060

The following was extracted from the cash receipts journal:

Particulars	Accounts receivable \$
Anna	30 220
Yuki	10 249
Fred	14 788
Natalie	25 763
Anna	23 356
Fred	24 427
Anna	19 016

The following information is also available (before any bad debt write-offs):

	2021 \$	2022 \$
Accounts receivable control	(e)	189 264
Total credit sales	266 067	(f)
Allowance for doubtful debts	7 982	(g)
Bad debts expense	14 372	(h)

No further sales were made during the year to Yuki, and it was decided at the end of the year that his remaining account would be written off against the allowance for doubtful debts.

The closing balance of the allowance for doubtful debts for 2021 is 3 per cent of total credit sales for the year.

- 1 Calculate the missing figures (a) to (h). Show all workings.
- 2 Complete the journal entries related to the allowance for doubtful debts account.

PROBLEM 11.15

Specialised journals and subsidiary ledgers

Jupiter Ltd uses multi-column cash receipts and cash payments journals, and maintains control accounts for accounts receivable and accounts payable, supported by subsidiary ledgers. Balances in the subsidiary ledgers at 1 June 2022 were as follows:

Accounts receivable		Accounts payable	
	\$		\$
Milky Way	3 000	Venus	6 000
Mars	14 000	Mercury	10 000
Constellation	10 000	Sun	6 000

During June 2022, the following amounts were received and paid:

June 2	Paid Venus \$6000.
3	Milky Way paid an amount owing of \$1100, less \$30 discount.
8	Cash sales, \$500.
10	Paid an amount owing to Sun of \$4000, less \$40 discount.
15	Mars paid \$7000 and was allowed \$100 discount.
16	Purchased goods for cash, \$3000.
29	Constellation paid \$8000, less \$200 discount.
30	Paid Mercury \$5000, discount of \$200 was lost.

Write up the cash receipts journal and the cash payments journal. Use separate columns for bank, discount allowed, accounts receivable, cash sales, discount received, accounts payable and (cash) purchases. Post from these journals to both the general ledger and the subsidiary ledgers and prepare schedules of accounts receivable and accounts payable as at 30 June 2022.

PROBLEM 11.16

Preparation of control accounts

Prepare debtors' and creditors' control accounts for the year commencing 1 July 2021 from the following information:

Balances at 1 July 2021		\$
Debtors' control		15 425
Creditors' control		9 870
Summary of transactions to 30 June 2022		\$
Credit sales		101 700
Cash sales		3 540
Credit purchases		71 620
Cash purchases		3 215
Cash paid to creditors		45 280
Discount allowed by suppliers		560
Discount given to debtors		725
Cash received from debtors		61 590

PROBLEM 11.17

Subsidiary ledgers and control accounts

James Stewart owns a general store in a country town. He keeps two subsidiary ledgers (an accounts receivable ledger and an accounts payable ledger) and a general ledger.

Balances in the subsidiary ledgers as at 31 March 2022 were as follows:

Accounts receivable		Accounts payable	
	\$		\$
Brown	900	Blue	580
Green	700	Red	<u>1 500</u>
White	<u>460</u>		2 080
	2 060		

Transactions for the month April 2022					
Sales journal			Purchase journal		
Date 2022	Particulars	\$	Date	Particulars	\$
April 2	White	1 240	April 7	Red	2 000
13	Brown	2 400	16	Blue	1 120
16	Sage	1 160	20	Sage	200
20	Ruby	<u>1 700</u>	22	Grey	<u>750</u>
		6 500			4 070

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Date 2022	Particulars	Cash receipts journal			Bank \$	Page 35 Sales discount \$
		Cash sales \$	Accounts receivable \$			
Apr. 2	Sales	560			560	
4	White		460		450	10
7	Sales	350			350	
10	Green		200		196	4
15	Brown		900		875	25
25	Ruby	—	700		682	18
		910	2 260		3 113	57

Date 2022	Particulars	Cash payments journal			Bank \$	Page 29 Purchases discount \$
		Accounts payable \$	Sundries \$			
Apr. 4	Purchases		75		75	
10	Insurance		250		250	
14	Red	1 500			1 465	35
20	Advertising		150		150	
20	Wages		140		140	
24	Blue	1 700			1 655	45
27	Rent	—	100		100	—
		3 200	715		3 835	80

- Post from the journals to the accounts receivable and accounts payable control accounts in the general ledger, and to the accounts receivable and accounts payable ledgers.
- Prepare supporting schedules of accounts receivable and accounts payable at 30 April 2022, and agree with the balances in the control accounts.

PROBLEM 11.18

Explain why bank reconciliation statements are prepared, and then prepare one

- Why are bank reconciliation statements prepared? Under what circumstances would it be unnecessary to prepare a bank reconciliation statement?
- You have been supplied with the following information produced by comparing the records of the Swift Company with its most recent bank statement:
 - debit balance as per cash at bank account in ledger as at 30 June, \$12 644.40
 - credit balance as per bank statement as at 30 June, \$16 860.30
 - deposits not reflected on bank statement, \$1880.00
 - unpresented cheques 30 June, \$6185.90
 - bank charge on bank statement not recorded in books, \$30.00
 - error by bank – Switch Company cheque charged to Swift Company's account, \$420.00
 - cheque for advertising expense, \$480.00, incorrectly recorded in books as \$840.00.
- Prepare a bank reconciliation statement as at 30 June.
- Prepare entries in general journal form to update the records of the Swift Company.

PROBLEM 11.19

Bank reconciliation statements

ASB Limited received its bank statement for the month ending 30 June, and reconciled the statement balance to the 30 June balance in the cash account. The reconciled balance was determined to be \$4800. The reconciliation included the following items:

- a Deposits in transit were \$2100.
- b Outstanding cheques totalled \$3000.
- c Bank fees of \$50 were shown on the bank statement as a deduction.
- d An NSF cheque from a customer for \$400 was included on the bank statement. The firm had not been previously notified that the cheque had been returned for insufficient funds.
- e Included in the presented cheques was a cheque actually written for \$890. However, it has been recorded by the bank as a disbursement of \$980.

Required:

- 1 What was the balance in ASB Limited's cash account before recognising any of the above reconciling items?
- 2 What was the balance shown on the bank statement before recognising any of the above reconciling items?
- 3 Prepare any necessary adjusting journal entries.

PROBLEM 11.20

Bank reconciliation statement

AAA Limited received its bank statement for the month ending 30 June, and reconciled the statement balance to the 30 June balance in the cash account. The reconciled balance was determined to be \$5000. The reconciliation included the following items:

- a Deposits in transit were \$2000.
- b Outstanding cheques totalled \$3000.
- c Interest revenue of \$30 was shown on the bank statement.
- d An NSF cheque from a customer for \$400 was included on the bank statement. The firm had not been previously notified that the cheque had been returned for insufficient funds.

Required:

- 1 What was the balance in AAA Limited's cash account before recognising any of the above reconciling items?
- 2 What was the balance shown on the bank statement before recognising any of the above reconciling items?
- 3 Prepare any necessary adjusting journal entries.

PROBLEM 11.21

Prepare a bank reconciliation statement

The bookkeeper at Covington Ltd undertakes a bank reconciliation at the end of every month. On 31 August, the bank reconciliation showed a deposit in transit of \$650 and two outstanding cheques (no. 463 for \$170 and no. 471 for \$350). The adjusted cash balance in the company records was \$5906 debit.

The company's September bank statement is shown below.

Covington Ltd Kensington, NSW		DR	CR	Statement period 31/8/2022-30/9/2022
		\$	\$	\$
31 Aug.	Balance brought forward			5 776 CR
1 Sept.	Deposit	650		6 426 CR
2 Sept.	Deposit	590		7 016 CR
	482	260		6 756 CR
5 Sept.	Deposit		340	7 096 CR
7 Sept.	471	350		6 746 CR
8 Sept.	Deposit		420	7 166 CR
11 Sept.	Deposit		210	7 376 CR
	484	350		7 026 CR
12 Sept.	483	850		6 176 CR
14 Sept.	Deposit		810	6 986 CR
	487	740		6 246 CR
19 Sept.	Deposit		280	6 526 CR
21 Sept.	485	680		5 846 CR
25 Sept.	Deposit		760	6 606 CR
28 Sept.	486	630		5 976 CR
30 Sept.	480	430		5 546 CR
	Interest		18	5 564 CR
	Bank charges	11		5 553 CR

Company records indicate the following deposits made and cheques written during September:

Deposits made	\$	Cheques written	No.	\$
Sept. 2	590	479	240	
5	340	480	430	
8	420	481	345	
11	210	482	260	
14	810	483	850	
19	280	484	350	
25	760	485	680	
29	<u>630</u>	486	360	
	4 040	487	<u>740</u>	
				4 255

The cash at bank account balance on 30 September was \$5691. In reviewing cheques, a mistake was discovered: cheque no. 486, written for advertising expenses of \$630, was recorded in the cash payments journal as \$360.

- 1 Prepare the necessary journal entries to bring the cash at bank account up to date as at 30 September.
- 2 Prepare a bank reconciliation statement for Covington Ltd at 30 September.

PROBLEM 11.22

Prepare a bank reconciliation statement

The following information comes from the records of Anthea's Homewares.

From the cash receipts records:			From the cash payments records:		
	\$	Date	Cheque no.	\$	
April 1	687	April 2	570	415	
8	805	3	571	82	
15	412	5	572	137	
22	903	8	574	1 315	
29	246	11	575	642	
		15	576	701	
		17	577	240	
		20	578	194	
		23	579	311	
		27	580	293	
		28	581	114	

From the general ledger Cash at bank			Account no. 111		
Date	Item	Post ref	Debit	Credit	Balance
March 31	Balance				2 594 DR

Bank statement			Statement period
	DR \$	CR \$	31/3/2022-30/4/2022 \$
March 31	Balance brought forward		3 657 CR
April 1	Deposit	687	4 344 CR
3	568	372	3 972 CR
4	570	415	3 557 CR
8	Deposit	805	4 362 CR
	572	137	4 225 CR
9	Direct credit	696	4 921 CR
10	574	1 513	3 408 CR
11	575	642	2 766 CR
14	552	435	2 331 CR
15	Deposit	412	2 743 CR
16	571	82	2 661 CR
19	NSF	421	2 240 CR
20	576	701	1 539 CR
22	Deposit	903	2 442 CR
	578	194	2 248 CR

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25	560	97	2 151 CR
27	577	240	1 911 CR
30	581	114	1 797 CR
	Interest	58	1 855 CR
	Bank charges	24	1 831 CR

The NSF cheque was received from Bond Enterprises, a debtor. The direct credit represents a \$650 bill collected by the bank, plus interest. Cheque no. 573 was prepared improperly and has been cancelled. Cheque no. 574 for a purchase of inventory was incorrectly recorded as a cash payment of \$1315 instead of \$1513. On 31 March, the only reconciling items were a series of unpresented cheques: no. 552 at \$435, no. 560 at \$97, no. 562 at \$159 and no. 568 at \$372.

Prepare a bank reconciliation statement for Anthea's Homewares at 30 April, and any necessary adjusting journal entries.

PROBLEM 11.23

Prepare a bank reconciliation statement with overdraft

The following information comes from the records of Betty's Boutique.

From the cash receipts records:			From the cash payments records:		
Date 2022	Cash (DR) amount	\$	Date 2022	Cheque no.	Amount
Nov. 1	1 828		Nov. 1	721	28
7	2 024		2	722	566
14	6 480		3	723	832
21	5 292		4	724	54
30	3 884		5	726	10
		10		727	11 492
		11		728	1 418
		20		729	2 492
		21		730	152
		22		731	10 000

From the general ledger: Cash at bank					Account no. 111
Date	Item	Post ref.	Debit	Credit	Balance
Oct. 31	Balance				4 930 DR

Wolfpac National Bank		Statement of Betty's Boutique		
Date	Particulars	Debit	Credit	Balance
2022		\$	\$	\$
Nov. 1	Balance			7 570 CR
2	700	200		7 370 CR
2	707	1 000		6 370 CR
2	Deposit		1 828	8 198 CR
4	720	920		7 278 CR
4	721	28		7 250 CR
6	723	832		6 418 CR
8	724	54		6 364 CR
8	Deposit		2 024	8 388 CR
12	726	10		8 378 CR
12	NSF	30		8 348 CR
14	728	1 814		6 534 CR
15	Deposit		6 480	13 014 CR
22	Deposit		5 292	18 306 CR
24	727	11 492		6 814 CR
26	730	152		6 662 CR
26	731	10 000		3 338 DR
26	DC		816	2 522 DR
30	SC	8		2 530 DR
30	IN		84	2 446 DR

Code: DC – Direct credit IN – Interest NSF – Non-sufficient funds DD – Direct debit SC – Service charge

The NSF cheque was received from J. Pindar, a debtor. The direct credit represents an \$800 bill collected by the bank, plus interest. Cheque no. 725 was prepared improperly and has been cancelled. Cheque no. 728 for a purchase of inventory was incorrectly recorded as a cash payment of \$1418 instead of \$1814. On 1 November, there were only the following unpresented cheques as reconciling items: no. 700 at \$200, no. 707 at \$1000, no. 719 at \$520 and no. 720 at \$920.

Prepare a bank reconciliation statement, as at 30 November 2022, and any necessary adjusting journal entries.

CASES

CASE 11A

Woolworths Limited

Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 How were trade debtors valued in the accounts?
- 2 During the year, how much was written off in bad debts? How did this compare with the previous year?
- 3 What would the journal entry have been to record bad debts?

CASE 11B

Telstra Limited

The following is an extract from Telstra's 2021 financial statements (Note 3.3).

	Telstra Group As at 30 June					
	2021	Gross \$m	Allowance \$m	2020	Gross \$m	Allowance \$m
Not past due	4 266		(47)	3 516		(33)
Past due 0-30 days	301		(21)	447		(2)
Past due 31-60 days	84		(11)	141		(2)
Past due 61-90 days	44		(10)	89		(9)
Past due 91-120 days	144		(110)	267		(155)
	5 236		(199)	5 806		(201)

Telstra Corporation Limited, *Annual Report 2021*, p. 117. Reproduced with permission.
(<https://www.telstra.com.au/content/dam/tcom/about-us/investors/pdf-g/0821-TEL-AR-2021-FINAL-Singles.pdf>).

- 1 Calculate the percentages used by Telstra in 2020 and 2021.
- 2 Comment on how the percentages have changed between 2020 and 2021.

HOW'S YOUR UNDERSTANDING? SOLUTIONS

11A Income statement: revenue would be understated and therefore profit understated.

Balance sheet: assets would be understated and retained profits would be understated (because profit was understated).

11B Assets (probably current assets, assuming that the amount will be received within a year).

11C i Receivables: $\$78\,490 - \$1100 = \$77\,390$

ii Allowance for doubtful debts: $\$2310 + \$1560 - \$1100 = \2770

iii Bad debts expense: $\$1560$.

11D	i In the books of the seller:		ii In the books of the purchaser:	
	DR	Accounts receivable	DR	Inventory
	CR	Sales revenue	400	400
			CR	Accounts payable

And on receipt of payment within the discount period:

DR	Cash	390	DR	Accounts payable	400
DR	Discount allowed	10	CR	Cash	390
CR	Accounts receivable	400	CR	Discount received	10

11E i Password access for authorised users, edit checks and no payment greater than \$x.

- ii** The person who records cash transactions does not physically handle cash.
- iii** Locks, swipe-card access to approved employees, and video cameras in shops.

Bank reconciliation statement as at 30 June 2022.

		\$
Balance as per bank statement		20 208 CR
Plus Outstanding lodgement 30 June		<u>2 450</u>
		22 658
Less Unpresented cheques		<u>8 250</u>
Balance as per bank A/C in ledger		<u>14 408 DR</u>
Ending balance per Holmes Traders records		13 418 DR
Add: Direct credit from Emma & Tim Limited		<u>1 000</u>
		14 418
Deduct: Bank charge		<u>10</u>
Adjusted cash balance: Holmes Traders records		<u>14 408 DR</u>

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1 To determine the desired closing amount of the allowance for doubtful debts, the CFO prepares a schedule as follows:

Age category	Amount	Percentage	Estimated uncollectable
Not yet due	\$95 000	1	950
1-30 days overdue	\$25 000	3	750
31-60 days overdue	\$11 000	10	1 100
61-90 days overdue	\$4 000	25	1 000
Over 90 days overdue	\$2 000	50	1 000
Total	\$137 000		\$4 800

- 2 Don't forget that the allowance for doubtful debts has an opening balance of \$1000 CR (in the question). As the calculated desired closing balance for the allowance for doubtful debts is \$4800, an additional \$3800 will need to be added to this account using the following journal entry:

DR	Bad debts expense	\$3800
CR	Allowance for doubtful debts	\$3800

PRACTICE PROBLEM B

- 1 Postings to general ledger and subsidiary ledgers:

GENERAL LEDGER

Debtors			
Opening balance	2 100	Cash	1 500
Sales	<u>1 600</u>		
Closing balance	2 200		

Creditors			
Cash	1 400	Opening balance	1 800
		Purchases	<u>6 600</u>
		Closing balance	7 000

DEBTORS' LEDGER

Xavier			
Opening balance	400	Cash	<u>400</u>
Sales	<u>700</u>		
Closing balance	700		

Young			
Opening balance	800	Cash	<u>800</u>
Sales	<u>300</u>		
Closing balance	300		

Zoeller			
Opening balance	900	Cash	300
Sales	<u>600</u>		
Closing balance	1 200		

CREDITORS' LEDGER

Adler			
Cash	600	Opening balance	1 000
		Purchases	<u>5 000</u>
		Closing balance	5 400

Barnes			
Cash	800	Opening balance	800
		Purchases	<u>1 600</u>
		Closing balance	1 600

2 Supporting schedules:

Schedule of debtors at 31 January 2022		\$
Xavier		700
Young		300
Zoeller		<u>1 200</u>
		2 200

Schedule of creditors at 31 January 2022		\$
Adler		5 400
Barnes		<u>1 600</u>
		7 000

PRACTICE PROBLEM C

1 Bank reconciliation statement:

**JOHNSON LTD
BANK RECONCILIATION STATEMENT 30 SEPTEMBER 2022**

		\$	\$
Ending	Balance as per bank statement		8 401 CR
	Add: Deposit not credited by bank		<u>430</u>
			8 831
	Less: Outstanding cheques		
	No 597	260	
	No 613	214	
	No 615	357	
	No 616	262	1 093
Adjusted:	Balance as per cash at bank account		<u>7 738 DR</u>
Ending	Balance per company records		8 061 DR
	Add: Increase reported bank statement but not entered in company records:		
	Error in recording cheque 610		<u>27</u>
			8 088
	Deduct: Decreases reported on bank statement but not entered in company records:		
	Accounts receivable – dishonoured cheque	335	
	Bank charges	15	350
Adjusted:	Balance as per cash at bank account		<u>7 738 DR</u>

2 General journal entries:

Date 2022	Description	DR \$	CR \$
Sep 30	Cash at bank	27	
	Repairs expense		27
	To correct error in recording \$258 cheque as \$285.		
30	Accounts receivable - D Lewis	335	
	Cash at bank		335
	To record dishonoured cheque.		
30	Bank charges	15	
	Cash at bank		15
	To record bank service charge.		

3 Points to note:

- A business could dispense with its own cash records and rely entirely on bank statements but, in most cases, such an arrangement would fail to provide information that would be adequate for internal control purposes.
- Bank errors are rare, but possible, due to the rigid internal checks in force so that the bank statements provided would generally be accurate records. Problems would arise in respect of lack of detail and absence of an up-to-date record.
- The bank statement furnishes adequate details of charges levied by the bank. However, it provides a minimum of information concerning cheques that have been cleared and deposits that have been made. Businesses require details of other parties involved in transactions, and about the accounts affected by these transactions, and these are not forthcoming from the bank.
- The information shown on the bank statement may not be sufficiently up to date for internal control purposes. Such statements are normally obtained from the bank on a weekly or monthly basis but if they constituted a firm's sole cash record it would be necessary to arrange for them to be furnished more frequently.
- Sums deposited are normally recorded by the bank very promptly. However, cheques that are written by the customer can only be debited to his or her account when presented for payment. Delay in presentation will inevitably lead to an overstatement of cash at bank and could mislead management. Decisions could be made on the assumption that ample funds were available; this could lead to financial problems when all cheques had been cleared.
- In general, most businesses prefer to maintain their own cash records. This is so that the records will:
 - be in a form that is useful to the organisation
 - be in sufficient detail
 - be kept up-to-date
 - as a form of control.

NOTES

- 1 Material related to ageing of accounts receivable was provided by Noel Harding.
- 2 Material relating to expanded bookkeeping was provided by Athol Carrington and Gordon Howitt and rewritten by Michael Pennisi.
- 3 Section 11.11 is adapted with permission from L. Solomon, L. Walter, P. Vargo & L. Plunkett, *Financial Accounting*, South-Western College Publishing, Cincinnati, Ohio, 1996.
- 4 The material for these steps was provided by Rosina Mladenovic, as were some questions. A number of the questions were provided by Kevin Clarke, Gordon Howitt, Claudia Gormly, Chris Poullaos, Rosina Mladenovic and Peter Roebuck.

12

Inventory



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** explain the difference between perpetual and periodic inventory systems (12.1)
- LO2** develop effective inventory controls (12.1)
- LO3** analyse the effect of inventory transactions on the financial statements (12.2)
- LO4** prepare journal entries for transactions under both the periodic and perpetual methods (12.2)
- LO5** calculate the cost of inventory in accordance with accounting standards (12.3)
- LO6** discuss the different types of inventory cost flow assumptions (12.3; 12.4)
- LO7** calculate the impact of different cost flow assumptions on profit determination and inventory valuation (12.5; 12.7)
- LO8** apply the lower of cost and net realisable value rule to the measurement of inventory (12.6)
- LO9** interpret the inventory disclosure policies of Australian companies (12.8)
- LO10** explain why inventory valuation is important to managers (12.9).

CHAPTER OVERVIEW

For many companies, inventory is one of their largest assets. For example, consider retailers like Woolworths and Harvey Norman or a manufacturer of cars, trucks and buses. In this chapter, we consider inventory control and various aspects of inventory accounting. Inventory accounting affects both the balance sheet (the value of the inventory asset) and the expense recognised for the use of inventory (cost of goods sold [COGS] expense in the income statement).

12.1 Inventory control

LO1

Chapter 5 emphasised the importance of keeping accurate records to provide information for both internal and external users. Many of the records that are kept have to do with the control of inventory. Inventory control is an important issue for management because a high percentage of assets may be tied up in inventory. Inventory may be perishable or become obsolete if held too long and, due to the physical attributes of some types of inventory, there may be a great potential for theft.

LO2

Several different inventory control systems may be used, depending on the nature of the inventory and the objectives of management. The methods explained below are the two that are most commonly used by business. Each provides a different amount of information at a different cost. It is important to note that the choice of inventory control system is a *record-keeping* choice as opposed to a *reporting* choice: management is simply deciding how to record the inventory. How inventory is reported on the financial statements is dealt with in later sections of this chapter.

The perpetual inventory control method

To date, in the textbook we have been using the perpetual inventory system as it is most commonly used in practice. When inventory is purchased, an asset increases (inventory) and either an asset decreases (cash) or a liability increases (accounts payable). When the inventory is sold, an asset (inventory) decreases and an expense increases (COGS).

Under the perpetual system, in addition to the generic ledger account, each investing item has a separate subsidiary record showing increases, decreases and the balance of items in stock.

When an order of inventory items is received, the quantity received is added to the quantity recorded as being already on hand. When items are sold, they are deducted from the recorded quantity. Therefore, the perpetual inventory method shows how many items are supposed to be on hand at any time. The steps of the perpetual inventory method are as follows:

- Take the quantity on hand at the beginning of the period.
- Add the quantity purchased during the period.
- Deduct the quantity sold during the period.
- This equals the quantity that should be on hand at the end of the period.

The name 'perpetual inventory control' comes from the idea that the accounting system has a continuously updated figure for the amount that should be on hand. If a physical count of the inventory fails to show that quantity, the company knows that some items have been lost or stolen, or that there has been an error in the records. Just as for cash, bank accounts and accounts receivable, the records provide accounting control in addition to any physical protection. The accounting records tell the company what should be on hand.

In most of the examples so far in this text, it has been assumed that the perpetual control method has been used, because each inventory purchase has been recorded as a debit to inventory asset (and credited to cash or accounts payable), and when inventory is sold, COGS has been credited to the asset (inventory) and debited to COGS expense.

The perpetual method provides additional management information. Suppose that after the above calculation, the expected ending inventory was 3000 units, but a stocktake to confirm showed only 2700 units of inventory on hand. Management would know there had been a 300 unit shortage or other error, and could intensify controls over inventory if that were thought to be cost-effective.

The inventory asset account would be adjusted to match the count by an adjusting entry to reduce inventory and increase an expense. The expense is likely to be called 'inventory shortage' expense. The accounts would then show the expense being incurred by the imperfect control.

The periodic count method

When goods are bought, they are put on the shelf or in the storeroom, and when they are sold or used, they are taken off the shelf or out of the storeroom. With the perpetual control system, records are kept of every

one of these movements to provide expected quantities or values on hand. However, if complete records of such inventory changes are not kept, the organisation does not have records to indicate what should be on hand. The only way to tell what is on hand is to go and count it. Because this sort of counting tends to be done only periodically, when an inventory figure is needed for preparation of financial statements, this method is called the periodic inventory method. Under the periodic count method, inventory is treated as an expense at the time of purchase by increasing an account often called purchases (an expense account). When inventory is sold, there is no entry to account for a decrease in inventory or cost of goods sold as there is under the perpetual method. The cost of goods sold will be calculated (as follows) and the ending inventory will be taken from a stock count or inventory management system.

While there may be other features of internal control present, such as physical protection and insurance, the periodic count method lacks the parallel record-keeping that gives the perpetual method its value. There is no way to reconcile counts to records in order to discover errors, but it is simple and cheap to operate, because no continuing records are kept. Record-keeping does cost money! The calculation to work out the cost of goods sold under a periodic inventory system is as follows:

$$\begin{aligned} & \text{Beginning inventory (count)} + \text{Purchases (records)} - \text{Ending inventory (count)} \\ & = \text{Inventory sold (deduced); that is, cost of goods sold} \end{aligned}$$

Because what has been sold is inferred, rather than known from records, you can see that it might not all have been sold. Some could have been lost, stolen, evaporated and so on. So under the periodic method, COGS expense (cost of counted beginning inventory + cost of purchases – cost of counted ending inventory) includes all these other possibilities. If the periodic method is used, other forms of control need to exist to indicate theft and so on. For example, unexpected changes in the ratio of COGS to sales should be investigated.

Inventory: cost and benefits of controls

The perpetual method can be more costly in terms of record-keeping, although advances in information systems have generally reduced this cost in recent years. What type of business uses a perpetual system? The answer is most companies do. For example, companies selling expensive items, such as television sets, stereos, refrigerators, jewellery or furniture, use the perpetual method.

However, some small businesses may find it less costly to use a periodic method. For example, small shops can observe when stock is low and record then. Businesses such as soil and garden supplies, golf shops, etc. may be able to easily observe the amount of stock on hand when reordering and use a periodic system. However, as businesses become larger they certainly need a perpetual system. In the past, many organisations that had a large number of sales, particularly of items with relatively low value, used the periodic inventory method because of its lower costs. However, with the advances in inventory management systems, most organisations now use the perpetual system because of its advantages in controlling inventory. For example, many retail companies have cash registers that use optical scanners to read the barcodes attached to products. These read the sales price and also update the inventory records. Have you wondered recently why when you return an item of clothing to a department store to exchange it for a different size, the cashier scans both the returned item and the replacement item? As the sales price is generally the same, the usual reason is to update inventory records. This not only assists with control but also helps with planning for ordering additional inventory.



HOW'S YOUR UNDERSTANDING?

12A Do you expect that your university bookshop uses a perpetual or periodic inventory system? Why?

12.2 Accounting entries for perpetual and periodic inventory

LO3 Brinkworth Ltd uses a perpetual accounting control system for its inventory. It has the following data for a recent period.

LO4

	\$		\$
Beginning accounts receivable	40 000	Beginning inventory	23 000
Purchases of inventory during period (all on credit)	114 000	Sales (all on credit)	150 000
Cash collected in period	115 000	Ending inventory	28 000

The company's mark-up is 50 per cent on cost (i.e. the selling price is 150 per cent of cost). Just to make it easier, we'll assume that all sales, purchases and collections were in single transactions.

First, we will consider the impact on the accounting equation. Note: if the company's mark-up on cost is 50 per cent and sales equal \$150 000 then cost must have been \$100 000.

	\$
a Purchases	Increase inventory
	Increase accounts payable
b Sales	Increase accounts receivable
	Increase sales revenue
c Cost of goods sold	Increase COGS
	Decrease inventory
d Adjustment	Increase inventory shortage expense (see below)
	Decrease inventory
e Collections	Increase cash
	Decrease accounts receivable

Here is a summary of the journal entries for the perpetual system.

	\$	\$
a Purchases	DR Inventory	114 000
	CR Accounts payable	114 000
	<i>Purchases during the period.</i>	
b Sales	DR Accounts receivable	150 000
	CR Sales revenue	150 000
	<i>Sales on credit during the period.</i>	
c Cost of goods sold	DR COGS expense	100 000
	CR Inventory	100 000
	<i>COGS expense: \$150 000 revenue minus 50 per cent mark-up on cost.</i>	
d Count adjustment	DR Inventory shortage expense	9 000
	CR Inventory	9 000
	<i>Shortage; record indicates inventory should be \$23 000 + \$114 000 – \$100 000 = \$37 000 but only \$28 000 is on hand. Thus, there is a \$9 000 shortage.</i>	
e Collections	DR Cash	115 000
	CR Accounts receivable	115 000
	<i>Customer collections during the period.</i>	

Let's review two accounts here to ensure that you see how the accounting figures help with the control.

	\$
Inventory account:	
Beginning cost balance	23 000
Purchases	114 000
Cost of goods sold	<u>(100 000)</u>
Expected balance on hand	37 000
The stocktake showed less than expected on hand:	
Adjustment for loss	<u>(9 000)</u>
Revised ending balance	<u>28 000</u>
Accounts receivable account:	
Beginning	40 000
Sales	150 000
Collections	<u>(115 000)</u>
Ending balance	75 000

Let's now consider the accounting entries under the periodic method.

			\$
a	Purchases	Purchase expense increases	114 000
		Accounts payable increases	114 000
b	Sales	Accounts receivable increases	150 000
		Sales revenue increases	150 000
c	Collections	Cash increases	115 000
		Accounts receivable decreases	115 000

The journal entries for the periodic inventory system are as follows.

				\$	\$
a	Purchases	DR	Purchase expense	114 000	
		CR	Accounts payable		114 000
			<i>Purchases during the period.</i>		
b	Sales	DR	Accounts receivable	150 000	
		CR	Sales revenue		150 000
			<i>Sales on credit during the period.</i>		
c	Collections	DR	Cash	115 000	
		CR	Accounts receivable		115 000
			<i>Customer collections during the period.</i>		

Note that under the periodic method there are no journal entries for COGS and inventory shortage (entries [c] and [d] under the perpetual method). COGS is not affected at the time of sale. It is calculated at the end of the accounting period by adding purchases for the period to opening inventory and then deducting closing inventory. Inventory shortages are not known, because there are no inventory records with which to compare the stock count total. Under the periodic inventory method, no adjustment has yet been made to the inventory account to show that it is different at the end of the period from what it was at the beginning of the period (because of purchases and sales). This adjustment to the inventory account will occur in the closing entries.

If the company did use the periodic count method, we would have the \$23 000 from the beginning, plus the \$114 000 purchased, less the \$28 000 counted at the end, for an apparent COGS of \$109 000. You can see that, had we had the perpetual records, we would know that this figure is actually the sum of the \$100 000 cost of goods really sold and the \$9000 shortage. Both methods have the same revenue and the

same total expense (\$109 000), but they differ in the information they provide to management about what is going on. It is only under the perpetual method that they know about the shortage of inventory.

Comparing perpetual and periodic inventory systems

The gross profit calculation under both methods is shown below.

PERPETUAL INVENTORY SYSTEM

	\$	\$
Sales		150 000
Less: COGS	100 000	
Less: Inventory shortage	<u>9 000</u>	<u>109 000</u>
Gross profit		<u>41 000</u>

PERIODIC INVENTORY SYSTEM

	\$	\$
Sales		150 000
Cost of goods sold:		
Opening inventory	23 000	
Purchases	<u>114 000</u>	
Cost of goods available for sale	137 000	
Less: Ending inventory	<u>28 000</u>	
COGS		<u>109 000</u>
Gross profit		<u>41 000</u>

In Chapter 10 we discussed closing entries. The closing entries under the perpetual and periodic methods are shown below:

PERPETUAL METHOD

	\$	\$
DR Profit and loss summary	109 000	
CR COGS expense		100 000
CR Inventory shortage expense		9 000
DR Sales revenue	150 000	
CR Profit and loss summary		150 000

PERIODIC METHOD

	\$	\$
DR Profit and loss summary	137 000	
CR Purchases		114 000
CR Inventory (beginning)		23 000
DR Inventory (ending)	28 000	
DR Sales revenue	150 000	
CR Profit and loss summary		178 000

Under both methods, the profit and loss summary account and the inventory account will have the same balances. (Later in this chapter you will see situations where this is not the case, because of certain inventory cost flow assumptions that have been made.)

PERPETUAL METHOD

Profit and loss summary			Inventory		
109 000		150 000	OB	23 000	100 000
	CB	41 000		114 000	9 000
			CB	28 000	

PERIODIC METHOD

Profit and loss summary			Inventory		
137 000		178 000	OB	23 000	23 000
	CB	41 000	CB	28 000	

Check the opening balance in the inventory accounts, then follow the posting from the journal entries to the ledgers to ensure that you can see what is happening. Using both methods, \$41 000 is the balance of profit and loss summary to be transferred to retained profits, and the inventory balance to be carried forward to next period is \$28 000.



HOW'S YOUR UNDERSTANDING?

- 12B Granot Ltd uses the perpetual inventory method. At the beginning of the month, inventory costing \$145 890 was on hand. Purchases for the month totalled \$267 540 and cost of goods recorded as sold totalled \$258 310. At the end of the month, a count showed inventory costing \$152 730 to be on hand. What, if anything, was the inventory shortage for the month?

12.3 Inventory valuation and cost of goods sold

Inventory accounting, like accounting for other current assets, uses a modified version of the standard historical cost valuation basis: lower of cost and net realisable value (i.e. what the asset can be sold for). Because inventory is expected to be turned into cash (sold), or otherwise consumed within the next year, it is a current asset. Moreover, generally accepted accounting principles require that any impairment in the asset's value be recognised in the period in which the impairment occurred – not later, when the asset is sold. Net realisable value is used only if it is lower than cost, so the historical cost basis is departed from only in one direction, down, if that is needed.

LO5

LO6

In this section, we briefly review how to determine cost. Inventory accounting affects both the balance sheet (inventory valuation) and the income statement via the expense recognised for the use of inventory (COGS expense).

Cost of inventory

It is easy to say that the total cost of inventory is just the sum of quantity times unit cost for all the inventory items. However, in order to work out the cost of each individual unit, we may need to get further information. Under accounting standards, the cost of inventory includes all the costs of purchase, costs of conversion and other costs incurred in bringing inventory to its current location and condition. This means that the cost of inventory includes, in addition to the purchase price, any taxes on the purchase as well as transportation and

handling costs. Costs of conversion are relevant if inventories are manufactured and includes costs of production such as labour and overheads. Costs that are not included in the cost of inventory include administrative costs, selling costs and costs of storage. Now that we have worked out the cost of inventory, we can consider inventory cost flow assumptions.

Inventory cost flow assumptions

Inventory costs are very simple to calculate when the cost of an item in inventory remains constant. However, assume that an item was purchased at various times throughout the year. Take an example where there was an opening inventory of 200 items that cost \$50 each. During the year, the price steadily increased, with subsequent purchases of 100 at \$51, 200 at \$53, 200 at \$54 and 100 at \$55. All the items were stored together, and 400 were removed from inventory for sale during the year. What is the COGS and what is the value of closing inventory? It all depends on whether the items removed were those that cost \$50, \$51, \$53, \$54 or \$55. Imagine the trouble caused by keeping track of the cost of each and every item removed from inventory.

In practice, the actual cost of individual inventory items is tracked often for high-value items (e.g. houses, motor vehicles, aircraft and expensive jewellery) that can be identified by serial numbers and other methods. This method is often called specific identification. Again, with advances in technology this is now less costly to implement and, therefore, may be used in more situations.

Because, for the most part, it is not worthwhile or even possible to keep track of the cost of individual items in inventory, most companies calculate their balance sheet inventory cost and COGS expense by assuming some flow of costs through the business. We don't want to have to know exactly which ones are on hand, or which have been sold, so we make assumptions.

To illustrate the effects of different assumptions, we will first use a simple example based on the periodic inventory control method, in which no records are kept of changes in inventory levels during the accounting period. If the perpetual control method were used, the calculations would be more complex (you'll see those later in the Meeix Ltd example in section 12.5). The following scenario involves inventory purchased for resale (such as a retailer would purchase), but the ideas work just as well for inventory manufactured by a company. In that case, cost of purchases is replaced by cost of goods manufactured. Consider the following data:

- Inventory at beginning of period: 120 units costing \$2 each.
- Purchases during period (in the order in which they happened): 100 units costing \$3 each and 110 units costing \$4 each.
- Sales during period (based on an ending inventory of 150 units): 180 units.

The *cost of goods available for sale* equals the cost of the opening inventory plus the cost of those purchased (or manufactured). So we have $120 \times \$2 = \240 , plus $100 \times \$3 = \300 , plus $110 \times \$4 = \440 , for a total cost of goods available of \$980.

Our problem is how to allocate the \$980 between the income statement for the period (COGS expense) and the balance sheet at the end of the period (ending inventory asset). There are three common inventory cost flow assumptions that are used around the world:

- First in, first out (FIFO) assumes that the first items acquired are the first ones sold and, therefore, that any ending inventory on hand consists of the most recently acquired units (recent costs on the balance sheet, older costs in COGS expense).
- Weighted average cost (AVGE) assumes ending inventory and COGS are composed of a mixture of old and new units. A cost per unit is calculated by dividing the total dollar value of available inventory by the total number of units available.
- Last in, first out (LIFO) assumes the last items acquired are the first ones sold, i.e. the opposite of FIFO, saying that any inventory on hand consists of the oldest units (older costs on the balance sheet, recent costs in COGS expense).

Exhibit 12.1 shows the three different assumptions of inventory cost flow. *In each case, the sum of the ending balance sheet asset valuation and the COGS expense is \$980.* The different cost flow assumptions just allocate this available cost differently between the balance sheet valuation and the expense in the income statement.

EXHIBIT 12.1

INVENTORY COST FLOW ASSUMPTIONS

FIFO, AVGE AND LIFO

Method	Ending inventory asset	COGS expense
FIFO	$(110 \times \$4) + (40 \times \$3) = \$560$	$120 \times \$2 + 60 \times \$3 = \$420$ or $\$980 - \$560 = \$420$
AVGE	$150 \times \$2.97 = \445 Average unit cost = $\$980/330$ units $= \$2.97$ (rounded)	$180 \times \$2.97 = \535 or $\$980 - \$445 = \$535$
LIFO	$(120 \times \$2) + (30 \times \$3) = \$330$	$110 \times \$4 + 70 \times \$3 = \$650$ or $\$980 - \$330 = \$650$

12.4 More about inventory cost flow assumptions

The above example introduced three cost flow assumptions – FIFO, AVGE and LIFO – and related to the periodic method. We know from section 12.1 that companies can use the periodic or perpetual inventory control methods. If we put the three cost flow assumptions against the two control methods, we get the following:

Assumption	Periodic control	Perpetual control
FIFO	FIFO	FIFO
AVGE	Weighted average	Moving weighted average
LIFO	Periodic LIFO	Perpetual LIFO

FIFO is not affected by the inventory control method because it just assigns the most recent cost to whatever is on hand. The other two methods are affected by the control method, because they depend on what we know about what happened to inventory levels during the period. This gives us five potential methods: FIFO and two versions each of AVGE and LIFO. (There is a sixth, specific identification, as you have already seen. Further, at the end of this section, one additional method is mentioned briefly.) In Australia, the LIFO method is not allowed to be used for either financial reporting or tax purposes. However, we will include it because the contrast with FIFO and moving average may help you understand the latter ones, and because LIFO is very common in the United States, so you will see it mentioned in many US financial statements.

Let's examine these assumptions and their interaction with internal control methods further. Remember that, because each assumption allocates the available inventory cost between the inventory asset and the COGS expense differently, the choice of assumption has an effect on both the income statement and the balance sheet. The significance of the effect depends on how much purchase (or manufacturing) costs per unit rise or fall during the period. If there is little change in these costs, the various methods will show very similar results.

FIFO assigns the more recent purchase costs to the inventory asset account and, therefore, older costs to the COGS expense account. It is used because it is convenient and produces inventory asset values that are close to current costs, which seems to many people to be appropriate for a current asset. For example, suppose there are 620 boxes of chocolates on hand at 30 June, and recent purchase invoices showed the following costs: 29 June, 260 boxes at \$3.20; 14 June, 310 boxes at \$3.35; 1 June, 210 boxes at \$3; and so on. The FIFO ending inventory is found by starting with the most recent purchase and going back in time until all the ones on hand are accounted for (working on assumption, since we do not really know when any particular box was purchased). So the FIFO cost here would be:

$$(260 \times \$3.20) + (310 \times \$3.35) + ([620 - 260 - 310 = 50] \times \$3) = \$2020.50$$

A few key facts about FIFO:

- FIFO is the most popular cost flow assumption for inventories for larger Australian companies.
- FIFO is considered appropriate for a current asset by many people because it is the most reasonable method of physically moving inventory, especially inventory that is perishable or subject to changes in style or features, such as groceries, clothing and other retail products. Picture a shelf in a grocery store. FIFO assumes that new stock is placed behind older stock on the shelf, so that the inventory keeps moving forward on the shelf. In Australia, accounting standards require that the cost flow reflects the underlying physical flow of the goods in question. This is not the case in the United States.

The AVGE method assigns the available cost equally to the inventory asset and to COGS expense. In the example in Exhibit 12.1, both inventory asset and COGS used the same \$2.97 average cost per unit. Note that when prices are rising, average cost shows a higher COGS (lower profit) and lower inventory balance sheet figures than the FIFO method.

LIFO is, on the face of it, a strange valuation method. It assumes that the newest items are sold first and, therefore, that the oldest are the ones left on hand.

A few key facts about LIFO:

- LIFO is used in the United States for one very practical reason: it is an allowable method for income tax purposes. However, it can only be used for tax purposes if it is also used for accounting purposes. In a period of rising purchase costs, which is often the case, it produces a higher COGS expense and a lower inventory asset value compared with FIFO or AVGE. Therefore, LIFO also produces lower profit and lower income tax, if it can be used for tax purposes.
- As noted earlier, it is not permissible to use LIFO in Australia for accounting or taxation purposes. In some countries, such as Canada, it is an allowable method for accounting but not for income tax purposes, so a Canadian company using it for the financial statements would have to compute inventory values all over again using one of the other methods when doing its income tax return.
- It can also be argued that LIFO matches revenues with expenses more adequately than the other two methods do. For example, if a company changes its selling prices as its purchase costs change, its revenues reflect recent price changes, and it then seems appropriate to deduct the more recent purchase costs as COGS expense against the revenues. The trouble is that LIFO produces inventory asset values that are based on older purchase costs, and this can substantially underestimate the asset value.
- LIFO is affected by whether its amounts are determined using the periodic or perpetual control methods, as the following example will show.

12.5 An example: Meeix Ltd

LO7 Among the products Meeix Ltd purchases and sells is Gloop. Meeix Ltd began last year with 1000 units of Gloop on hand at a cost of \$4 each, and during the year its purchase and sales records showed the following.

Date	Units purchased	Units sold	Units on hand	Purchase price
Jan. 1			1 000	\$4
Feb. 15		350	650	
Mar. 20	600		1 250	\$5
Apr. 30		750	500	
Sept. 12	800		1 300	\$6
Dec. 11		200	1 100	
	1 400	1 300		

The chart in Figure 12.1 shows how the quantities of Gloop changed during the year.

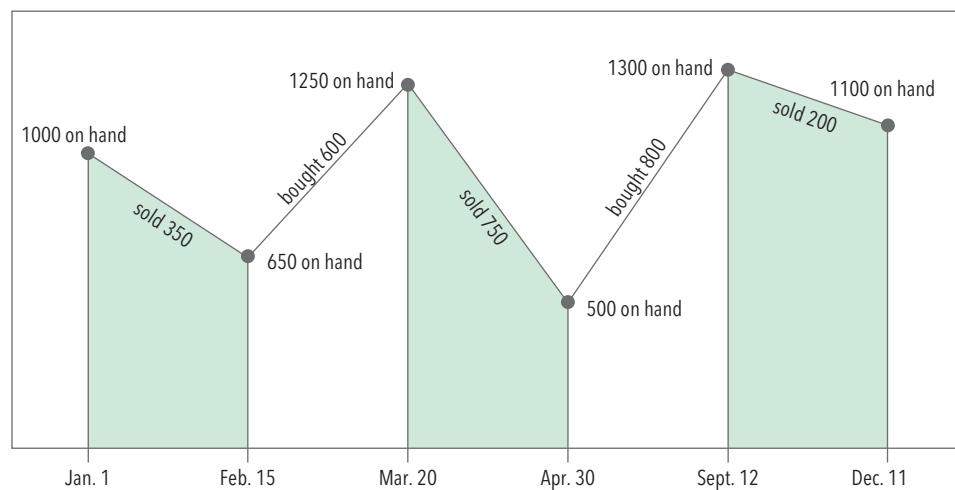


FIGURE 12.1 Inventory balances and changes, Meeix's Gloop

Inventory under different cost flow assumptions

Note that the cost flow assumptions would identify the ending inventory's 1100 units as follows.

FIFO

- $1100 = 800$ most recently bought + 300 of those bought 20 March.

AVGE

- Annual weighted: $1100 =$ a proportionate mixture of those on hand at the beginning and those bought 20 March and 12 September.
- Moving: the first average is the 1250 on hand at 20 March, a proportionate mixture of those on hand at beginning + those bought 20 March; second average, the 1300, is a proportionate mixture of the first average (on hand 30 April) and those bought 12 September.

LIFO

- Periodic: the ups and downs during the year are not known (no records kept), so the $1100 = 1000$ on hand at beginning + 100 bought 20 March.
- Perpetual: during the year, the inventory hit a minimum of 500, so that's all of the beginning items that could still be on hand at the end; therefore, $1100 = 500$ from beginning + 600 bought 12 September.

Now we can go on with the calculations. Regardless of the cost flow assumption used, we know that the beginning inventory cost is \$4000 and that purchases costing \$7800 ($600 \times \$5 + 800 \times \6) were made. Available cost, therefore, is the sum of beginning inventory and purchases, which is \$11 800. Consequently, as long as the historical cost basis of accounting is used, any inventory cost allocation method must produce \$11 800 as the sum of the ending inventory asset and COGS expense. You might think of it this way:

$$\begin{aligned} \text{Available for sale} &= \text{Gone} + \text{Still here} \\ \text{Beginning inventory} + \text{Purchases} &= \text{COGS expense} + \text{Ending inventory} \end{aligned}$$

The left side equals \$11 800, so the right side must result in the same total. This gives us ways to check our calculations. If we calculate the COGS expense and the ending inventory asset cost separately, they must add up to \$11 800. As a short cut, we can calculate either the expense or the asset value, and deduce

the other by deducting it from \$11 800. This is easier than doing it twice, but the calculations below will include both the expense and the asset so that you can see how it all works.

Based on the patterns shown in Figure 12.1, and the summary of each method's assumption about the ending inventory quantity, here are the calculations for ending inventory cost and COGS. In each case, we know ending inventory consists of 1100 units and COGS consists of 1300 units (as calculated at the start of this section).

FIFO METHOD

	\$
Ending inventory cost: $(800 \times \$6) + (\text{remaining } 300 \times \$5)$	6 300
COGS expense: $(1000 \times \$4) + (\text{remaining } 300 \times \$5)$	<u>5 500</u>
	<u>11 800</u>

Alternatively, the calculations can be done as follows. Note the perpetual calculations are represented in this section using inventory cards (sometimes called stock cards). You could set these up in Excel using a template similar to the one shown, with columns for units, dollar value per unit and total dollars for each of the purchases, the COGS and the ending inventory calculations. You can then automate some of the calculations for each line and the totals for COGS and ending inventory.

Date	Purchases	Cost of goods sold	Ending inventory	\$
				\$
Jan. 1			1 000 at \$4 = 4 000	
Feb. 15		350 at \$4 = 1 400	650 at \$4 = 2 600	
Mar. 20	600 at \$5 = 3 000		650 at \$4 = 2 600	
			600 at \$5 = 3 000	
Apr. 30		650 at \$4 = 2 600		
		100 at \$5 = 500	500 at \$5 = 2 500	
Sept. 12	800 at \$6 = 4 800		500 at \$5 = 2 500	
			800 at \$6 = 4 800	
Dec. 11		200 at \$5 = 1 000	300 at \$5 = 1 500	
			<u>800 at \$6 = 4 800</u>	
Total		<u>5 500</u>	<u>6 300</u>	

AVGE METHOD

Annual weighted average

	\$
Average cost = $\$11\ 800/(1000 + 600 + 800) = \4.917 (rounded)	
Ending inventory cost: $1100 \times \$4.917$	5 408
COGS expense: $1300 \times \$4.917$	<u>6 392</u>
	<u>11 800</u>

Moving weighted average

The moving average works the same way as annual weighted average, but is recalculated after each purchase, weighted in accordance with the inventory on hand at that point.

Date	Purchases	COGS	Ending inventory
	\$	\$	\$
Jan. 1			1 000 at \$4 = 4 000
Feb. 15		350 at \$4 = 1 400	650 at \$4 = 2 600
Mar. 20	600 at \$5 = 3 000		1 250 at \$4.48* = 5 600
Apr. 30		750 at \$4.48 = 3 360	500 at \$4.48 = 2 240
Sept. 12	800 at \$6 = 4 800		1 300 at \$5.415 = 7 040
Dec. 11		200 at \$5.415 = <u>1 083</u>	1 100 at \$5.415 = 5 957
		<u>5 843</u>	

*The new average can be calculated by:

1. Adding the dollar value of inventory available before purchase (of \$2600) to the purchased value (of \$3000) giving \$5600.
2. Adding the units available before purchase (650 units) to the purchased units (600 units), in this case totalling 1250 units.
3. Dividing the new total dollar value available by the new number of units available, in this case 5600/1250 resulting in a new average of \$4.48 per unit.

LIFO METHOD

Periodic basis

	\$
Ending inventory cost: (1 000 × \$4) + (remaining 100 × \$5)	4 500
COGS expense: (800 × \$6) + (remaining 500 × \$5)	<u>7 300</u>
	<u>11 800</u>

Perpetual basis

The perpetual records allow us to determine whether it is reasonable to assume that all the original 1000 units are still on hand. In this example, it is not reasonable, because at one point the inventory was down to 500 units, so that 'layer' of cost has been partly used up. The calculation reflects the cost layer information available from the records.

Date	Purchases	COGS	Ending inventory
	\$	\$	\$
Jan. 1			1 000 at \$4 = 4 000
Feb. 15		350 at \$4 = 1 400	650 at \$4 = 2 600
Mar. 20	600 at \$5 = 3 000		650 at \$4 = 2 600
			600 at \$5 = 3 000
Apr. 30		600 at \$5 = 3 000	
		150 at \$4 = 600	500 at \$4 = 2 000
Sept. 12	800 at \$6 = 4 800		500 at \$4 = 2 000
			800 at \$6 = 4 800
Dec. 11		200 at \$6 = 1 200	500 at \$4 = 2 000
		<u>6 200</u>	<u>600 at \$6 = 3 600</u>
			<u>5 600</u>

The following summarises the Meeix example's results.

Cost method	Ending inventory asset	COGS expense	Total cost available
	\$	\$	\$
FIFO	6 300	5 500	11 800
AVGE			
Annual	5 408	6 392	11 800
Moving	5 957	5 843	11 800
LIFO			
Periodic	4 500	7 300	11 800
Perpetual	5 600	6 200	11 800

This example illustrates a result that is common when using these methods. In a period of rising purchase prices, as was found here:

- FIFO will have the highest inventory asset value and lowest COGS expense (and therefore the highest net profit).
- LIFO will have the lowest inventory asset value and highest COGS (and therefore the lowest net profit).
- AVGE tends to be between the other two in asset values, COGS and net profit.

If *purchase prices are falling*, the positions of FIFO and LIFO reverse, with FIFO tending to have the lowest net profit and LIFO the highest. The AVGE method tends, again, to be between the other two. While falling prices are less common, they can occur in some industries (such as computer software and some electronics). The more cost prices rise (or fall) during a period, the larger the differences will be between the methods.

Let's assume Meeix is using FIFO for its inventory of Gloop. What would be the effects on Meeix's financial statements if it changed to one of the other three methods, beginning this year (i.e. without changing past years and so without changing the \$4 cost of the 1 January inventory)? Meeix's income tax rate is 30 per cent.

If it changed to moving weighted average:

- the COGS expense would go up by \$343 (\$5843 – \$5500), so net profit would decline by 70 per cent of that, or \$240
- income tax expense and liability would go down by the other 30 per cent, or \$103
- there would be no immediate effect on cash or cash flow.



HOW'S YOUR UNDERSTANDING?

12C RST Ltd uses a perpetual inventory system. It has opening inventory of 200 items, which cost \$10 each. It purchased another 500 items at \$12 each and 300 items at \$13 each during the period. It has 100 items in closing inventory. What are the closing inventory valuation and the COGS for the period using FIFO and LIFO?

12.6 Lower of cost and net realisable value rule

LO8 The lower of cost and net realisable value rule states that the value of inventory should be written down from the cost price to the market price in situations where market is below cost. In Australia, market is defined as net realisable value. Net realisable value is the estimated selling price less costs to complete (such as putting it in a box) or sell the items. Again, the focus is on items whose net realisable value is *below cost*, so we are concerned with items whose selling prices are falling or items that have been damaged, have become

obsolete, or are no longer in style so we can't sell them for what we thought we could. The measurement of the lower of cost and net realisable value should be done on an item-by-item basis. When this is not possible because of the large number of homogeneous items having an insignificant cost, the rule can be applied for a group of items.

Basically, to calculate the lower of cost and net realisable value, we just take the cost of the items and match those costs against the net realisable value and use the lower as the balance sheet inventory value. In practice, companies usually focus mainly on items whose values are likely to be impaired (as might be identified during the physical count or from knowledge of changing sales prices), rather than calculating net realisable value for everything.

For example, if inventory that costs \$1000 had a net realisable value at year-end of \$800, it would be necessary to write down an asset (inventory) and increase an expense (inventory write-down expense). The journal entry would be:

		\$	\$
DR	Inventory write-down expense	200	
CR	Inventory		200

Note that the decision to write down the inventory has resulted in a \$200 reduction in profit for the period. You can imagine that, if this figure were large, managers might not want to write down the value of inventory. Disputes between management and auditors can arise over these issues.

Consider a company which has three products: X, Y and Z.

Item type	X	Y	Z
Quantity	100	300	200
Cost	\$5	\$9	\$10
Net realisable value	\$7	\$8	\$16

The inventory value under lower of cost and net realisable value is \$4900 ($100 \times \$5 + 300 \times \$8 + 200 \times \10). In this case, inventory of \$300 would be written down because Y is presently included in the records at \$2700 ($300 \times \9) but its net realisable value is \$2400 ($300 \times \8).



HOW'S YOUR UNDERSTANDING?

- 12D** Cricket Cards Ltd sells boxes of cricket cards. The following information relates to transactions concerning inventory for the year 1 January 2022 to 31 December 2022.

Date	Purchased	Sold	Balance
1/1/22			110 @ \$5
10/2/22	80 @ \$6		
14/4/22			60
9/5/22	110 @ \$7		
24/7/22			120
21/10/22	100 @ \$8		
12/11/22			90

- (i) Assuming that a perpetual system of inventory flow is used, calculate the COGS and closing inventory for both FIFO and LIFO.
- (ii) You estimate that in the current market the net realisable value of cricket cards is \$5 per box. Do you need to make any adjustments to either of your calculations above to apply the lower of cost and net realisable value rule? If so, calculate the adjustment.

12.7 Standard costs

LO7 One other popular method for valuing inventory, which is used in Australia, is standard costs. You will learn about this method in detail if you take a course in management accounting or cost accounting. It is applicable to inventories manufactured by the company, and uses estimated costs based on standard production costs and volumes. It is a predetermined cost that is applied to all movements in inventories, including opening and closing balances, purchases and cost of sales. For example, if the standard cost is \$20 and the company sold 2000 units during the year, and had 300 in stock at year-end, the COGS would be \$40 000 ($\20×2000) and the closing inventory would be \$6000 ($\20×300).

12.8 Disclosure of inventory accounting policies

LO9 Accounting standards require that the financial reports disclose the value of inventory split between current and noncurrent assets and further split into the following classes: (a) raw materials and stores, (b) work-in-progress and (c) finished goods. In addition, it requires disclosure of the general basis for inventory valuation (specific identification, average, FIFO or standard cost) and the methods used to assign costs to inventory quantities (such as how overhead is allocated to inventories that are manufactured).

An example of an inventory policy as given in the note covering statements of accounting policies, is as follows:

CSR LIMITED

Inventories: are valued at the lower of cost and net realisable value. Net realisable value is the estimated selling price in the ordinary course of business less the estimated cost of completion and costs necessary to make the sale. Costs included in inventories consist of materials, labour and manufacturing overheads which are related to the purchase and production of inventories. The value of inventories is derived by the method most appropriate to each particular class of inventories. The major portion is valued on either a first-in-first-out or average cost basis.

Source: CSR Limited, Annual Report 2021, p. 85.

This disclosure shows that, in practice, FIFO and weighted average are commonly used to determine the cost of inventory. Within the one organisation, more than one method can be used and it may vary between the type of product or the class of inventories (raw material, work-in-progress or finished goods). The disclosures refer to the fact that inventories are valued at the lower of cost and net realisable value.

For manufacturing firms, overhead costs are reported in the cost of goods manufactured. Manufacturing costs are beyond the scope of this book, and will be discussed in a management accounting subject.

12.9 Managers and the valuation of inventory

LO10 Managers have to make important decisions about the inventory control system they wish to implement. While, for control purposes, the perpetual method has advantages over the periodic method, it has a higher cost, and that cost will depend on the sophistication of the inventory recording system.

The valuation of inventory is important to managers because it affects COGS (and therefore profit) and the balance sheet – via the value of inventory. Both profit figures and balance sheet figures affect managers' performance reports. Therefore, managers need to understand the effect, across time, of different cost flow assumptions on financial statements.

Managers also need to make some important judgements related to inventory valuation; for example, which cost flow assumption most closely represents the actual physical flow? What inventory items have a net realisable value that is lower than cost?

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Periodic and perpetual inventory control calculations

You are the senior accountant for a shoe wholesaler that uses the periodic inventory method. You have determined the following information from your company's records, which you assume is correct:

- a Inventory of \$246 720 was on hand at the start of the year.
- b Purchases for the year totalled \$1 690 000. Of this, \$1 412 000 was purchased on account; that is, accounts payable was credited for this amount at the time of the purchase.
- c The ending balance in accounts payable was \$47 500 higher than the opening balance.
- d A year-end inventory count revealed inventory of \$324 800.

Required:

- 1 Calculate COGS according to the periodic inventory method.
- 2 Assume now that your company uses the perpetual method of inventory control, and that your records show that \$1 548 325 of inventory (at cost) was sold during the year. What is the adjustment needed to correct the records, given the inventory count in item (d) above? What might the need for this adjustment indicate about company operations?

PRACTICE PROBLEM B

LIFO, FIFO and AVGE inventory cost calculations

The following purchases of inventory were made by Anvil Ltd in April:

Date	Number of units purchased	Per unit amount	Total cost
		\$	\$
Apr. 2	100	5	500
Apr. 15	200	6	1200
Apr. 23	<u>50</u>	7	350
	<u>350</u>		

Sales of inventory during April were:

Date	No. of units sold
Apr. 6	70
Apr. 13	120
Apr. 18	<u>200</u>
	<u>390</u>

Anvil's inventory on 1 April consisted of 150 units valued at \$4 each.

- 1 Calculate COGS for April, using:
 - a LIFO
 - b FIFO
 - c weighted annual average inventory cost flow assumptions.Assume that Anvil uses a periodic inventory control system.
- 2 Calculate ending inventory values under each of the three methods above as at 30 April.
- 3 Suppose that the market price for these units was only \$5 per unit at 30 April, and the lower of cost or market valuation is applied to each unit individually. Redo question 2.
- 4 Redo questions 1 and 2, assuming that Anvil uses a perpetual inventory control system.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 Explain the difference between the periodic inventory system and the perpetual inventory system.
- 2 How has technology influenced the choice of a periodic or perpetual inventory system?
- 3 How is COGS determined under both the perpetual and periodic inventory systems?
- 4 Compare the periodic and perpetual systems as a control device.
- 5 Under what circumstances will the perpetual and periodic inventory systems give the same COGS figure? How can this occur if one method treats purchases as an asset and the other method treats purchases as an expense?
- 6 How is inventory shortage detected under the perpetual and periodic inventory methods?
- 7 What is included in the cost of inventory? Provide examples of what is not included in the cost of inventory?
- 8 What does the term 'inventory cost flow assumption' mean?
- 9 Explain the impact on the financial statements of using FIFO, weighted average and LIFO. When would the three methods give similar profit figures? When would they give identical profit figures?
- 10 Explain the concept of lower of cost and net realisable value for inventory.
- 11 Why is the valuation of inventory important to managers?
- 12 Are inventories always current assets?
- 13 If management overstated the valuation of closing inventory, would it affect profit for the year?

PROBLEMS

PROBLEM 12.1

FIFO and LIFO inventory cost calculations

The following transactions occurred in relation to the widget inventory of Ruby Ltd during the month of July.

Date	Transaction
July 1	Began operations by purchasing 300 widgets for \$6.00 each
8	Sold 50 widgets for \$7.00 each
12	Sold 150 widgets for \$7.00 each
13	Bought 500 widgets for \$5.00 each
20	Sold 400 widgets at \$6.00 each
22	Sold a further 100 widgets at \$5.50 each
24	Bought a further 200 widgets at \$4.00 each
29	Sold 150 widgets at \$5.00 each

Calculate the COGS and gross profit for July, assuming a perpetual inventory system is employed:

- 1 using FIFO
- 2 using LIFO

PROBLEM 12.2

Calculations for perpetual versus periodic inventory

Emerald Ltd uses a perpetual inventory control system. The following data are available:

	\$
Inventory on hand at the beginning of the year (100 000 units at \$5 cost each)	500 000
Purchases for the year (850 000 units at \$5 cost each)	4 250 000
Sales for the year (865 000 units at \$11 price each)	9 515 000
Inventory on hand at end of the year (70 000 units at \$5 cost each)	350 000

- 1 Calculate the COGS expense for the year, based on the company's perpetual inventory system.
- 2 If the company had been using the periodic inventory method, what would the COGS expense for the year have been?
- 3 A perpetual system costs money to operate. Is it likely to be worthwhile for Emerald Ltd?

PROBLEM 12.3

Journal entries for perpetual and periodic inventory

The following information is taken from the accounting records of Topaz Ltd for year ended 30 June 2022:

	\$
Inventory 1 July 2021	30 000
Purchases (all credit)	110 000
Sales (all credit)	180 000
Inventory 30 June 2022	18 600
Operating expenses (all cash)	35 000
The company's mark-up is 50 per cent on cost	

- 1 Assuming all purchases and sales were in single transactions, prepare summary journal entries and closing entries using:
 - a perpetual inventory
 - b periodic inventory.
- 2 Prepare income statements for the year ended 30 June 2022 using both inventory systems.

PROBLEM 12.4

Effects of change from perpetual to periodic inventory

Frogmorton Fashions began the period with inventory costing \$30 000. During the period, \$125 000 of additional inventory was purchased. At the end of the period, a physical count showed that inventory costing \$38 000 was on hand. The firm's perpetual inventory system showed that inventory costing \$114 000 had been sold during the period.

The general manager says, 'It's a bother keeping track of our inventory the way we do – our perpetual system requires continuous attention to inventory costs. What if we just used the periodic method? What difference would it make?' Give your reply.

PROBLEM 12.5

COGS/closing inventory

RUV commenced operations on 1 June 2022 selling one type of shirt. The company uses FIFO (first in, first out) and perpetual inventory control. The June inventory and sales records for the shirts were as follows:

Date	Purchase price unit	Units purchased	Units sold	Selling price per unit	Units on hand
June 1	\$11	1 500			1 500
10	\$12	900			2 400
12			300	\$20	2 100
17	\$14	600			2 700
23			1 800	\$20	900
27	\$13	1 500			2 400
29			700	\$22	1 700
30	\$15	200			1 900

- 1 Calculate COGS for the month ended 30 June 2022.
- 2 Calculate the cost of ending inventory as at 30 June 2022.
- 3 Calculate gross profit for the month ended 30 June 2022.
- 4 Assume that on 30 June, a total of 400 units (not 200 units) were purchased for \$17 each. Calculate the change in gross profit for the month ended 30 June 2022, based on this assumption.

PROBLEM 12.6

Cost flow assumptions

The BabyStyle Company is a retail firm buying and selling a single product: prams for babies. A system of perpetual inventory is employed. During the six months ended 30 June 2022 the inventory activity was as follows:

Purchases	
January	commenced business, buying 20 units at \$5 per unit
March	30 units at \$6 per unit
May	35 units at \$7 per unit
Sales	
February	15 units at \$10 per unit
April	30 units at \$11 per unit
June	30 units at \$12 per unit

- 1 Calculate the COGS for the six months and the closing balance of inventory, assuming:
 - a LIFO
 - b FIFO
 - c Moving average.
- 2 What is the gross profit for the period, assuming:
 - a LIFO?
 - b FIFO?
 - c Moving average?
- 3 Briefly describe a cost-based inventory valuation method other than LIFO, FIFO or Weighted/Moving average cost.
- 4 Compare the effects of LIFO and FIFO on balance sheet valuation of inventory and net profit in periods of:
 - a rising prices
 - b falling prices.

PROBLEM 12.7

FIFO, LIFO, net realisable value

The following data relate to Fay Ltd, a company that buys and sells only one product:

Date	Transaction
May 1	1000 units on hand at \$6 per unit
2	Purchased 1200 units for \$7 per unit
11	800 units were sold for \$7.50 per unit
22	900 units were purchased for \$7.50 per unit
30	1100 units were sold for \$8.00 per unit

- 1 Calculate the cost of ending inventory and the COGS, assuming:
 - a a perpetual system using the LIFO cost flow assumption
 - b a periodic system using the weighted average method.
- 2 Assume that, at the end of the month, you discover that the net realisable value of each item is \$6.50. Calculate and prepare the journal entry to adjust inventory records, if required, assuming:
 - a perpetual system using the LIFO cost flow assumption
 - b periodic system using the weighted average method.

PROBLEM 12.8

FIFO and LIFO inventory cost calculations

The following information is taken from the accounting records of Golden Ltd for the year ended 31 December 2022. Golden Ltd uses a perpetual inventory system.

		Units	Purchase price per unit	Selling price per unit
January 1	Opening inventory	2 000	\$56	
March 10	Purchases	2 200	\$55	
June 25	Sales	1 800		\$60
August 30	Purchases	1 800	\$52	
October 5	Sales	2 500		\$65
November 26	Purchases	3 000	\$50	
December 31	Sales	2 000		\$63

Determine the cost of ending inventory as at 31 December 2022 and the cost of goods sold and gross profit for the year ended 31 December 2022 assuming:

- 1 FIFO
- 2 LIFO.

PROBLEM 12.9

FIFO and LIFO inventory cost calculations

The following transactions relate to a computer game sold by Wiley Louvres Ltd for the period 1 January to 31 December 2022:

Date	Transaction
January 1	Beginning inventory - 4 units @ \$150
March 3	Purchased 5 units @ \$160
April 9	Sold 6 units
May 10	Purchased 5 units @ \$165
August 22	Sold 4 units

- 1 Determine the cost of ending inventory as at 31 December 2022 and the COGS for the year ended 31 December 2022, assuming:
- a a periodic system and the FIFO method
 - b a periodic system and the LIFO method
 - c a perpetual system and the LIFO method
 - d a perpetual system and the FIFO method.
- Show supporting calculations for each case.
- 2 As the above data show, no units of the computer game were sold in the last four months of the year. The marketing manager is concerned that the cost of the remaining games will not be recovered. Explain what effect, if any, there would be on the financial statements if the following occurred:
- a The net realisable value of the game, as at 31 December, was estimated at \$152 per unit and LIFO was used in conjunction with the perpetual system.
 - b The net realisable value of the game, as at 31 December, was estimated at \$155 per unit and FIFO was used in conjunction with the periodic system.
 - c The net realisable value of the game, as at 31 December, was estimated at \$152 per unit and LIFO was used in conjunction with the periodic system.
- Show calculations to support your answers.

PROBLEM 12.10

Inventory policies

The disclosures with respect to inventory are shown for two companies. They were extracted from Note 1 of the financial statements describing accounting policies.

Company A

At balance date, all inventories on hand or in transit are valued at the lower of cost and net realisable value. Cost is determined using the weighted average cost method, after deducting any purchase settlement discount, and including logistics expenses incurred in bringing the inventories to their present location and condition.

Company B

Inventories, including work in progress, are valued at the lower of cost and net realisable value. Cost is determined principally on a first in, first out basis and, in the case of manufactured goods, includes direct materials, labour and production overheads.

- 1 What are the main differences in accounting policies for inventory between the two companies?
- 2 If all other things were equal (such as same sales or same expenses), which company would have the higher profit for the year and the higher inventory figure?

PROBLEM 12.11

Analyse various possible inventory costing policies

Yang Ltd has been in business for three years and pays income tax at 30 per cent. The company manages its inventories well, so there are no significant inventories for which cost is less than net realisable value. Here are the company's inventory asset and COGS expense for the past three years, computed under each of three methods:

	2022 \$	2021 \$	2020 \$
FIFO			
Ending inventory	112 000	148 000	115 000
COGS expense	636 000	867 000	585 000
AVGE			
Ending inventory	108 000	126 000	106 000
COGS expense	618 000	880 000	594 000

>>

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LIFO

Ending inventory	104 000	118 000	92 000
COGS expense	614 000	874 000	608 000
Purchases in each year	600 000	900 000	700 000

- 1 Determine the inventory cost policy that would produce the highest and lowest profit in each year and calculate the effect on net profit of choosing the former over the latter.
- 2 Given the variation of results you observed in question 1, how should a company choose its inventory cost policy?

PROBLEM 12.12

Inventory cost and market calculations

Winedark Sea Ltd sells prints of classic paintings. The prints are done on expensive paper and are quite costly. Pricing the prints to sell is hard because the popularity of a print is difficult to predict. Sometimes prints don't sell well at all and are then disposed of in bulk for use in hotels and motels.

Here are data on two prints:

	Print X		Print Y	
	Units	Cost per unit	Units	
		\$		\$
Inventory, 1 January 2022	4	340	11	500
Purchases during 2022:				
January–June	10	350	25	480
July–December	15	330	30	510
Sales during 2022	23		38	

- 1 Calculate the following:
 - a Inventory cost, 31 December 2022, for Print X, FIFO basis
 - b COGS, 2022, for Print Y, AVGE basis
- 2 Print Y hasn't sold since September. No one seems to like it any more. An out-of-town hotel has offered \$100 for each Print Y that Winedark has left, if Winedark will pay the \$10 per print shipping cost. What amount would you suggest be used for the inventory of Print Y on the 31 December 2022 balance sheet? Why?

PROBLEM 12.13

Inventory write-down

Due to increased competition, assume a wine producer has to write down its premium red wines by \$40 million. In a stock count it also finds many cases of white wine (valued at \$3 million) which are past their use-by date and needs to destroy this wine.

- 1 What would be the journal entry for the write-downs?
- 2 Why would a write-down in inventory lead to a possible decline in share price?

CASES

CASE 12A

Woolworths Limited

Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 What is the value of inventory as recorded on the balance sheet in the 2021 financial statements?
- 2 Would you expect Woolworths Limited to use a perpetual or periodic method of inventory valuation?

- 3 Does the company apply the lower of cost and net realisable value rule? Where is this noted?
- 4 What cost flow assumptions are used to value inventory?

CASE 12B**Inventory and fraud**

Inventory is an asset that is commonly subject to fraud. In one famous case in the United States, managers used fictitious inventory purchases to perpetuate a massive inventory fraud. MiniScribe Corporation was a company that manufactured and sold computer equipment. The fraud involved placing bricks in the boxes designed for merchandise, shipping them to customers and recording a sale when the box was shipped.

- 1 What would be the effect on the income statement and the balance sheet of shipping bricks and recording those shipments as sales?
- 2 Would this fraud be effective in the long run?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

12A Almost certainly you will find they use perpetual. If you ask them if they have a certain book they will check in their computer inventory records. The reasons for this include better reordering and control of theft.

12B $\$145\,890 + \$267\,540 - \$258\,310 = \$155\,120$; that is, \$155 120 should be on hand. This is compared to the count of \$152 730 and you can see that there is a shortage of \$2390.

12C FIFO: closing inventory $100 \times 13 = \$1300$; COGS $200 \times 10 + 500 \times 12 + 200 \times 13 = \$10\,600$.
LIFO: closing inventory $100 \times 10 = \$1000$; COGS $100 \times 10 + 500 \times 12 + 300 \times 13 = \$10\,900$.

12D (i) Perpetual FIFO:

$$\text{COGS} = 60 \times \$5 + (50 \times \$5 + 70 \times \$6) + (10 \times \$6 + 80 \times \$7) = \$1590$$

$$\text{Closing inventory} = 30 \times \$7 + 100 \times \$8 = \$1010$$

Perpetual LIFO:

$$\text{COGS} = 60 \times \$6 + (110 \times \$7 + 10 \times \$6) + 90 \times \$8 = \$1910$$

$$\text{Closing inventory} = 110 \times \$5 + 10 \times \$6 + 10 \times \$8 = \$690$$

Useful tip: calculating that the total cost of goods available for sale was \$2600 allows checking that COGS + closing inventory equals \$2600.

- (ii)** The net realisable value is designed to prevent companies overstating their asset values and results in an adjustment to closing inventory. Therefore, under both FIFO and LIFO, closing inventory should be \$650 ($130 \times \5). FIFO closing inventory should be reduced by \$360 ($\$1010 - \650), LIFO by \$40 ($\$690 - \650).

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1 Cost of goods sold:

	\$
= Beginning inventory	246 720
+ Purchases	1 690 000
- Ending inventory	<u>(324 800)</u>
	1 611 920

- 2 If the correct COGS is \$1 548 325, this means that some of what appeared to have been sold was not. It was lost or stolen, or it strayed! The amount lost is \$63 595, which could be left in the COGS expense or could be shown separately, so that the COGS expense would be the accurate, smaller amount. Total expense would not be different; the perpetual method just allows it to be split into \$1 548 325 COGS and \$63 595

loss, which were lumped together under the periodic method. The need for the \$63,595 adjustment indicates that the company has what seems a serious problem somewhere: there are errors in the records, inventories are being lost somehow or there are more sinister things going on, such as employee theft.

PRACTICE PROBLEM B

- 1 a Flows of physical units:

Date	Purchases \$	Sales \$	Balance \$
Apr. 1			150
2	100		250
6		70	180
13		120	60
15	200		260
18		200	60
23	<u>50</u>	<u>—</u>	110
	<u>350</u>	<u>390</u>	

Available cost: $(150 \times \$4) + (100 \times \$5) + (200 \times \$6) + (50 \times \$7) = \$2650$

Cost of goods sold (periodic basis):

LIFO = most recently purchased 390 units

$$= (50 \times \$7) = (200 \times \$6) + (100 \times \$5) + (40 \times \$4)$$

$$= \$2210$$

or $= \$2650 - \text{ending inventory}$

$$= \$2650 - (110 \times \$4)$$

$$= \$2210$$

b FIFO = earliest purchased 390 units

$$= (150 \times \$4) + (100 \times \$5) + (140 \times \$6)$$

$$= \$1940$$

or $= \$2650 - \text{ending inventory}$

$$= \$2650 - [(50 \times \$7) + (60 \times \$6)]$$

$$= \$1940$$

c Weighted average = average of available cost

$$= 390 \times (\$2650 \div 500 \text{ units})$$

$$= \$390 \times \$5.30$$

$$= \$2067$$

or $= \$2650 - \text{ending inventory}$

$$= \$2650 - (110 \times \$5.30)$$

$$= \$2067$$

- 2 a Ending inventories (calculated in part 1):

$$\text{LIFO} = 110 \times 4 = \$440$$

$$\text{b FIFO} = (50 \times \$7) + (60 \times \$6) = \$710$$

$$\text{c Average} = (110 \times \$5.30) = \$583$$

- 3 a Using lower of cost or market: LIFO would not be affected, because its unit cost of \$4 is already below market.

b FIFO cost is above market, so the inventory value would be reduced to \$5 per unit, or \$550. The \$160 difference would be transferred to an expense account.

c Average cost is also above market, so the inventory value would also be reduced to \$550. The \$33 difference would be transferred to an expense account. (This would leave profit under FIFO and average cost the same, since both begin with the same inventory value ($150 \times \$4$) and end with the same value (\$550).)

4

	Ending inventory	COGS
a LIFO:		
Ending = $(60 \times \$4) + (50 \times \$7)$	\$590	
COGS = \$2650 – ending		\$2 060
b FIFO:		
Same as 1 and 2	\$710	\$1 940
c Moving average:		
First average: \$4		
Second average: $\frac{(150 \times \$4) + (100 \times \$5)}{150 + 100} = \$4.40$		
Third average: $\frac{(60 \times \$4.40) + (200 \times \$6)}{60 + 200} = \$5.63$		
Fourth average: $\frac{(60 \times \$5.63) + (50 \times \$7)}{60 + 50} = \$6.25$		
Ending: $110 \times \$6.25$	\$688	
COGS = \$2650 – ending		\$1 962

Noncurrent assets



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** calculate the cost of an asset (13.1)
- LO2** explain the concept of depreciation (13.2)
- LO3** calculate depreciation expense using different depreciation methods (13.3)
- LO4** explain how the different methods of depreciation have an impact on profit and the balance sheet (13.4)
- LO5** prepare journal entries for the purchase, sale and depreciation of equipment and demonstrate the impact of these events on the financial statements (13.5)
- LO6** prepare the accounting entries for asset revaluations (13.6)
- LO7** explain what is meant by impairment (13.7)
- LO8** identify the main types of intangible assets and the key accounting issues associated with intangible assets (13.8)
- LO9** develop a basic understanding of the concept of goodwill (13.9)
- LO10** understand the characteristics of a finance lease (13.10)
- LO11** identify the key judgements made by managers regarding noncurrent assets (13.11).

CHAPTER OVERVIEW

In this chapter, we will consider three major categories of noncurrent assets: property, plant and equipment; intangible assets; and goodwill. 'Property, plant and equipment' refers to long-term assets that are acquired by an organisation for use in the organisation, for more than one accounting period, for the production of goods and services. Examples in this class of assets include land, buildings, machinery, equipment, furniture, fittings and motor vehicles. Intangible assets are identifiable non-monetary assets that do not have a visible physical existence, unlike land, buildings, equipment and so on. Examples of intangible assets include patents, copyrights and internet domain names. Goodwill and intangible assets will be described later in the chapter.

13.1 The cost of an asset: basic components

LO1 The basic premise of historical cost valuation is to use the cost of an asset, at acquisition, to value that asset on the balance sheet. On the surface, this looks simple: you buy a truck for \$55 000 and value the truck at \$55 000. However, there is often more to the cost of an asset than just the simple invoice cost or direct cost. For example, when you purchase a big computerised manufacturing machine, it may cost you \$500 000 for the actual machine. But in order to use the machine, certain environmental conditions must exist, such as temperature control, a raised floor for wiring and a fire protection system. Therefore, a section of the factory must be renovated to meet the specifications of the machine.

These costs, known as installation costs, are a good example of expenditures that are a component of the asset's cost. Overall, the cost of an asset includes all those costs directly attributable to making the asset ready for use. However, determining which costs to include can be difficult. For example, suppose an organisation constructs a specialised new manufacturing machine, using some of its regular employees and resources. The cost of such assets, which an organisation constructs for itself rather than buying it already finished, will obviously include the cost of raw materials and labour needed to make them. But should the interest on monies borrowed to finance the project also be included? This is a matter of judgement, and depends on the situation. Sometimes interest is included in the cost of such assets; most of the time it is not. Organisations often have policies for how to determine whether expenditures, such as interest, are included into assets' costs. These policies are designed to ensure consistency in calculating cost and to fit the accounting to the organisation's particular circumstances. Usually, Note 1 to the financial statements discloses the policy with respect to interest.

Deciding what to include in an asset's cost can make quite a difference to the organisation's financial statements. Suppose Alpine Ltd has spent \$250 000 this year on supervisors' salaries in connection with setting up a new mountain ski-lift at Mount Kosciuszko. If that cost is just deducted from revenue as an expense this year, that will reduce profit and income tax expense. But if the cost is added to the ski-lift asset instead, total assets will be higher, and this year's profit and income tax expense will be higher too. Over the next several years, profits and income tax expenses will be lower because of higher depreciation on the higher asset cost. So, aside from accounting appropriately and fairly for the asset, the decision about how to handle the supervisors' salaries will affect profit, assets and income tax expenses this year and in several future years. This decision is often called the capitalising versus expensing choice (including the expenditure with the assets versus deducting it as an expense in the current year), and you will see it several times in this book.

In summary, the components of the cost of an asset include all those costs that are required to make it suitable for the purpose intended, whether it be making a machine usable in the production process or bringing inventory into saleable condition. Some common components of the cost of an asset are listed in Exhibit 13.1.

EXHIBIT 13.1

COMMON COMPONENTS OF ASSET COST

LAND, BUILDINGS, EQUIPMENT

- Land:
 - purchase price, including real estate agent commissions
 - costs of obtaining clear title, such as legal fees and title searches
 - costs of clearing, removing unwanted structures, draining and landscaping.
- Building (purchased):
 - purchase price
 - renovation and upgrading costs to make it suitable for the intended use
 - initial painting and decoration.





- Building (self-constructed):
 - materials costs
 - labour costs (including employee benefits arising directly from construction)
 - excavating, surveying, engineering and design costs
 - insurance while constructing the building
 - perhaps some overhead costs and even financing costs incurred during construction.
- Purchased equipment:
 - purchase price including taxes
 - transportation costs
 - installation costs
 - testing costs
 - overhauls that extend the equipment's life or increase its value (betterments).

In the years following acquisition, the question of whether the asset cost should be changed will crop up again when repairs are needed. When a major repair or apparent improvement in the asset is done, the question to ask yourself is whether the asset's productivity or efficiency has been improved, or if the asset's useful life has been extended. If so, there has been a betterment of the asset and the cost of that betterment should be capitalised (that is, added to the cost of the asset). If not, the cost should just be charged to an expense, such as an account called repairs and maintenance expense.



HOW'S YOUR UNDERSTANDING?

13A Titus Ltd has just constructed a new factory building using company employees and equipment for most of the work. The company's accountant has said: 'There are a number of costs that must be capitalised to produce an appropriate balance sheet figure for the building's cost.' Which of the following costs should be included: architect's costs, removal of a concrete floor from the old factory, excavation, the amount paid to workers who did the construction, employee benefit costs to staff working on the construction, and an estimate of costs to maintain the factory over the next five years?

13.2 Depreciation of assets and depreciation expense

Assets such as property, plant and equipment have value because the company intends to receive economic benefits from using them in the future. However, with the exception of land, all these assets must eventually be retired from service. Therefore, when purchasing an asset such as a building or equipment, the rational purchaser will at least have an approximate idea of how much benefit the asset will provide. For example, when buying a piece of equipment to slice loaves of bread, the baker must have a reasonable idea of how many years the equipment will last or how many loaves it will slice before it wears out. If we can estimate how many loaves it will slice, we can then deduct the cost of use of the machine from revenue (in calculating profit) a part at a time, over the number of years it will take to bake that many loaves of bread. The process of allocating the cost over years of benefit is called depreciation, and the annual deduction from revenue is depreciation expense. All property, plant and equipment assets – except land – are depreciated under generally accepted accounting principles (GAAP). LO2

A short comment on terminology may be helpful here. This section, and this book in general, use the terms 'amortisation', 'depreciation' and 'depletion'. In Australia, the term *depreciation* is used when physical assets, such as buildings and equipment, are involved; *depletion* is used when wasting assets, such as timber sales or ore bodies, are involved; and *amortisation* is used when various intangible assets and leases are involved.

Several questions need to be answered before we present examples of depreciation methods. These are outlined as follows.

Why allocate the cost?

Assets are present economic resources controlled by the entity as a result of past events of the organisation that are used to generate revenue for the owners and, ultimately, a return on their investment. One of the objectives of accrual accounting is to attempt to match expenses with the revenue earned. In the case of long-lived assets, the cost will produce benefits over many periods in which revenue is earned. Therefore, some method is needed to allocate the cost of long-lived assets over their useful lives. If the whole asset cost was deducted from profit in the period in which it was acquired, that would make that period's profit relatively low, and subsequent periods' profits relatively high. It would also mean that an asset that has further benefits is not recognised. So, depreciation spreads the cost of the asset out over all the periods that share in the consumption of the asset's economic value. For example:

- A bread slicer costs \$5000 and will have no value after eight years. Therefore, depreciation of \$5000 over eight years (\$625 of depreciation expense each year) shows that using up the slicer's value over those eight years costs us something. We have a \$5000 asset now; in eight years we will have no asset.
- This cost allocation system is somewhat arbitrary, because it is based on expectations that occur when the asset is acquired, not on tracking changes in market value; for example, over the time the asset is used. Over that time, the cost and resale value of bread slicers may keep changing because of inflation, market conditions and/or technological change. We may be able to resell the slicer for only \$3000 after one year, so perhaps the economic value used up in that year is \$2000. Nevertheless, if our depreciation method specifies \$625 per year, that is what we use.

It is essential to understand that the accounting concept of depreciation involves an allocation of cost in order to measure profit. It is *not* a system to track value changes in assets or to measure the current value of those assets in the balance sheet. Depreciation recognises an expense (based on historical cost) that it is presumed matches the revenue generated by using up the asset's economic value. The balance sheet shows the net of the asset's original cost minus accumulated depreciation: it does not mean the asset's current value is that net amount. The depreciation estimation can be viewed as a way to allow a balance sheet user to see the reduction in the value of an asset, while not being as costly as attempting to precisely measure the amount of asset used up in each period.

In the example discussed, after one year, the balance sheet would show the slicer at \$4375 (\$5000 cost less \$625 accumulated depreciation), not at \$3000 or any other measure of current value. The accounting meaning of depreciation is very specific: it is the systematic allocation of the depreciable amount of an asset over its useful life.

Why not depreciate land?

The basic answer to this question is that land's economic value is not considered to decline through use. The following illustrations demonstrate this concept:

- As a machine is used in a production process, it wears out. Other natural processes, such as wind, rain, rust, fatigue and corrosion, all keep assets from providing benefits indefinitely.
- There are also non-physical causes of economic amortisation. A machine can become obsolete with the introduction of newer and faster machines; economic conditions in an area can result in the closure of a plant that had many productive years left, but cannot be profitable any more. While your mobile phone could previously have lasted five years, new technological developments and fashion trends may mean you no longer find it useful after two years.

Land is considered to be immune from all this, and is therefore not depreciated. If evidence of a loss of land value does appear, the land's cost can be reduced to a revised value, but that is a special case and is recognised as an impairment (or write-down) rather than depreciation. Impairment is discussed later in this chapter.

When does cost allocation (depreciation expense) begin?

Depreciation is meant to provide an expense to match the economic benefit obtained from the use of the asset. Therefore, when the asset is put to use and the benefit begins to be realised, depreciation expense should begin. In Chapter 4, we explained journal entries for depreciating assets as part of accrual accounting. The general pattern is to capitalise costs incurred on the asset before putting it into service, and then, when the asset is put into service, to depreciate those costs.

This pattern is illustrated in the chart in Figure 13.1. The line sloping downward from cost need not be a straight one, as you will see.

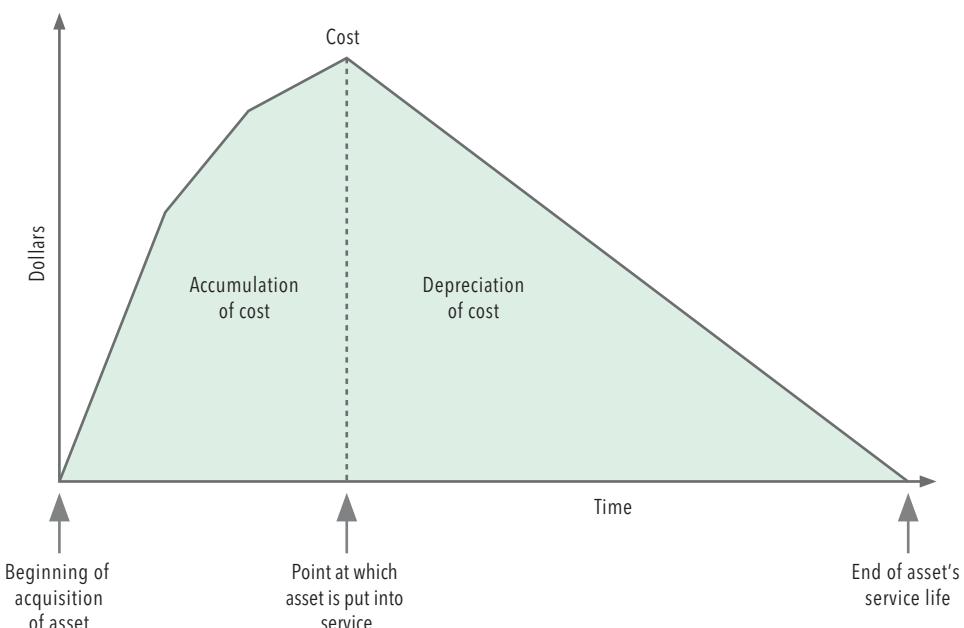


FIGURE 13.1 When does depreciation begin?

Once the asset has been put into service, further costs involved such as painting, maintenance, repairs and so on are now considered to be expenses – they are part of the cost of keeping the asset on its planned path of decline over its useful life. If a cost that is incurred after the asset goes into service significantly changes that asset's economic value in earning revenue or extends its useful life, such a betterment may be capitalised as part of the asset's cost, then depreciated along with the rest of the asset's cost.

Other questions

Does depreciation affect cash flows? Is it exact? What effect does it have on income tax?

Depreciation is recognised by the following journal entry:

DR	Depreciation expense	XXXX
CR	Accumulated depreciation	XXXX

Accumulated depreciation is a contra asset. The entry has no cash component. Therefore, depreciation has no cash flow effect.

Depreciation, no matter how carefully it is calculated, is never exact. It involves a prediction of economic use and useful life, and such a prediction can easily be wrong. Any depreciation amount is fundamentally arbitrary; for that reason, most companies prefer fairly simple calculations rather than complex guesses!

In Australia, and most other countries, a company does not necessarily have the same depreciation figure for accounting and tax purposes. For example, the company may believe the asset has a life of 10 years and therefore depreciate it at 10 per cent per year for accounting purposes. Tax rules may stipulate (or provide advisory rates under self-assessment) that it is to be depreciated over 12 years; that is, at 8.33 per cent per year. Thus, the choice for accounting purposes does not affect the tax paid.

Depreciation does not match actual market value changes in assets, it has no cash flow effect and it is an estimate only! What good is it? That's a question often asked, and the answer goes back to the matching criterion and the historical cost basis of accrual accounting. We know that some economic value is being used up as a depreciable asset is used to earn revenue. Depreciation provides a way of spreading the cost out over the useful life of the asset that matches the presumed consumption of that cost with the benefits (revenue) gained from that use.



HOW'S YOUR UNDERSTANDING?

- 13B** You put into service a \$750 000 machine on 1 July 2019. It has an estimated useful life of 10 years and no value at the end of its useful life.
- (i) At 30 June 2022, what is the accumulated depreciation?
 - (ii) At 30 June 2022, what is the book value?
 - (iii) How would it appear in the balance sheet at 30 June 2022?

13.3 Depreciation bases and methods

LO3 Several depreciation methods are commonly used by businesses today. Different methods attempt to approximate different economic use patterns for the assets over their lives. In each case, the purpose is to match the depreciation expense for each period with the presumed economic benefit obtained during that period, often in a simple way, since depreciation is an estimate rather than an exact measure of value changes.

As noted in section 4.5, which discusses contra accounts, the accumulated depreciation account is a balance sheet offset account to the asset cost account. Over time, it accumulates the total of the depreciation expense recorded over the years. Various depreciation methods can take into account whether an asset is expected to have a remaining value at the end of its useful life. This remaining value can be called terms including: residual value, scrap value or salvage value. The intention is that management may sell the asset and, as a result, will withhold from the depreciation of the asset this remaining value. If included, residual value within a depreciation method would result in the value of the asset remaining at the end of the useful life of the asset.

There are three basic assumptions about how an asset brings economic benefit, and one general kind of depreciation for each assumption:

Assumption	Matching pattern of cost allocation
1 Spread evenly over the asset's life	<i>Straight-line</i>
The consumption of economic benefits is equal throughout an asset's useful life.	Expense is the same each year of the useful life.
2 Highest in the early years and decreases over the asset's life	<i>Reducing balance method</i>
The consumption of economic benefits is higher in the earlier years than in the later years.	Expense is larger in the earlier years than in the later years.
3 Variable over the asset's life	<i>Units of production/Units of use</i>
The consumption of economic benefits varies according to how much production is achieved each year.	Expense depends on each year's volume of production or usage.

These three general kinds of depreciation methods are compared graphically in Figure 13.2. Each has a different depreciation expense per period and a different pattern of book value. (Book value equals cost minus accumulated depreciation. Similar to this term, the carrying amount of an asset is cost less accumulated depreciation and impairment, so, because cost is constant, the book value pattern comes from the accumulation of the depreciation.)

Let's see how to calculate depreciation using the three different bases.

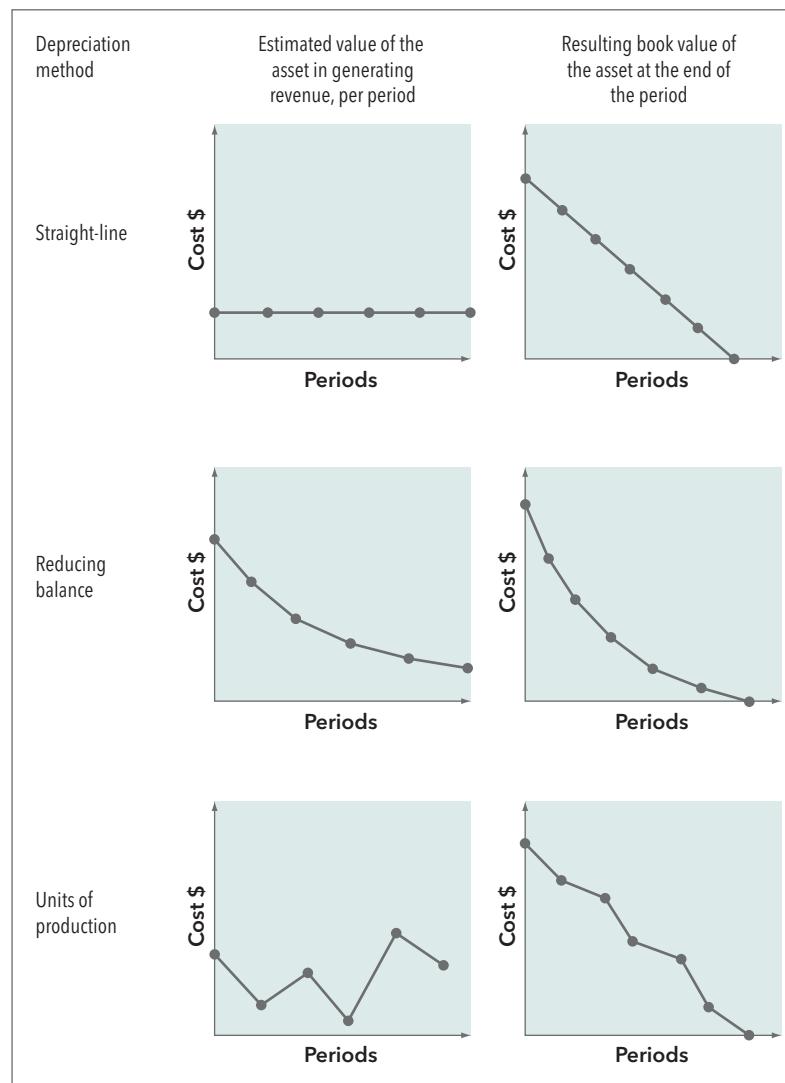


FIGURE 13.2 Three depreciation methods

Straight-line depreciation

Straight-line depreciation, depicted in the top panel of Figure 13.2, is the simplest and most commonly used of all the depreciation methods. Three pieces of information are necessary in order to calculate straight-line depreciation:

- 1 *cost of the asset*: the total cost to be depreciated over time (this includes the amount capitalised to the date the asset is put into service)
- 2 *estimated useful life of the asset*: the number of periods for which the asset is expected to benefit the organisation

- 3 estimated residual value: the amount expected to be recovered via the sale of the asset at the end of its useful life – which is likely to be only an educated guess, and is often assumed to be zero for purposes of calculating depreciation over long periods of time.

The formula for straight-line depreciation is:

$$\text{Depreciation for one period} = \frac{\text{Cost} - \text{Estimated residual value}}{\text{Estimated useful life (number of periods)}}$$

Using this formula, annual depreciation on a delivery truck used by a local business would be calculated this way:

- Cost of the truck = \$5000
- Estimated useful life = six years
- Estimated residual value after six years = \$800.

$$\begin{aligned}\text{Depreciation for one year} &= \frac{5000 - 800}{6} \\ &= 700\end{aligned}$$

At the end of the first year, the book value of the truck will be:

$$\begin{aligned}\text{Cost} - \text{Total depreciation to date} &= \$5000 - \$700 \\ &= \$4300\end{aligned}$$

Each year the following journal entry would be made:

	\$	\$
DR Depreciation expense	700	
CR Accumulated depreciation		700

Depreciation expense for each of the six years will be \$700, reducing the book value by \$700 per year. As shown in Figure 13.2, the constant expense produces a linear increase in accumulated depreciation and, therefore, a linear decline in book value.

A common practice for many firms is to assume the residual value of the asset to be zero, which then enables depreciation to be expressed in terms of percentages instead of years. For example, a company might use straight-line depreciation expressed as 16.66 per cent of historical cost, rather than as a term of six years.

The effect on the financial statements of depreciation can most clearly be seen by constructing a depreciation schedule. Assume equipment cost \$300 000 and has a three-year expected life with no residual value and that straight-line depreciation is used. The date of acquisition is labelled Year 0.

Year	Depreciation expense	Accumulated depreciation	Book value
			\$
0			300 000
1	100 000	100 000	200 000
2	100 000	200 000	100 000
3	100 000	300 000	0

On the face of the balance sheet it is normal to put the book value with a note to the financial statements showing cost price (\$300 000) and the accumulated depreciation. For example, at Year 1 the face of the balance sheet would show:

\$
Equipment (net) 200 000

The note to the financial statements at Year 1 would show:

\$	
Equipment (cost)	300 000
Less: Accumulated depreciation	<u>100 000</u>
Equipment (net)	200 000

Reducing balance method

Some assets contribute more of their benefit to the organisation in the early parts of their lives. For example, a new computer may benefit the company greatly when it is first purchased, but because of quickly changing technology and evolving needs as the company grows, this same computer may be relegated to less important tasks within a few years of its purchase, as better computers are acquired. Therefore, even though the computer will continue to benefit the company, most of its economic value has been consumed near the beginning of its life. In Australia, the reducing balance method is the next most common depreciation method after straight-line.

Information needed for this procedure is:

- *cost of the asset*
- *accumulated depreciation*: total depreciation recorded since the acquisition of the asset
- *depreciation rate*: the percentage of the book value (cost minus depreciation to date) of the asset that is to be depreciated in the period.

The formula for the reducing balance method is:

$$\begin{aligned}\text{Depreciation for one period} &= (\text{Cost} - \text{Accumulated depreciation}) \times \text{Rate} \\ &= \text{Remaining book value of the asset} \times \text{Rate}\end{aligned}$$

Let's use the reducing balance method to calculate depreciation for the six-year life of the same truck we discussed earlier. With this method, the depreciation rate is established such that, over the asset's life, the cost will be fully depreciated. Doing this exactly requires complex algebra, so approximate rates are usually used. For example, Australian companies that use this method normally use 150 per cent of the straight-line percentage, assuming no residual value. This is what many of them use for taxation purposes.

The truck has a life of six years (straight-line depreciation is 16.66 per cent per year). Because 150 per cent of the straight-line rate would be 25 per cent, we will use 25 per cent to approximate the economic consumption pattern:

- cost = \$5000
- depreciation to date = \$0 (at beginning)
- depreciation rate = 25 per cent.

Year 1	
Depreciation for the year	= $(\$5000 - \$0) \times 25\%$
	= \$1250
Accumulated depreciation to date	= \$1250
Remaining book value	= \$3750 (i.e. 5000 - 1250)
Year 2	
Depreciation for the year	= $(\$5000 - \$1250) \times 25\%$
	= \$938 (cents rounded up)
Accumulated depreciation to date	= \$2188 (1250 + 938)
Remaining book value	= \$2812
Note: Depreciation expense gets smaller with each year.	

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Year 3	
Depreciation for the year	= $(\$5000 - \$2188) \times 25\%$
	= \$703
Accumulated depreciation to date	= \$2891 (2188 + 703)
Remaining book value	= \$2109
Year 4	
Depreciation for the year	= $(\$5000 - \$2891) \times 25\%$
	= \$527
Accumulated depreciation to date	= \$3418 (2891 + 527)
Remaining book value	= \$1582
Year 5	
Depreciation for the year	= $(\$5000 - \$3418) \times 25\%$
	= \$396
Accumulated depreciation to date	= \$3814 (3418 + 396)
Remaining book value	= \$1186
Year 6 - Last year of estimated life	
Calculation of depreciation for the year	= $(\$5000 - \$3814) \times 25\%$
	= \$297 (NB: Does not result in a residual value of \$700, so then calculate amount of depreciation remaining)
Depreciable amount remaining	= $(\$5000 - \$3814 - \$700)$
	= \$486
Accumulated depreciation to date	= \$4300 (3814 + 486)
Remaining book value	= \$700

Note that when using reducing balance depreciation, as shown in the example, the calculation of the depreciation expense is a little different in the last year of its useful life to ensure that the remaining book value of the truck becomes the expected residual value of \$700. Consequently, the book value at the end of the estimated life would be the same irrespective of choice of method.

The second panel of the chart in Figure 13.2 shows the kind of patterns of depreciation expense and book value we calculated for the truck. The expense and book value lines are curved lines rather than straight lines.

The reducing balance percentage is sometimes calculated using the following formula, which is applied to the original cost.

$$r = 1 - \sqrt[n]{\frac{s}{c}}$$

where r = required depreciation rate

n = estimated life in years

s = estimated residual value

c = original cost

This formula operates satisfactorily only if the estimated residual value is substantially greater than zero, as the result is very sensitive to small movements near zero.

If an asset has an original cost of \$30 000, a life of five years and an estimated residual value of \$5000, the rate would be:

$$1 - \sqrt[5]{\frac{5000}{30\ 000}} = 30\% \text{ approximately}$$

Units of production or units of use depreciation and depletion

The economic consumption of many assets is not necessarily a function of time, but rather of use. For example, it may make more sense to say that a delivery truck is expected to last a certain amount of kilometres rather than so many years. The consumption of natural resources (wasting assets) is also often accounted for using the units of production method, because the value to the organisation of a stand of timber, or an oil well, is tied to the number of trees remaining to be felled, or the amount of oil left to be recovered. Therefore, the units of production method of depreciation is also used to compute the depletion of natural resources.

To compute the depreciation or depletion per unit of usage, the following information is needed:

- cost of the asset
- estimated residual value
- estimated number of units to be produced during the life of the asset: for example, the estimated number of tonnes of ore extracted from a mine, the estimated number of kilometres that a delivery truck will travel or another measure of production.

The formula for computing units of production depreciation is:

$$\text{Depreciation or depletion for one unit of use or production (e.g. a kilometre)} = \frac{\text{Cost} - \text{Estimated residual value}}{\text{Estimated no. of units of use or production during life}}$$

To determine depreciation for the year, the charge per unit is multiplied by the number of actual units produced or used. Using the delivery truck as an example again, depreciation of the truck over its expected useful life might be:

- cost = \$5000
- estimated residual value = \$800
- estimated number of kilometres to be driven = 210 000.

$$\begin{aligned}\text{Depreciation per km} &= \frac{\$5000 - \$800}{210\,000} \\ &= \$0.02 \text{ depreciation/km}\end{aligned}$$

Year 1

If the truck is driven 20 000 kilometres during the year, the depreciation charge for the year will be:

$$\$0.02 \times 20\,000 = \$400$$

Year 2

If the truck is driven 80 000 kilometres during the second year, the depreciation charge for the year will be:

$$\$0.02 \times 80\,000 = \$1600$$

Year 3

If the truck is driven 65 000 kilometres during the year, the depreciation charge for the year will be:

$$\$0.02 \times 65\,000 = \$1300$$

Year 4

Suppose the truck is driven 50 000 kilometres during the year. However, after 45 000 kilometres, the truck will be fully depreciated (i.e. it has been driven the estimated 210 000 kilometres). Therefore, the depreciation charge for the year will be just the remaining \$900, which is less than \$0.02 × 50 000 km.

The bottom panel in Figure 13.2 illustrates units of production depreciation. It is the only method that can result in the annual depreciation expense going up and down from period to period.

Depletion of a wasting asset and units of production depreciation of a fixed asset are computed in the same manner, but depletion refers to the physical consumption of an asset, rather than just the economic consumption. For the timber, residual value may be the value of the land after all the timber has been cut. In Australia, this method is often used in the mining industry.

13.4 Depreciation example

LO4 Here is an example. Zippo Limited has purchased a factory at a cost of \$23 million (not including land). The general manager wants to know what difference it would make if the company used straight-line, reducing balance or units of production depreciation.

- Estimated useful life is 20 years, during which time the company plans to make about 100 million boxes of its standard product.
- Estimated residual value after the end of the useful life is \$5 million.
- If reducing balance depreciation were used, assume 10 per cent per year on the reducing balance.
- Production plans call for production, over the next six years, of four, nine, nine, eight, nine and five million boxes per year, and likely stable production of about four million boxes per year for the remaining 14 years.

The resulting depreciation bases would be:

- straight-line: $\$23\,000\,000 - \$5\,000\,000 = \$18\,000\,000$ over 20 years (5 per cent of base per year)
- reducing balance: $\$23\,000\,000 - \text{accumulated depreciation} \times 10\%$ per year
- units of production: $\$18\,000\,000/100\,000\,000 \text{ boxes} = \0.18 per box produced.

If everything turns out as expected, the annual depreciation expense for the next 20 years will be as follows:

	Straight line expense	Reducing balance		Units of production expense	
		Begin book value	Expense		
				\$	\$
1		900 000	23 000 000	2 300 000	720 000
2		900 000	20 700 000	2 070 000	1 620 000
3		900 000	18 630 000	1 863 000	1 620 000
4		900 000	16 767 000	1 676 700	1 440 000
5		900 000	15 090 300	1 509 030	1 620 000
6		900 000	13 581 270	1 358 127	900 000
7		900 000	12 223 143	1 222 314	720 000
8		900 000	11 000 829	1 100 083	720 000
9		900 000	9 900 746	990 075	720 000
10		900 000	8 910 671	891 067	720 000
11		900 000	8 019 604	801 960	720 000
12		900 000	7 217 644	721 764	720 000
13		900 000	6 495 880	649 588	720 000
14		900 000	5 846 292	584 629	720 000
15		900 000	5 261 663	261 663*	720 000
16		900 000	5 000 000	0	720 000
17		900 000	5 000 000	0	720 000
18		900 000	5 000 000	0	720 000
19		900 000	5 000 000	0	720 000
20		900 000	5 000 000	0	720 000
Total		18 000 000		18 000 000	18 000 000

*Note that the reducing balance method accelerates depreciation expenses such that no further depreciation expense is required after around 15 years in this example

At the end of 20 years, if everything works out as expected, the book value of the factory will be:

- straight-line: $\$23\,000\,000 - \$18\,000\,000 = \$5\,000\,000$
- reducing balance: $\$23\,000\,000 - \$18\,000\,000 = \$5\,000\,000$
- units-of-production: $\$23\,000\,000 - \$18\,000\,000 = \$5\,000\,000$

If, at the end of 20 years, the factory is sold, there will likely be a gain or a loss on the sale that will equal the sale proceeds minus the book value. The proceeds may not be the expected \$5 million. If they are not, there will be a gain or loss on the sale for even the simplest method (i.e. straight-line).

The units of production method will almost certainly result in a book value that is not exactly equal to \$5 million, even though it is planned to equal that. This is because the actual production will be very unlikely to exactly equal 100 million boxes over 20 years.

Whichever method is adopted, the company can always adjust its calculations later if the expectations about length of useful life or residual value begin to look seriously inaccurate. For now, note that it is usual to allocate the remaining book value over the remaining useful life. For example, an asset was expected to have a useful remaining life of 10 years, but after the fifth year it had a book value of \$60 000; it was decided that it would only be used for another three years. The depreciation for each of the last three years would be \$20 000.

Most Australian companies use straight-line depreciation unless this will lead to misleading financial statements.



HOW'S YOUR UNDERSTANDING?

- 13C** Explain to the general manager of Cold Lake Manufacturing Ltd, which opened for business at the beginning of this year, what depreciation expense is supposed to accomplish and the criteria you would recommend the company use in choosing the most appropriate method.

13.5 Gains and losses on noncurrent asset disposals

Gains and losses have been mentioned and illustrated in various ways since Chapter 4. This section is intended to pull the ideas together for you and show you how they are partly the consequences of accounting policy choices. **LO5**

In the Zippo example (see section 13.4), there was a possibility of a gain or a loss on the sale of the factory in the 20th year. When a noncurrent asset is sold, it could be handled as ordinary revenues are: the proceeds could be added to revenue and the book value of the asset added to the COGS. But this would mix the day-to-day revenues from the activities of the organisation with the occasional (and, presumably, less economically important) revenues resulting from reducing long-term fixed assets or other investments.

Therefore, such events are kept separate from ordinary revenues via the following kind of journal entry, which we have seen before:

DR	Cash or non-trade receivables (proceeds)	XXXX
DR	Accumulated depreciation on that asset (all that has accumulated)	XXXX
DR	Loss (or CR Gain) on sale	XXXX or XXXX
CR	Noncurrent asset (for original cost)	XXXX

The gain or loss is essentially a balancing item of the difference between the proceeds and the book value (cost minus accumulated depreciation, if any).

Here is an example. Company X has a truck that cost \$84 000. The accumulated depreciation at the date of sale is \$46 000. Therefore, book value is \$38 000 at the date of sale.

- If the company sells the truck for \$52 000, there is a gain on sale of \$14 000 (\$52 000 – \$38 000). The journal entry would be:

		\$	\$
DR	Cash	52 000	
DR	Accumulated depreciation	46 000	
CR	Gain on sale		14 000
CR	Truck		84 000

- If the company sells it for \$30 000, there is a loss on sale of \$8000 (\$38 000 – \$30 000). The journal entry would be:

		\$	\$
DR	Cash	30 000	
DR	Accumulated depreciation	46 000	
DR	Loss on sale		8 000
CR	Truck		84 000

Think of gains and losses as depreciation corrections:

- If the company knew in advance what the proceeds would be and when the sale would happen, it could have depreciated the asset down exactly to the proceeds amount by that date. So, if the proceeds equal book value, there is no gain or loss.
- If the proceeds are less than book value, there is a loss: in effect, more depreciation is needed and that's what the loss recognises.
- If the proceeds are *more* than book value, there is a gain: in effect, too much depreciation was taken, and the gain is really just that excess (which caused the lower book value) being recognised.



HOW'S YOUR UNDERSTANDING?

- 13D** A company sells a piece of equipment (cost \$40 000 and accumulated depreciation \$25 000) for \$5000 cash. What would be the journal entry?

13.6 Asset revaluations

LO6 Australian companies are allowed to partly depart from historical cost by revaluing noncurrent assets after recording initially at cost. This is also permitted in many other countries, and is referred to as the use of fair value accounting.

Accounting standards state that each class of noncurrent assets must be measured using either (a) the cost model or (b) the revaluation model, which has a fair value basis. Class of asset refers to the category of assets; for example, land, buildings, equipment, motor vehicles, office equipment and aircraft. This means that managers must choose which method they will employ for that class of assets and disclose this choice in the notes to the financial statements.

Under the cost model, after recognition of an asset, the asset is carried at cost less accumulated depreciation and any accumulated impairment losses, but this carrying amount cannot exceed the recoverable amount. (More on impairment in the next section of this chapter.)

Under the revaluation model, after initial recognition of an asset, the asset whose fair value can be measured reliably is carried at a revalued amount, which is the fair value at the date of revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Fair value is defined as the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's

length transaction. In determining fair value, market prices are used if there is an active and liquid market for the asset. If not, the best available evidence is used; for example, current market prices of similar assets, prices of recent transactions of similar assets or appraisals by professional valuers.

Assets can either be revalued upwards (revaluation increment) or downwards (revaluation decrement) from their carrying amounts (often called book value). The accounting standards on revaluations have the purpose of ensuring that users of the financial statements have relevant and reliable information for evaluating the performance, financial position, financing and investing of the entity.

When there is an increment, the amount of the increment is reflected in other comprehensive income and then is accumulated in the shareholders' equity section of the balance sheet under the heading of 'revaluation surplus' (previously called 'asset revaluation reserve'). (The concept of a reserve is discussed in more detail in Chapter 15.) So if you see a balance in the revaluation reserve account, it simply tells you the amount by which assets have been revalued over time. For example, if land is revalued from \$11 million to \$12 million, both the land account and the revaluation surplus account would increase by \$1 million. However, because of conservatism, if there was a revaluation decrement to \$10 million, the decrement would be recognised as an expense in the income statement. That is, an expense (loss on devaluation of land) would increase, and land would decrease. In summary, increments in asset valuations do not generally affect profit directly, but decrements do reduce the profit for the year (see exceptions that follow). Also note that changes in asset valuation (except for land) result in different depreciation expenses in subsequent years.

When a class of noncurrent assets is measured on the fair value basis, revaluations need to be made regularly to ensure that the carrying amount does not materially differ from fair value. Revaluing every three years is quite common.

The standards state that when an asset is revalued, all assets within the same class of assets should also be valued at the same time on a consistent basis. For example, if one block of land is revalued, all other blocks of land should be revalued on a consistent basis; similarly for buildings, plant and equipment. Note that a downwards revaluation of a noncurrent asset must be undertaken when its carrying amount is greater than its recoverable amount. When the fair value basis is used, the required disclosures include the effective date of the revaluation, the method and significant assumptions used in determining fair value and whether an independent valuation has been obtained.

Now let's consider the debits and credits. Where there is an asset revaluation increment, the amount of the increment is credited to a revaluation surplus. For example, if land is revalued from \$11 million to \$12 million, the entry would be:

		\$	\$
DR	Land	1 000 000	
CR	Revaluation surplus		1 000 000

However, if there had been a revaluation decrement to \$10 million, the decrement would be recognised in an income statement account. The entry would be:

		\$	\$
DR	Loss on devaluation of land	1 000 000	
CR	Land		1 000 000

There are some important exceptions when revaluations are occurring on an ongoing basis for the same class of assets. If an increment reverses a revaluation decrement previously recognised as an expense in the income statement with respect to that same class of assets, the increment would be recognised as income. Similarly, if a revaluation decrement reverses a preceding revaluation increment that was credited to revaluation surplus for the same class of assets, it will be debited directly to the revaluation surplus.

Further complications arise when we consider assets that are depreciated, such as equipment. Australian accounting standards allow entities to choose one of two treatments to account for accumulated depreciation at the date of revaluation. The most widely used treatment is described as follows.

At the time of revaluation, the accumulated depreciation on those assets is credited to the asset account. The asset account is then increased or decreased by the amount of the revaluation increments or

decrements. For example, if equipment cost \$2 million (with accumulated depreciation of \$500 000) and was revalued to \$2 500 000, the entries would be:

	\$	\$
DR	Accumulated depreciation	500 000
CR	Equipment	500 000

This entry has transferred the relevant accumulated depreciation as an offset to the equipment account. The equipment is now carried at a net balance of \$1 500 000. To revalue it to \$2 500 000, the following entry would occur:

	\$	\$
DR	Equipment	1 000 000
CR	Revaluation surplus	1 000 000

When the asset previously revalued is sold, the gain or loss on disposal is measured as the difference between the carrying value at the time of disposal and the net proceeds. You will cover these issues, and other more advanced matters, in subsequent courses.

We realise that these sections are difficult for an introductory book. However, at least by seeing the journal entries, even if you don't fully understand them at this stage, you will be in a better position to comprehend the meaning and value of the noncurrent assets section and the revaluation surplus in the balance sheet.



FOR YOUR INTEREST

Here is a typical description of revaluations from Harvey Norman Holdings Limited.

Freehold owner-occupied properties

Following initial recognition at cost, owner-occupied land and buildings are carried at fair value less any subsequent accumulated depreciation and accumulated impairment losses. Depreciation is calculated on a straight-line basis over the estimated useful life of the asset as follows:

- Land – not depreciated
- Buildings – 20 to 40 years

Any revaluation surplus is recorded in other comprehensive income and credited to the asset revaluation reserve in equity. However, to the extent that it reverses a revaluation decrease of the same asset previously recognised in the income statement, the increase is recognised in the income statement. Any revaluation deficit is recognised in the income statement, except to the extent that it offsets a previous surplus of the same asset in the asset revaluation reserve. Any accumulated depreciation as at revaluation date is eliminated against the gross carrying amount of the asset and the net amount is restated to the fair value of the asset. Valuations are performed with sufficient regularity to ensure that the carrying amount does not differ materially from the fair value of the asset at the balance date.

Source: Harvey Norman Holdings Limited, Annual Report 2021, p. 111.

13.7 Asset impairment

LO7 In Australia, directors need to ensure that the carrying amount of an asset does not exceed the recoverable amount. If the carrying value is greater than the recoverable amount, the asset is said to be impaired and an impairment loss is recognised and the asset written down to its recoverable amount. Recoverable amount is the higher of fair value less costs to sell (where fair value is the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction) and value in use (the present value of future cash flows expected to be derived from the asset). For example, if an airline has a

plane with a carrying value of \$80 million, the recoverable amount is the higher of what someone (e.g. another airline) will pay to buy the plane or the expected future cash flows from flying the plane over the remainder of its expected life (cash inflows from ticket sales less cash outflows related to those flights). When the asset is impaired (i.e. recoverable amount is less than carrying value) it is necessary that an impairment loss is recognised and the asset written down to the recoverable amount. This impairment loss is recognised in the income statement.

If it is a non-depreciable asset (e.g. land) then:

DR	Impairment loss	XXXX
CR	Land	XXXX

If it is a depreciable asset (e.g. equipment) then:

DR	Impairment loss	XXXX
CR	Accumulated depreciation – equipment (or Accumulated impairment – equipment)	XXXX

In the latter case, the accumulated depreciation is effectively brought forward in time; that is, the expense is recognised in an earlier period than originally expected.

At each reporting date, companies need to assess whether there is any indication that impairment should be fully or partly reversed. When the carrying value of a previously impaired asset is greater than its recoverable amount, a company can reverse the impairment but this amount cannot result in the carrying amount being greater than what it would have been without the previous impairment; that is, you can't revalue above cost – accumulated depreciation under the cost method.

As noted, the impairment losses are shown in the income statement, and if large are shown as a separate item usually labelled as 'Impairment'.



HOW'S YOUR UNDERSTANDING?

- 13E** Here is a typical description of 'Impairment', extracted from Note 1 of the 2021 financial statements of Harvey Norman Holdings Limited:

Impairment of non-financial assets

The consolidated entity assesses, at each reporting date, whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the consolidated entity estimates the asset's recoverable amount. The recoverable amount of an asset or cash generating unit (CGU) is the higher of that asset or CGU's fair value less costs to sell and its value in use. Recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets, in which case, the recoverable amount is determined for the CGU to which the asset belongs. When the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

An assessment is made at each reporting date to determine whether there is any indication that previously recognised impairment losses may no longer exist or may have decreased. If such indication exists, the consolidated entity estimates the asset's or CGU's recoverable amount. A previously recognised impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognised. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognised for the asset in prior years. Such reversal is recognised in the income statement.

Source: Harvey Norman Holdings Limited, Annual Report 2021, p. 88.



From what you have read, try to define each of the following terms from the extract:

- (i) carrying amount
- (ii) recoverable amount
- (iii) fair value less costs to sell
- (iv) value in use.

13.8 Intangible assets

LO8 Intangible assets are identifiable, non-monetary assets that do not have a visible physical existence, unlike land, buildings or equipment. Examples of intangible assets include:

- *patents, copyrights, trademarks* and other such legal property; for example, the 2021 financial statements of Telstra describe 'Acquired intangible assets' as follows:

We acquire other intangible assets either as part of a business combination or through a separate acquisition. Intangible assets acquired in a business combination are recorded at their fair value at the date of acquisition and recognised separately from goodwill. Intangible assets acquired through a specific acquisition are recorded at cost.

Intangible assets that are considered to have a finite life are amortised on a straight-line basis over the useful life. Intangible assets that are considered to have an indefinite life are not amortised but tested for impairment on an annual basis or when an indication of impairment exists.

Telstra Corporation Limited, Annual Report 2021, p. 110. Reproduced with permission. <https://www.telstra.com.au/content/dam/tcom/about-us/investors/pdf-g/0821-TEL-AR-2021-FINAL-Interactive.pdf>.

Thus, an asset is created for these items. If the asset has a finite life, it is then amortised over the period during which the company believes the items will provide benefit. If the asset is not considered to have a finite life, an impairment test is carried out annually to determine if the value of the asset is to be written down. Note the amount of the write-down would reduce profit for the period:

- *brand names*, which can be registered to maintain exclusive use; for example, a brand name you may be familiar with, Coca-Cola, are listed as intangibles in the balance sheets of Coca-Cola Amatil Limited:

Coca-Cola Amatil Limited

Useful life details for their assets are as follows:

Brand names and trademarks	40 to 50 years
Software development and other assets	3 to 14 years

Coca-Cola Amatil Limited, Annual Report 2020, p.101.

- *franchises, distributorships* and other such rights to sell someone else's products in a certain geographical area, including McDonald's Restaurants, Boost Juice and KFC, where the local operator has paid for the right to use the name and sell the products.
- *deferred charges*, such as incorporation costs, financing costs, and other items that are really long-term prepaid expenses. One such example from an annual report of deferred charges is:

Crown Resorts Limited

Borrowing costs

Borrowing costs directly associated with qualifying assets are capitalised, including any other associated costs directly attributable to the borrowing.

Crown Resorts Limited, Annual Report 2021, <https://www.crownresorts.com.au/getmedia/fc03c891-1c33-4566-8ffb-24f1292d3ae4/90daba8e-1d19-477e-b3b3-1a79df35d1c7.pdf>, p. 117.

- development costs (including product development costs and mineral exploration costs), which are capitalised and later expensed at the time they earn revenue in the future. The Australian Accounting Standards allow development costs to be recognised as an intangible asset if the entity can demonstrate the following:
 - It is technically feasible to complete the intangible asset so that it will be available for use or sale.
 - The entity intends to complete the intangible asset and use or sell it.
 - The intangible asset will generate probable future economic benefits; that is, the entity can demonstrate that there is a market for the output or, if it is to be used internally, the usefulness of the intangible asset.
 - Adequate technical, financial and other resources are available to complete the development and to use or sell the intangible asset.
 - The costs can be measured reliably.

Conversely, the Australian Accounting Standards require organisations to charge all research costs to an expense account when they are incurred. Organisations are specifically prohibited from capitalising any expenditure associated with internally generated brands, mastheads, publishing titles, customer lists and similar items. Any costs associated with the development of these items must be expensed as incurred.

What are intangible assets worth?

Because such assets are intangible, their existence and value may be doubtful. Generally, the more clearly identifiable – that is, capable of being separated from the entity and sold, or arising from a contractual or legal right – and documented the assets are (especially via external evidence such as contracts and legal documents), the less difficulty their measurement poses. However, even for clearly owned assets such as patents and franchises, there may be considerable doubt about their future economic value. For example, what is a McDonald's franchise worth? It depends on ever-changing consumer tastes, on whether a competitor does or doesn't open across the street, and on many other business and economic factors. Difficulties in valuing brand names and trademarks also abound.

For assets such as product development expenditures, there is often a real question as to whether they belong on the balance sheet at all. Capitalising expenditures on such items may appear to create better matching, and is usually seen to be proper by those making such expenditures, but this depends on whether they will ever return future value. Will the great new product sell? Will it produce revenues greater than costs? This is a difficult judgement to make, and many people have concluded that such assets should not appear on the balance sheet. These people favour conservatism in accounting and are concerned about manipulation or just feel that recognising such assets is not fair or appropriate. As noted earlier, Australian Accounting Standards require development expenditures to be expensed immediately and not capitalised, unless the costs meet the strict criteria noted earlier.



HOW'S YOUR UNDERSTANDING?

13F If a company capitalises development costs of \$5 million, instead of expensing them in the current year, what is the impact on the financial statements (assume expected benefits for 10 years)?

Cost of intangibles

The cost of intangibles is determined in the same way as that of any other asset: purchase cost and other expenditures made prior to putting the asset into service (getting economic benefits from it). There may be substantial ambiguity about the cost of internally developed assets – such as development expenditures – because it may be difficult to separate what was spent to develop the asset from normal expenses incurred.

As noted previously, internally generated brands, mastheads, customer lists and similar items cannot be capitalised (made an asset), and are therefore expenses. For this reason, many companies decline to recognise (capitalise) such assets.

Amortisation or impairment of intangibles

The concept of depreciation also applies to intangible assets but here it is called amortisation. Under Australian Accounting Standards, an entity is required to assess whether a useful life is finite or indefinite. If finite, the intangible is amortised. Determining *legal* useful life may be fairly straightforward for assets that are supported by contracts or other documents – such as leases that have a specified term (as do most franchises) and patents that are valid for a specific number of years – but whether this is also the *economic* useful life is harder to say. When an entity determines that an intangible asset has an indefinite useful life, then the asset is not subject to amortisation. However, the entity would need to test annually for impairment, by comparing the asset's carrying amount with its recoverable amount. Any excess of the carrying amount over its recoverable amount would need to be immediately recognised as an impairment in the income statement; that is, it reduces net profit as well as the amount of the asset recorded in the balance sheet.

As an example of both finite and infinite lives of intangibles, consider the following extracts on intangibles from the 2020 financial statements of Coca-Cola Amatil Limited.

Indefinite life intangible assets, except for goodwill, are recognised initially at the date of acquisition at their fair value which is deemed to be cost.

Definite life intangible assets are recognised at cost. Assets acquired in a business acquisition are recognised at the date of acquisition at fair value, which is deemed to be cost. Following initial recognition, intangible assets are amortised on a straight-line basis over their useful lives and tested for impairment when there is any indication of impairment.

Coca-Cola Amatil Limited, Annual Report 2020, p.101.

The largest intangible asset for Harvey Norman Holdings Limited is computer software, which is included in the balance sheet at \$61.597 million, net of accumulated amortisation and impairment. They note that:

Intangible assets, consisting of capitalised computer software assets, capitalised development expenditure and licence property are carried at cost less any accumulated amortisation and accumulated impairment losses. Intangible assets are amortised on a straight line basis over their estimated useful lives, but not greater than a period of eight and a half (8.5) years.

Intangible assets are tested for impairment where there are any indicators of impairment, either individually or at the cash generating unit level. Useful lives are also examined on an annual basis and adjustments, where applicable, are made on a prospective basis. The amortisation expense on intangible assets with finite lives are recognised in the income statement in the expense category consistent with the function of the intangible asset.

Source: Harvey Norman Holdings Limited, Annual Report 2021, p. 108.

13.9 Goodwill

LO9 Goodwill arises when more is paid for a group of assets, such as a whole business, than the assets seem to be worth individually. The rationale for paying the additional amount may be based on such factors as how the business is organised or the number of customers it has. As a result, there is an asset called goodwill that keeps the accounts in balance. Here is an example. Battleship Limited buys all the business assets of Boat Limited for \$800 000 cash. The best estimate of the fair market values of those assets are:

- receivables, \$60 000
- inventories, \$110 000
- land, \$100 000
- building, \$260 000

- equipment, \$130 000
- total, \$660 000
- no liabilities are assumed by Battleship Limited.

Battleship Limited would record the purchase as follows:

		\$	\$
DR	Accounts receivable	60 000	
DR	Inventories	110 000	
DR	Land	100 000	
DR	Buildings	260 000	
DR	Equipment	130 000	
CR	Cash		800 000

No problem. Except that the entry doesn't balance! So a new account called 'goodwill' is created and debited with \$140 000, which is the \$800 000 cost of acquiring the whole company minus \$660 000: the sum of the fair values of the parts. This keeps the books in balance, but creates an account for which the value and meaning are unclear. If goodwill represents unrecorded and unidentifiable assets, what are they? If it represents a good location, good managers or 'synergy' with the operations of Battleship Limited, what are these things really worth? How much future value do they have? How long will this value last?

Purchased goodwill is measured as the excess of the cost of acquisition of another entity over the fair value of the identifiable net assets (net assets = assets – liabilities) acquired.

For accounting purposes, it is important that you understand the difference between externally and internally generated goodwill. The situation discussed in the previous paragraph refers to externally generated goodwill, which is recognised by the accounting system. This is a transaction, supported by documentation, that shows how much was paid. Some judgements then need to be made about the fair value of the assets, with the remainder being goodwill. However, if an organisation builds up the business by such methods as better management and improving the friendliness of staff, this would be called internally generated goodwill, which would not be included in the financial statements. While someone else may now be willing to pay more for the business, this extra value is not represented in the accounts. There are a number of reasons for this, but at this stage note that difficulty in measuring this amount is one reason why it is not included. Internally developed goodwill is never capitalised; for example, expenditures on office parties that create happy employees are expensed, not capitalised.

Following the acquisition of goodwill, rather than amortising it over a deemed useful life (as was previously the case in Australia), an entity will test it for impairment on an annual basis, or more frequently, if events or changes in circumstances indicate that the goodwill's carrying value has decreased below its recoverable amount.

Consider the following description from Coca-Cola Amatil Limited's 2020 financial statements on goodwill.

Goodwill is the excess of the cost of a business acquisition over the fair value of net assets acquired. Goodwill is not amortised but is tested annually for impairment.

Coca-Cola Amatil Limited, Annual Report 2020.

13.10 Finance leases

Leases are rental agreements in which one individual (a lessee) pays, to the owner of a property (lessor), a certain amount in return for the right to use that property over a predetermined period. The property could be a building, a motor vehicle, equipment, aircraft, computers, or furniture and fittings. Before the issuing of accounting standards on leases, there was some concern that companies were using leases to avoid putting assets and liabilities on the balance sheet. For example, instead of borrowing \$100 000 from a bank to buy a new piece of equipment (resulting in assets and liabilities both increasing by \$100 000), some companies were

LO10

using an alternative form of financing, namely leases, and avoiding the need to include the asset and related liability on the balance sheet. As a result, the Australian Accounting Standards defined two types of leases: finance leases (called capital leases in the United States) and operating leases. Leases are classified as finance leases when all the risks and benefits incidental to ownership are substantially transferred to the lessee.

Finance leases are included on the balance sheet as follows:

- The cost is the present value of the future lease payments using an appropriate interest rate usually found in the lease agreement (discussed in the appendix to Chapter 14).
- At the same time, the present value of those payments is recorded as a liability.

Therefore, the journal entry to record the leases on the balance sheet is:

DR	Finance lease asset	XXXX
CR	Finance lease obligations liability	XXXX

After that:

- 1 The leased asset is amortised, just as the owned assets are depreciated, following a policy that is consistent with that used for owned assets but also taking into account the terms of the lease.
- 2 The liability is reduced as payments are made on the lease. Each payment is divided into principal and interest portions, so that only the principal portion is deducted from the liability and the rest is considered interest expense. This maintains the liability at the present value of the remaining lease payments.
- 3 Therefore, the expenses for using the leased asset are amortisation and interest payments recorded. Such amounts are usually combined with other amortisation and interest expenses, because the intent is to represent the economic situation fairly.
- 4 Various particulars of significant capital leases are usually disclosed in the notes to the financial statements so that the readers of the financial statements may judge the effects of such capitalisation. Separate disclosure is usual for the lease obligations liability, the terms of the lease, and related amortisation and interest expenses.

The result of these procedures is that the leased asset is treated essentially as if it were owned. Accrual accounting recognises the economic value of the asset and disregards the legalities of who owns it.

If the lease does not result in the economic equivalence of ownership (e.g. if it is really a rental situation where the owner continues to do the repairs and maintenance, generally controls the asset and regains use of the asset after a certain period), the lease is termed an operating lease. For such leases, there is no asset or lease obligation liability recognised, and the lease payments are just expensed as rent expense. If the operating lease is significant to the company, some of its particulars may be disclosed in the notes to the financial statements.

13.11 Managers and noncurrent assets

LO11

Managers need to make many judgements related to noncurrent assets. Examples include:

- What should be included in the cost of an asset, and over what period should it be depreciated?
- When should assets be revalued, and who should do the revaluation?
- Should development costs be capitalised or expensed?
- Over what period should intangibles be amortised, or are they subject to an impairment test?
- What value should be put on brand names, trademarks and so on?

All the decisions made will affect the valuation of assets, which in turn affects certain performance measures, such as return on assets (ROA), for which managers are responsible. All of the judgements (except the upward revaluation of assets) will affect the organisation's profit figure, which is again a key indicator of management performance.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Depreciation, calculations, entries and effects

At the beginning of 2021, Fortress Ltd acquired machinery that cost \$100 000, had a useful life of 10 years and zero scrap value. During 2021 and 2022 the company depreciated this machinery using the straight-line method. Assume a tax rate of 40 per cent.

- 1 Calculate the depreciation expense Fortress has recognised for 2021 and 2022 and write a journal entry to record either year's amount.
- 2 Calculate the depreciation expense Fortress would have recorded, had it been using the reducing balance method for 2021 and 2022 (assume a depreciation rate of 20 per cent).
- 3 Calculate the effects of changing from straight-line to reducing balance on the following:
 - a the balance sheet at the end of 2021
 - b the income statement for 2022
 - c the balance sheet at the end of 2022.

PRACTICE PROBLEM B

Determining the cost of noncurrent assets

On 1 January 2022, Fletcher Ltd purchased a factory (and the land on which it stood), together with the machinery in it, for \$700 000 in total. The independently determined appraisal values were:

	\$
Land	320 000
Building	180 000
Machinery	200 000

In January, a portion of the building was demolished, at a cost of \$1200, to allow for the extension of the building to house new machinery. Two hundred dollars was received for materials residual from the demolition. However, in the course of the demolition, existing machinery was damaged, requiring expenditure of \$400 on repairs. This amount was not recoverable from the demolition company. In February and March the extensions were built. Construction costs were \$40 000, architect's fees were \$4000 and legal fees were \$500. In April, new machinery was purchased for \$50 000 (list price). Sales tax of 4 per cent was paid, as were freight and installation costs of \$750. In addition, \$500 was spent on making changes to an existing machine to extend its useful life.

- 1 If a balance sheet was to be prepared at the end of April 2022, what amounts would be shown for the cost of land, buildings and machinery? Prepare separate schedules, listing individual components of the cost of land, buildings and machinery, to support your answer.
- 2 What is the effect on shareholders' equity of the transactions (if any), assuming all payments were made in cash? Briefly explain your answer.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 What is included in the cost of an asset?
- 2 What is the aim of recording depreciation?
- 3 'Without depreciation, the asset values in the balance sheet would not be appropriate.' Discuss.
- 4 What judgements need to be made by managers and accountants in calculating depreciation?
- 5 What different methods of depreciation are available? How do the methods affect profit for the year?
- 6 How do gains and losses on the disposal of assets affect the financial statements?
- 7 What is the purpose of performing an asset revaluation?
- 8 What is the impact on the profit for the year if a parcel of land is revalued upwards?
- 9 What is a recoverable amount?
- 10 List five different types of intangibles.
- 11 What is goodwill? How is it valued in the balance sheet?
- 12 Provide three examples of deferred expenditure. Where would they appear in the financial statements?
- 13 What determines whether research and development costs are capitalised or expensed?
- 14 Why record depreciation expense by debiting the expense and crediting an accumulated depreciation account? Why not just credit the asset so that the balance sheet shows just the remaining undepreciated cost? (After all, the latter method is used for prepaid expenses.)
- 15 What usage pattern of an asset by a company is a suitable match with the following depreciation methods pattern? Provide an example for each.
 - a Straight-line (even periodic expenses over the asset's life)
 - b Reducing balance (declining periodic expenses over the asset's life)
 - c Units-of-production (variable periodic expenses depending on the use of the asset)
- 16 Briefly explain what is meant by the statement: 'Under historic cost accounting, depreciation is a process of allocation.' Include in your answer some reference to the key assumptions that support the view of depreciation as an allocation process, and a brief explanation as to why the residual value of depreciable noncurrent assets is not 'depreciated'.
- 17 What is an advantage for a company of capitalising costs such as intangible assets compared to expensing? What, if any, are the disadvantages of capitalising?
- 18 Explain clearly why, and how, capitalising the costs of a development project as a deferred costs asset affects the income statement and the balance sheet.
- 19 If an asset is leased, it is not legally owned. How can accounting standards that require a leased asset be reported on a balance sheet be justified?
- 20 If a lease is treated as a finance lease rather than an operating lease, what effects does that have on the balance sheet and the income statement?
- 21 Consider this statement: 'This business of estimating depreciation appears to involve a lot of guesswork. To calculate the annual charge you guess the life of the asset, its scrap value and expected pattern of reduction in value. You tell us that there is a choice of methods available and that no method can be claimed to be correct in particular circumstances. You admit that the rate of depreciation charged for taxation purposes differs from the rate used in the accounting records. It seems to me that the company will run into difficulties with the taxation department.' Discuss.

PROBLEMS

PROBLEM 13.1

Classify expenditure as assets or expenses

Jessica and Frank own a guesthouse and spent the following:

- 1 Purchased a new air conditioning unit (\$25 000) and had it installed (\$2500).
- 2 Spent \$300 000 constructing an extension to the guesthouse.
- 3 Spent \$18 000 painting the extension.
- 4 Spent \$1500 demolishing an old building that was on the site of the extension.
- 5 Spent \$18 000 painting the old section of the guesthouse.
- 6 Spent \$23 000 replacing carpets with floorboards in the original section of the guesthouse.
- 7 Spent \$13 000 replacing electrical wiring that was faulty in the original section of the guesthouse.
- 8 Spent \$800 on new shutters (the old ones were destroyed by a guest).

For each item, state whether it is an asset or an expense. If an asset, state the amount at which it would be recorded.

PROBLEM 13.2

Cost of an asset

On 1 July 2022, Balmoral Ltd purchased some equipment for use in its operations. The useful life of the equipment is estimated to be 10 years. The estimated residual value of the equipment is \$80 000. The company had made the following expenditures:

- a purchase price of the machine (as per invoice), \$1 000 000
- b freight expense paid for by the buyer (as per the sales agreement), \$17 000
- c installation cost, paid in cash, \$23 000.

Required:

- 1 What is the total cost of the asset?
- 2 What is the depreciation expense for year 1, assuming straight-line depreciation is used?
- 3 What is the balance of accumulated depreciation at 30 June 2024?

PROBLEM 13.3

Classify expenditure as assets or expenses

Classify the following expenditures as an asset or an expense, and state your reasons why.

- 1 W Ltd bought three new delivery vans for its distribution team, for a cost of \$170 000. Two vans were air-conditioned at a cost of \$9500, and a two-way radio receiver was installed in one of the vans for \$2500.
- 2 X Ltd bought a new point-of-sale inventory system for \$150 000 and trained two employees to use it, at a cost of \$15 000. Two months later, both employees left, and an additional \$10 000 was spent training a replacement.
- 3 Y Ltd has spent \$15 000 developing a new product called Clearly. Development is not yet complete. At a recent board meeting, there was evidence that the product is likely to generate future sales and the directors voted to continue development.
- 4 Z Ltd paid for a piece of equipment to have a regular oil change for \$1500, taking place every three years.

PROBLEM 13.4

Cost of an asset, depreciation

The following events took place at Freddie Choo Painting during 2022:

- a On 1 January, Freddie bought a van for \$30 000. He had a tool chest and side racks for ladders installed for a total cost of \$5000. He paid an additional \$1000 to a signwriter to paint his name along the side of the van. The truck is expected to last for four years and then be sold for \$800. Freddie uses straight-line depreciation.
- b On 1 April, Freddie purchased 10 cases of paint rollers at auction for \$3200 (market value, \$3800). Freddie will use all the paint rollers this year and next year (50 per cent each year). The paint rollers have no salvage value at the end of this time.

- c On 1 February, Freddie paid Sydney Council \$4500 for a three-year licence (1 February 2022 to 31 January 2025) to operate his business.

Required:

- 1 What cost would be assigned to:
 - a the van?
 - b the paint rollers?
- 2 Determine the amount of depreciation, or other expense, to be recorded for each asset for the year ended 31 December 2022.
- 3 Where will these assets appear on Freddie's balance sheet as at 31 December 2022?

PROBLEM 13.5

Depreciation calculations

Lawnmowing Limited has purchased a group of new lawnmowers for \$40 000. The owner expects the mowers to last five years and to have negligible resale value at that point. The business plan projects cutting 5000 lawns over the five years, with per-year projections of 500, 1000, 1200, 1800 and 500 lawns over the five years.

- 1 Calculate the accumulated depreciation balance at the end of the second year using each of the following depreciation bases:
 - a straight-line
 - b reducing balance (25 per cent rate)
 - c units-of-production.
- 2 Based on your calculations, which depreciation basis would produce the highest retained profits at the end of the second year?
- 3 If the units-of-production method is used, assume that the actual usage equals the estimate, and on the first day of the fifth year, all the lawnmowers are sold at their scrap metal value of \$2000. Ignoring income taxes, calculate the gain or loss on sale.

PROBLEM 13.6

Depreciation methods and selection of method

Raven & Son acquired a new machine on 1 January 2019 at a cost of \$135 000. Freight and installation charges amounted to \$25 000. The machine was expected to have a useful life of four years and a residual value at the end of that period of \$10 000. During its useful life, it was expected to be operated for 25 000 hours.

- 1 Prepare a table showing the annual depreciation expense relating to the machine for each of the years ending 31 December 2019, 2020, 2021 and 2022 using:
 - a the straight-line method
 - b the reducing balance method (use a rate of 50 per cent).
- 2 Assuming that Raven & Son had used the units-of-production method, and that the machine had been operated for 7000 hours during the year ended 31 December 2022, show the journal entry to record the depreciation expense for that year.
- 3 How should Raven & Son decide which depreciation method to use? Will the choice of depreciation method have any effect on the reported profit and financial position of Raven & Son over the life of the asset?

PROBLEM 13.7

Depreciation calculations and selection of method

Wagtail Limited purchased a t-shirt printing machine for its factory on 1 July 2018 at a cost of \$812 500. It was estimated the machine will have a useful life of four years and a salvage value at the end of that period of \$32 500.

- 1 Calculate the depreciation expense that would be charged with respect to this equipment in each of the years ending 30 June 2019, 2020, 2021 and 2022 using the:
 - a straight-line method
 - b reducing balance method (use 40 per cent rate).
- 2 Outline the main factors to be considered in selecting an appropriate depreciation method for this t-shirt printing machine.

PROBLEM 13.8

Depreciation calculations, entries, effects and choice

At the beginning of 2021, HQ Corporation acquired machinery that cost \$100 000 and had an anticipated useful life of 10 years. HQ Corporation depreciated this machinery for 2021 and 2022, using the straight-line method. During 2023, it decided to change to the reducing balance method of depreciation.

- 1 Prepare the journal entry to record depreciation expense for 2022, using the straight-line method.
- 2 Prepare the journal entry to record depreciation expense for 2022 using the reducing balance method, at a rate of 20 per cent.
- 3 Show the effects of changing from the straight-line method to the 20 per cent reducing balance method on:
 - a the net profit before tax for 2023.
 - b the total assets for 2022.
- 4 In what circumstances is the use of reducing balance depreciation more appropriate than using the straight-line method?

PROBLEM 13.9

Depreciation and gain/loss calculations and effects

Michelle's Express Ltd has a small fleet of delivery trucks. Each one is depreciated on the reducing balance method (rate 20 per cent; half of that in the year of acquisition and in the year of disposal) with no salvage value. Truck 4 was purchased on 1 July 2019 for \$46 000, and sold three years later, on 30 June 2022, for \$15 000. The company's financial year-end is 31 December.

- 1 What was the total depreciation on truck 4 to the date of its disposal?
- 2 Based on your answer to question 1, write a journal entry to record the disposal of truck 4.
- 3 Redo questions 1 and 2, assuming the company uses straight-line depreciation at 15 per cent per year and an estimated salvage value of \$6000.
- 4 Calculate the different effects of the two depreciation methods on the company's 2022 profit. Ignore income tax effects.
- 5 What implications (if any) would the use of different depreciation methods by the company have for potential creditors or investors?
- 6 The use of different depreciation methods could affect financial performance comparisons between financial years for a particular company, and between different companies for the same financial year. How are these differences mitigated?

PROBLEM 13.10

T-accounts for depreciation

The following information is taken from the accounts of Lorikeet Ltd.

	\$000
Equipment, 1 July 2021	2 500
Equipment, 30 June 2022	3 900
Accumulated depreciation - equipment, 1 July 2021	800
Accumulated depreciation - equipment, 30 June 2022	600
Equipment sold during the year	
- cost price	900
- accumulated depreciation	350
- proceeds	700

What was the depreciation expense for equipment for the year?

PROBLEM 13.11

Depreciation from an annual report

Following is a note from Westwood Ltd's recent annual report:

1 Summary of significant accounting policies on noncurrent assets

Property and equipment – Property and equipment is recorded at cost and depreciation is calculated on a straight-line basis. Buildings and improvements have an expected useful life of 15–30 years, while the expected useful life of equipment is 4–15 years and furniture and fittings is 5–10 years. For 2022 and 2021, the assets included in property and equipment are as follows:

	2022 \$000	2021 \$000
Land	59 778	57 850
Buildings and improvements	150 172	149 172
Equipment, furniture and fittings	27 850	27 706
Leasehold improvements	<u>14 695</u>	<u>16 699</u>
	252 495	251 427
Less: Accumulated depreciation	<u>(55 383)</u>	<u>(50 000)</u>
	<u>197 112</u>	<u>201 427</u>

- 1 If Westwood Ltd did not sell any property and equipment in 2022, what depreciation expense would have been recorded for 2022?
- 2 Assume that Westwood Ltd did not record its depreciation expense in 2022. What is the effect of this error on the following?
 - a profit
 - b current assets
 - c noncurrent assets
- 3 What was the cost of the land purchased?

PROBLEM 13.12

Various depreciation methods

On 1 December 2021, Aigo Ltd acquired additional equipment at a cost of \$120 000, less a trade discount of 25 per cent. The terms of payment were 2/10, n/30. Payment was made on 20 December 2021. Freight charges were \$7500 and installation and testing cost \$2500. The equipment was installed in the factory and ready for use on 1 January 2022.

The equipment was expected to have a useful life of five years and a salvage value of \$4500. During its life, the equipment was expected to produce 850 000 units of output. During the year ended 30 June 2022, the equipment was used to produce 80 000 units.

Calculate the depreciation expense to be charged in the accounts of Aigo Ltd, with respect to this new equipment for the financial year ended 30 June 2022, using:

- 1 the reducing balance method (assuming a rate of 50 per cent)
- 2 the straight-line method
- 3 the units-of-production method.

PROBLEM 13.13

Comparison of methods of depreciation

Carrington Limited recently purchased certain manufacturing equipment for \$810 000. The equipment is expected to have a useful life of four years and a salvage value of \$10 000. The manager of Carrington Limited wishes to know the effect that various depreciation methods will have on the reported profit of the company and asks you to prepare a schedule comparing the straight-line and the reducing balance methods of depreciation (use 0.6667 for reducing balance).

- 1 Calculate the annual depreciation expense and end-of-year carrying amount of the equipment for each year of its estimated useful life. Show your workings.
- 2 What are the main factors that are likely to influence the useful life of a depreciable asset? What factors are likely to influence the manager in selecting a depreciation method?

PROBLEM 13.14

Comparison of depreciation methods

Part A

Technicolour Ltd owns a nightclub in the centre of Sydney. In a major refurbishment, it purchased a new sound system and a new lighting system on 1 April 2022.

The sound system cost \$27 000 to purchase and \$3500 to install. The lighting system cost \$44 000.

The sound system has a useful life of five years and the lighting system, four years. Both are depreciated on a straight-line basis, assuming no residual value.

- 1 What is the cost and the written-down value for the assets discussed as at 31 December 2022?
- 2 Would Technicolour's profit be higher or lower for the year ended 31 December 2022 if it had adopted the reducing balance method of depreciation (use 150 per cent of straight-line rate)? Use the same data in the question to calculate your answer.

Part B

This question continues the scenario outlined in Part A.

On 1 May 2022, it was found that the lighting system was no longer flashing ultraviolet rays in time with the music (as it should). It cost \$700 to have this fixed. On 1 October 2022, \$5000 was spent to give the sound system a heavier bass beat.

What is the appropriate accounting treatment for the events that occurred on 1 May 2022 and 1 October 2022?

PROBLEM 13.15

Journal entry for asset disposal

Extract from balance sheets at 30 June:

	2023	2022
	\$	\$
Equipment	980 000	821 000
Less: Accumulated depreciation	<u>(400 000)</u>	<u>(320 000)</u>
Equipment net	<u>580 000</u>	<u>501 000</u>

Additional information:

- (i) Depreciation expense for the year is \$120 000.
- (ii) Cash proceeds for disposal of equipment during the year amounted to \$120 000, resulting in a loss on sale of \$20 000.

Prepare the journal entry for the disposal of equipment.

PROBLEM 13.16

Asset disposal

Extract from balance sheets at 30 June:

	2023	2022
	\$	\$
Equipment	820 000	700 000
Less: Accumulated depreciation	<u>(400 000)</u>	<u>(340 000)</u>
Equipment net	<u>420 000</u>	<u>360 000</u>

Additional information:

- (i) Purchased additional equipment for \$200 000.
- (ii) Proceeds from the sale of equipment was \$60 000 with a gain on sale of \$20 000.

Prepare the journal entry for the sale of equipment.

PROBLEM 13.17

Asset disposal

Top Speed, a leading courier company, sold a small delivery truck that had been used in the business for five years. The records of the company reflected the following:

Delivery truck cost	\$58 000
Accumulated depreciation	\$39 000

What is the journal entry for the disposal of the truck, assuming that the truck sold for:

- 1 \$19 000 cash?
- 2 \$29 000 cash?
- 3 \$7100 cash?

PROBLEM 13.18

Capitalising versus expensing

Zome Pizza Ltd is a new start-up company which uses trucks enabled with robots, artificial intelligence (AI), and GPS to cook pizza en route to customers' homes and arrive just as the pizza is fresh out of the oven. A customer orders a pizza on Zome Pizza Ltd's app. Once a customer order is received, a worker inside the truck will toss the dough, cut the toppings, and then place the toppings on top of the pizza. A robot contributes to the pizza production by putting on the pizza sauce and timing the oven to come on exactly four minutes before the truck reaches the customer's house. Each pizza truck contains five pizza ovens, with each oven individually connected to the app order system and the truck's GPS. On arriving at the customer's home a food truck worker removes the pizza from the oven and places it into a cutting device, where the robot cuts the pizza. Lastly the worker places the pizza in a box and the pizza is delivered to the customer's door, all within a few minutes of being freshly baked. Eventually, Zome Pizza Ltd's managers hope to use a robot to remove pizzas from the oven as well.

Consider one of Zome Pizza's trucks, which had the following costs as at 30 June 2022:

Pizza truck	\$135 000
Five pizza ovens	\$ 55 000

During the 2023 financial year, the pizza truck has accumulated depreciation of \$16 000. Zome Pizza Ltd made the following expenditures:

Equipment maintenance and repairs	\$ 5 000
Major equipment upgrade to improve pizza ovens	\$25 000

The pizza truck has an expected useful life of 20 years, and a residual value of \$5000. Zome Pizza Ltd depreciates equipment on a straight-line basis.

- 1 Should Zome capitalise or expense the cost of the five pizza ovens inside the truck? What is the reason for this decision?
- 2 If a Zome Pizza truck needs replacement tyres after it has been driven 120 000 km, should the cost of those tyres be capitalised or expensed? What is the impact of each treatment on the financial statements?
- 3 Prepare the journal entries to record the two expenditures incurred during the 2023 financial year.
- 4 Indicate the effects of the two expenditures made during the 2023 financial year on assets, liabilities and shareholders' equity.
- 5 What is the journal entry that would be made on 30 June 2023 for depreciation of the pizza truck?

PROBLEM 13.19

Correcting errors relating to noncurrent assets

The following errors were discovered in the books of the Tribune Company during the current year, before the books were closed as at 31 December.

- 1 Depreciation of \$2140 relating to machinery was incorrectly credited to the accumulated depreciation – buildings account.
- 2 A machine with a cost of \$22 500 and accumulated depreciation to the date of sale of \$16 000 was sold for \$8000. The sale was recorded by debiting the cash at bank account and crediting the machinery account for \$8000.
- 3 The cost of delivery equipment purchased on 1 July for \$7900 was debited to the purchases account. The equipment has a useful life of four years and estimated residual value of \$900. Straight-line depreciation is used for delivery equipment.
- 4 The cost of installing lighting in the company car park (\$12 000) was charged to the maintenance expense account on 4 January, the date of purchase. The lights have a useful life of eight years and no residual value. Assume straight-line depreciation.

Prepare general journal entries to correct the errors (if there are any).

PROBLEM 13.20

Correction of errors and revaluation of noncurrent assets

During the audit of the accounts of Hogarth Ltd for the year ended 31 December 2022, it was discovered that the following errors had been made during the year:

- 1 Store fixtures that had cost \$12 000 were sold for \$1200 cash. The accumulated depreciation at the date of sale was \$8500. The sale was recorded by a debit to cash at bank and a credit to store fixtures for \$1200.
- 2 On 1 July 2022, a fence was erected around the company's office building at a cost of \$9000. This was charged to maintenance expense. The fence is expected to have a useful life of 10 years and no residual value. Assume straight-line depreciation.
- 3 A truck was purchased on 1 January 2022 at a cost of \$10 000. This was debited to the purchases account. The truck is expected to have a useful life of four years and a residual value of \$1296. It is to be depreciated by the reducing balance method (use 40 per cent).
- 4 Another block of land, which was purchased for \$20 000 in 2008 and revalued at \$25 000 during 2020, was found to have a fair value of only \$15 000 at 31 December 2022. No entry has been made yet to record the fall in the value of this land.

Prepare general journal entries to correct the listed errors, together with any necessary adjusting entries as at 31 December 2022.

PROBLEM 13.21

Revaluation of noncurrent assets

Crane Ltd had the following noncurrent asset on its balance sheet on 30 June 2024. The company adopts a policy of depreciating all relevant items on a straight-line basis over a 10-year period with no residual value.

	\$
Building	200 000
Less: Accumulated depreciation	<u>(50 000)</u>
	<u>150 000</u>

- 1 What is the carrying amount of the building on 1 January 2025?
- 2 On 1 January 2025, the directors of Crane decide to revalue the building to \$400 000 to reflect its market value. Prepare the necessary journal entries.

PROBLEM 13.22

Revaluation of noncurrent assets

Peregrine Ltd had the following noncurrent assets on its balance sheet at 30 June 2023:

	\$	\$
Land	320 000	
Plant and equipment	150 000	
Less: Accumulated depreciation	(15 000)	135 000
		455 000

On 1 July 2023, the land was revalued to \$450 000, and the plant and equipment was revalued to \$120 000. One year later, on 1 July 2024, the recoverable amount of the plant and equipment was determined to be \$150 000, and it was revalued accordingly. Depreciation for all relevant items is on a straight-line basis, over a 10-year period with no residual value.

- 1 Prepare journal entries to record the revaluation of the land on 1 July 2023.
- 2 Prepare journal entries to record the revaluation of the plant and equipment on 1 July 2023.
- 3 Prepare journal entries to record the revaluation of the plant and equipment on 1 July 2024.
- 4 Assuming that there are no acquisitions or disposals of noncurrent assets, construct the noncurrent assets section of Kingfisher's balance sheet as at 30 June 2025.

PROBLEM 13.23

Impairment

An airline's property, plant and equipment account includes a plane that cost \$10 million and has accumulated depreciation of \$6 million. The plane can be sold for \$3 million. The present value of future cash flow is \$3.5 million.

- 1 Calculate:
 - a book value
 - b recoverable amount
 - c fair value
 - d value in use.
- 2 What is the amount of impairment?

PROBLEM 13.24

Amortisation and asset impairment

Pharma Ltd has four intangible assets on its financial statements and the following information is provided about these assets:

- a Patent: On 1 July 2022, Pharma Ltd purchased a patent for a headache drug called Cerbrex for \$60 000 cash. The estimated useful life of the patent is 15 years.
- b Copyright: On 1 July 2022 Pharma Ltd purchased copyright on a drug called Rexit for \$45 500 cash. The estimated useful life is 10 years.
Record the amortisation, if any, as at 30 June 2025.
- c Licence: On 1 July 2022 Pharma Ltd obtained a wholesale licence from the NSW Government for \$65 000 cash. This licence allows the company to sell its pharmaceutical drugs in NSW for a period of 25 years.
- d Goodwill: On 1 July 2022 Pharma Ltd acquired another company, Texa Ltd, for cash consideration of \$1 000 000. The acquisition price includes goodwill of \$235 000, which is expected to have an indefinite life.

Required:

- 1 What amount, if any, of amortisation should be recorded for each of the above on 30 June 2023?
- 2 For each of the intangible assets, what amount will be recorded on the balance sheet as at 30 June 2024?

- 3 On 1 August 2025 there is a recent court ruling that Pharma Ltd has lost its exclusive right to manufacture Cerbrex using its patent and the patent will expire on 30 April 2026. While Pharma will most likely challenge the court ruling, it looks like the patent that Pharma holds on Celebrex may expire on 30 April 2026. What amount of impairment, if any, should be recorded?
- 4 If Pharma's Cerbrex patent does expire on 30 April 2026, how will this impact Pharma's income statement for the period ended 30 June 2026?
- 5 If Pharma's Cerbrex patent does expire on 30 April 2026, how will this impact Pharma's balance sheet for the financial year ended 2026?

PROBLEM 13.25

Calculate any goodwill on a business purchase

Foofaraw Ltd paid \$200 000 for the land, buildings, inventories and accounts payable of another business that will become a branch. The assets (after deducting the accounts payable of \$50 000) had an aggregate fair market value of \$187 000.

- 1 What (if anything) is the resulting asset on Foofaraw's balance sheet?
- 2 If Foofaraw had paid \$185 000, what would be your answer to question 1?

PROBLEM 13.26

Journal entry for a business acquisition

Grand Designs Ltd decided to buy parts of a competitor's business, which was cutting back operations.

For a price of \$4.2 million (\$1 million down payment and the rest in four equal annual instalments, plus interest at 12 per cent per annum), Grand Designs got inventory it valued at \$280 000, land it valued at \$1.5 million, a retail store building it valued at \$1.8 million, furniture and equipment it valued at \$470 000 and some dealership rights it valued at \$40 000. Grand Designs also agreed to pay a bank loan of \$130 000 secured by the inventory.

Write a journal entry to record Grand Designs Ltd's purchase.

CASES

CASE 13A

Woolworths Limited

Refer to the extracts of the 2021 annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 The company depreciates 'plant and equipment'. Provide examples of plant and equipment.
- 2 Are buildings depreciated?
- 3 What is the total depreciation and amortisation for the year?
- 4 How much did the accumulated depreciation and accumulated amortisation accounts increase by?
- 5 Why aren't the answers to questions 3 and 4 the same?
- 6 What method of cost allocation is used by the company to determine depreciation?
- 7 Did Woolworths dispose of (e.g. sell) any property, plant and equipment during the year? If so, did it make a profit or loss on these sales? How would this profit or loss be calculated?
- 8 Does the company revalue upwards any property, plant and equipment? If so, how frequently?
- 9 What intangibles does the company have? How are they valued? Over what period are they amortised? Where are they located in the financial statements?
- 10 Companies can have both operating and finance leases. When does Woolworths disclose information on operating leases?
- 11 What does Woolworths say about recoverable amount?
- 12 What does Woolworths say about impairment of tangible assets?

CASE 13B

Accounting policy for noncurrent assets

The accounting policy for Parabadoo Mining for property, plant and equipment is as shown.

Property, plant and equipment

Owned assets: Items of property, plant and equipment are stated at cost or deemed cost less accumulated depreciation and impairment losses. The cost of self-constructed assets includes the cost of materials, direct labour and an appropriate proportion of production overheads. Assessment of impairment loss is made in accordance with the impairment policy.

Leased plant and equipment: Leases under which the company assumes substantially all the risk and rewards of ownership are classified as finance leases. Other leases are classified as operating leases. Finance leases are capitalised. A lease asset and a lease liability equal to the present value of the minimum lease payments are recorded at the inception of the lease. Lease liabilities are reduced by repayments of principal. The interest components of the lease payments are expensed. Contingent rentals are expensed as incurred. Operating leases are not capitalised and lease costs are expensed.

Depreciation: Items of property, plant and equipment, including buildings and leasehold property but excluding freehold land, are depreciated using the straight-line method over their expected useful lives. Assets are depreciated from the date of acquisition or, in respect of internally constructed assets, from the time an asset is completed and held ready for use. Mining assets are amortised over the expected life of the identified resources using the units of production method.

- 1 Show the effect of acquisition, disposal, leasing and depreciation on the accounting equation.
- 2 What depreciation methods are used by the company? What factors determine which method gives the larger depreciation in a year? Would the total depreciation over the life of the asset differ between methods?
- 3 What judgements do accountants need to make in calculating depreciation, and how do these judgements impact profit?
- 4 Provide three actions by management that could shift profit from one accounting period to another.

CASE 13C

Intangibles

- 1 The accounting policy disclosures for News Corp in 2020 refer to a range of intangibles. Explain what each of the following would represent for News Corp:
 - a newspaper mastheads
 - b trademarks and tradenames
 - c distribution networks
 - d customer relationships
 - e goodwill.
- 2 Explain why radio broadcast licences, distribution networks, customer relationships and computer software are treated as assets.
- 3 What is an alternative accounting treatment to capitalising software costs? What impact would a change to this other method have on the financial statements?
- 4 How would the period of amortisation be determined?
- 5 What impact would an increase in the number of years over which an intangible asset is amortised (e.g. from two years to four years) have on the financial statements?

CASE 13D

Asset valuations

Large airlines, like Qantas, invest billions of dollars in aircraft which are recorded as assets on their balance sheets.

The profitability of airlines is closely linked to fuel prices, so an increase in fuel prices (or a change in exchange rates) will likely have a negative impact on profit. In a situation like this, the value of the aircraft may

need to be written down to reflect lower in-use valuations. Depreciation of aircraft may also be adjusted to reflect lower valuations.

Another increasingly important element of the business of airlines is their loyalty schemes which are also recorded as assets on the balance sheet and are subject to the same rules as other types of assets.

- 1 What is meant by in-use valuations? How does a profit outlook challenge in-use valuations?
- 2 What is the impact on the financial statements of hastening depreciation on aircraft or a massive write-down in the financial statements?
- 3 Why was the loyalty scheme considered an asset? What would be the impact of writing down the value of a loyalty scheme?

CASE 13E

Judgements in asset valuations

Consider the following extract from the financial statements of a large furniture retailer:

Property, plant and equipment

Plant and equipment assets are stated at historical cost less accumulated depreciation and any accumulated impairment losses. Land and buildings are measured at fair value less accumulated depreciation on buildings and leasehold land and any impairment losses recognised at the date of the revaluation. Valuations are performed frequently to ensure that the fair value of a revalued asset does not differ materially from its carrying amount.

Depreciation is calculated on a straight-line basis over the estimated useful life of the asset as follows:

- Land – not depreciated
- Leasehold land – lease term
- Buildings under construction – not depreciated
- Buildings – 10 to 50 years
- Owned plant and equipment – 3 to 20 years
- Plant and equipment under finance lease – 1 to 20 years.

The assets' residual values, useful lives and amortisation methods are reviewed, and adjusted if appropriate, at each financial year end.

- 1 List any judgements that need to be made by management that will have an effect on the income statement and on the balance sheet of the retailer.
- 2 Why is it important that these judgements be disclosed to users of financial statements?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

13A All of the costs would be included except 'an estimate of costs to maintain the factory over the next five years'. This is a future cost that would be included in expenses in each of the five years.

13B (i)	\$225 000
(ii)	\$525 000
(iii) Equipment	750 000
less: Accumulated depreciation	<u>225 000</u>
Equipment (net)	<u>525 000</u>

13C Depreciation expense is used in order to allocate the cost of long-lived assets over their useful lives. The most appropriate method would match the depreciation expense for each period with the presumed economic benefit obtained during that period.

13D

	\$	\$
DR Cash	5 000	
DR Accumulated depreciation	25 000	
DR Loss on sale	10 000	
CR Equipment		40 000

- 13E (i) Cost minus accumulated depreciation.
 (ii) Refers to whichever is higher: an asset's fair value less the costs to sell it or an asset's value in use.
 (iii) The amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's-length transaction less costs.
 (iv) The present value of future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life.
- 13F If expensed, the \$5 million goes to expense in Year 1 and there is no balance sheet effect; if capitalised, \$5 million goes to the balance sheet and then each year \$500 000 goes to amortisation expense (income statement) and the asset in the balance sheet is decreased by \$500 000 (accumulated amortisation).

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- Depreciation would be 10 per cent of cost per year: \$10 000 in 2021 and 2022. The entry would debit depreciation expense and credit accumulated depreciation with the \$10 000.
- Depreciation for 2021 would be 20 per cent of \$100 000 = \$20 000
 Depreciation for 2022 would be 20 per cent of (\$100 000 – \$20 000) = \$16 000
- a Accumulated depreciation increases by \$10 000.
 Retained profits decreases by \$6000 (\$10 000 – \$4000 tax).
 b Depreciation expense under SL = \$10 000
 Depreciation expense under reducing balance = $(\$100\ 000 - \$20\ 000) \times 20\% = \$16\ 000$. Therefore difference is \$6000 before tax and \$3600 after tax.
 c Accumulated depreciation increases by \$16 000; retained profits decreases by \$9600.

PRACTICE PROBLEM B

- Schedules:

	\$
Land	
At cost	<u>320 000</u>
Building	
At cost	180 000
Demolition	1 200
Construction costs	40 000
Architect's fees	4 000
Legal fees	<u>500</u>
	225 700
Less salvage	<u>(200)</u>
	225 500

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Machinery

At cost	200 000
New machinery	50 000
Sales tax (4%)	2 000
Freight and installation	750
Improvement to existing machine	<u>500</u>
	253 250

- 2 Shareholders' equity would decline by \$400, being repairs to machinery damaged during demolition.

14 Liabilities



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** define a liability and outline the essential characteristics of liabilities (14.1)
- LO2** explain the basic measurement principles for liabilities (14.2)
- LO3** outline the financial statement presentation for liabilities (14.3)
- LO4** provide accounting entries for current liabilities including accounts payable, notes payable, short-term accruals and employee deductions (14.4)
- LO5** understand the alternatives for company financing and how to account for them (14.5 and 14.6)
- LO6** explain the different types of tax liabilities (14.7)
- LO7** explain how a provision differs from other types of liabilities, and when it can be recognised (14.8)
- LO8** identify and explain the purpose of contingent liabilities (14.9)
- LO9** explain off balance sheet financing (14.10)
- LO10** understand how to account for GST (14.11).

CHAPTER OVERVIEW¹

Chapters 11 to 13 covered, in some detail, particular types of assets: cash, accounts receivable, inventory and noncurrent assets. This chapter provides a more detailed coverage of liabilities, which were introduced throughout Chapters 1 to 5 of the book.

14.1 What is a liability?

You may recall the following discussion of liabilities from Chapter 8. We have repeated it here to allow instructors to cover this chapter earlier if they wish. Also, an understanding of this material is critical for the remainder of the chapter. The *Framework for the Preparation and Presentation of Financial Statements* defines a liability as a present obligation of the entity to transfer an economic resource as a result of past events.

LO1

The *first* criterion is the entity has an obligation.

- An obligation is a duty or responsibility that an entity has no practical ability to avoid.
- Obligations are generally established by contract, legislation or similar means, and are normally enforceable by other parties. However, the obligation can arise from customary practices, company announcements, and published policies (e.g. public announcements about refund policies would be an example).
- In some circumstances, there is uncertainty about whether an obligation exists. For example, an entity is sued about a product malfunction but the case has not yet gone to court. Until the matter is resolved, there is uncertainty whether the entity has an obligation and consequently whether a liability exists (this issue is discussed further in our next section).

The *second* criterion for a liability is an obligation to transfer an economic resource.

- To satisfy this criterion, the obligation must have the potential to require the transfer of an economic resource to another party; the transfer may be required only if a specified future event occurs. It is necessary that the obligation exists and that in at least one circumstance it would require the transfer of the economic resource.
- These obligations to transfer an economic resource include obligations to pay cash, deliver goods or services (e.g. provide a training course where the participant has paid in advance) and an obligation to transfer an economic resource if a specified uncertain future event occurs (e.g. an insurance claim paid by the insurance company if a fire results in property damage).

Again, we should consider some of the content of this definition from the Framework:

- Settlement of a present obligation can occur via:
 - payment of cash
 - transfer of other assets (e.g. a company has received a deposit on a piece of equipment it is providing; it later transfers that equipment to the person who paid the deposit)
 - provision of services, where amounts have been received in advance of services being provided (as when there has been a receipt of cash for a future airline flight), the liability is later removed by providing the service (i.e. providing the flight for the passenger)
 - replacement of an obligation with another obligation (e.g. accrued expenses may later become accounts payable when the company receives an invoice from the supplier)
 - conversion of the obligation to equity (e.g. issuing shares to a company to extinguish a debt).

The *third* criterion for a liability is that the present obligation exists as a result of a past event. According to the Framework, a present obligation exists only if the entity has obtained economic benefits or taken an action and as a consequence will need to transfer economic resources. One example where an entity has not yet obtained economic benefits or taken an action would be the signing of a contract to pay an employee a salary at a certain rate of pay. The signing of the contract does not create a present obligation to pay the salary until the employee's services have been provided for a period of time. The liability then becomes the amount of salaries earned by that employee. Past transactions would include the acquiring of goods and services (accounts payable), employees performing work (wages payable or provision of employee entitlements), the use of money from the bank (interest payable), receipt of a bank loan (bank loan), sale of goods (provision for warranty) and receipt of cash in advance of providing a service (unearned revenue).



HOW'S YOUR UNDERSTANDING?

14A Which of the following meet the definition and recognition criteria for liabilities and would be included in the financial statements? If the item would be included, list the name of the liability.

- (i) Amounts owing to suppliers for goods received.
- (ii) Amounts owing to employees for work done during the year but not yet paid.
- (iii) An order placed for \$10 000 for inventory.
- (iv) Amounts owing in holidays to be taken in future years.
- (v) Cash received by an airline for the purchase of a ticket to the United States next month.

14.2 General measurement principles

LO2 This section summarises the basic principles and important things you should know about the measurement of liabilities, their valuation on the balance sheet and their connection to profit measurement. Only some parts will be new to you, but you should find the summary useful.

Monetary liabilities (such as accounts payable, notes payable and loans) are measured at the present value (PV) of the cash flows associated with their service and eventual payment. PV is determined by discounting the cash flows at the rate of interest implicit in the original contract or other arrangement. Application of this principle means that most monetary liabilities are recognised in the financial statements at their face value. Items that are expected to be settled in the short term – such as trade creditors, accruals and current tax payable – are recognised at their face value because the rate of interest implicit in the contracts or other arrangements relating to those items is zero. (However, a payable that is subject to settlement discount is shown net of such discount.) In subsequent periods, monetary liabilities are adjusted to reflect any payments made to partially discharge the liability, but they are not adjusted for any valuation changes. Similar principles apply for non-monetary liabilities (e.g. provisions, discussed in section 14.8). However, an initial estimate is generally required to measure the expected future cash flows and the carrying amount is, subsequently, adjusted to reflect revised estimates arising over future periods. For example, as the total liability for holiday leave increases, the amount of the liability would be adjusted.

The principles discussed have some important implications:

- The application of historical cost accounting to liabilities means that the amounts for most liabilities are those that arose when the debt was incurred. This is normally the same amount as will actually be paid.
- There is no recognition of non-historical interpretations of the debt. For example, interest that will have to be paid but has not yet accrued; for example, if a debt is due in two years, only the interest owed at the end of the present financial year, not the interest for the next two years, will be recorded.
- Unless there is evidence to the contrary, the company is assumed to be a 'going concern' and, therefore, debts are shown at the amounts that would normally be paid, and are expected to be paid, not at some other liquidation value that might be negotiated with creditors if the company got into serious financial trouble.
- When a liability increases, one of the following will also occur:
 - an expense will increase (e.g. wages expense/wages payable; employee entitlement expense/provision for employee benefits)
 - an asset will increase (e.g. cash/loan; inventory/accounts payable)
 - another liability will decrease (accounts payable/notes payable).

14.3 Financial statement presentation of liabilities

To assist users of financial reports in understanding the nature of liabilities, they (like assets) are normally presented in the balance sheet under current and noncurrent subcategories – unless presenting in broad order of their liquidity provides more relevant and reliable information.

LO3

A current liability is one that is expected to be settled within 12 months of the reporting date or in the normal course of the entity's operating cycle, where this can be clearly identified. All other liabilities are considered to be noncurrent (or long-term) liabilities. Thus, the principal difference between current and noncurrent liabilities is just their timing. For example, a bank loan due in five months is shown as a current liability, while one due in five years is a noncurrent liability. Their due dates may be the primary feature that distinguishes them. Similarly, an accrual for an expense that is expected to be paid in eight months is a current liability, while one that is expected to be paid in 18 months is a noncurrent liability. Both are accruals used for profit measurement but they may differ primarily in timing. Because noncurrent liabilities tend to be harder to estimate as the future is further away, there may be more practical complexities for noncurrent liabilities than for current ones.



FOR YOUR INTEREST

When auditors are examining the accounts, they pay particular attention to ensuring that no current liabilities have been left out of the balance sheet, because an understatement of liabilities results in the overstatement of profits (think back to the accounting equation: for example, when a liability is understated an expense is usually understated). Banks are asked to provide written confirmation of loans, payments in the next period are reviewed to see if any are for liabilities and corresponding expenses that should have been recorded in this period, and accruals for unpaid wages, income taxes, interest and other expenses are checked.

Clarifying which liabilities are current, and which are not, is important for several reasons. The total current liabilities are part of the calculation of working capital, and the working capital ratio (current assets ÷ current liabilities) is very important in assessing an organisation's financial strength. Many of the current liability accounts are accruals of expenses, so ensuring profit is measured properly requires that the accruals are right.

As is true of assets, liabilities are significant both for their effect on balance sheet valuation and their connection to profit measurement. Their principal effect on profit measurement is through their association with expenses. Expenses arise from consuming the economic value of assets, such as inventory or fixed assets, but also from incurring liabilities. The incurrence of liabilities arises from expense recognition prior to the cash flow. Such accruals include accounts payable, income tax payable, employee entitlement liability (provision for employee entitlements) and warranty liability (provision for warranties) – topics that have been mentioned in earlier chapters and are examined in this chapter. Liabilities are sometimes associated with revenues, too, such as via the unearned revenue liability for revenue collected before it is earned (i.e. cash, an asset, increases and unearned revenue, a liability, increases also). However, their main importance to profit measurement is through expenses.

Current and noncurrent liabilities are further classified according to their nature (liquidity, expected timing of settlement, source, security or other conditions attached to them). Consistent with this approach, the following line items (having a separate line for each item) are required disclosures on the face of the balance sheet: payables, interest-bearing liabilities, tax liabilities and provisions. Figure 14.1 provides some examples of each.

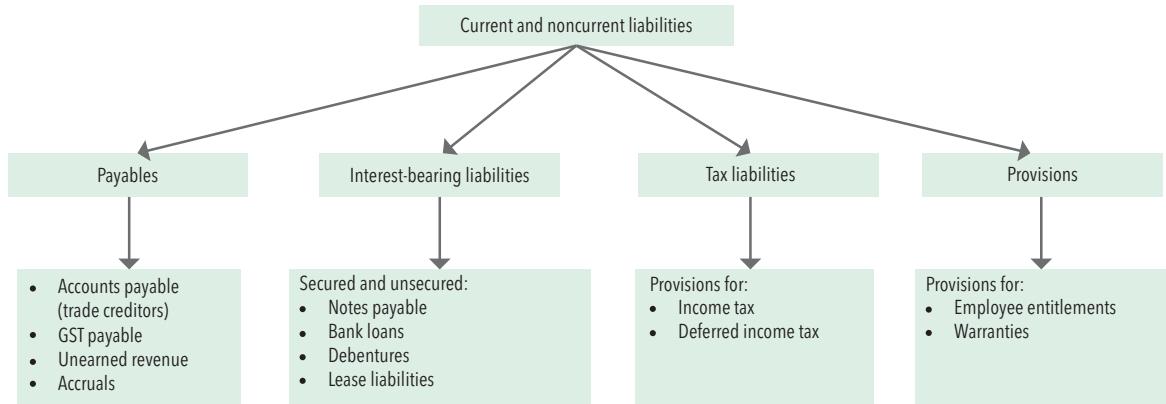


FIGURE 14.1 Typical liability disclosures

14.4 Payables

LO4 The most common types of payables are accounts payable and accruals. Accounts payable (also called trade payables or trade creditors) are the amounts owed to suppliers for the purchase of inventory, supplies and services. These purchases are usually on open account, meaning that they are purchased on credit, and payment is to be made within a short period of time following delivery, such as within 30 days. When the invoice for the good or service is received, either an asset account (such as inventory or supplies asset) or an expense account (such as advertising expense or repairs expense) is debited and accounts payable is credited. When the creditor is paid, accounts payable is debited and cash is credited. Such transactions were considered in Chapters 3 and 10.

In contrast with accounts payable, accruals are liabilities to pay for goods or services that have been received or supplied but have not been invoiced or the amount is yet to be formally agreed with the supplier. Accruals are a product of the matching process behind profit measurement. They are usually determined very carefully, because if they are not, an imprecise cut-off of the expenses between the relevant accounting periods would make both the current year's and next year's profit wrong. As a result, one would be overstated and one understated. That is, omitting an accrued expense will overstate the year's profit. These short-term accruals were discussed in Chapter 4.

Typical accruals include accrued interest and accrued wages (or wages payable), but can include other estimates such as the amounts owing to contractors who have not yet sent an invoice but who have done the work during the financial period. Other examples of these include an estimate for electricity and other utilities that have been used in the accounting period but for which the invoice for actual usage has not been received. These are accounted for by an adjusting journal entry involving a debit to an expense account and a credit to a current liability account.

Other accruals relate to collecting money on behalf of others the organisation then owes – deducting income tax, superannuation contributions, union dues, and many other deductions from employees' pay. You've probably experienced these employee deductions. For example, you think you have earned, say, \$250, but your pay cheque is, say, only \$180 because of all the deductions. The employer is acting as a channel to get your income tax and other contributions to the government, the union, the medical insurer or wherever it is to go.

Employee deductions have some complications that the accounting system has to handle. One is that each deduction normally has to be sent to a different place; for example, income tax deducted goes to the government, union dues deducted go to the union, and so on. A second complication is that the employer often has to pay on-costs in addition to the amount deducted from the employee. Superannuation, and many kinds of medical insurance and other insurance, are examples of these on-costs. Therefore, the wages the employee earns are not the only expense the employer incurs.

Suppose an employee earns \$1100 a week and the following deductions are made: income tax \$300, superannuation \$50, union dues \$40 and medical coverage \$65. Therefore, the employee will only receive a net take-home pay of \$645. In addition, the employer has to pay some on-costs: superannuation \$45, workers' compensation insurance \$15 and payroll tax due \$67. So, to the employer, the total cost of having the employee for the period is \$1100 plus on-costs, or \$1227 (\$1100 + \$45 + \$15 + \$67). Let's see how the accounting records would show all this (in the two entries that follow or one combined entry):

		\$	\$
DR	Wages expense	1 100	
CR	Income tax deductions due	300	
CR	Superannuation due	50	
CR	Union dues due	40	
CR	Medical insurance premiums due	65	
CR	Wages payable	645	
DR	On-costs expenses (or include in wages expense)	127	
CR	Superannuation due	45	
CR	Workers' compensation insurance due	15	
CR	Payroll tax due	67	

In the previous example, superannuation contributions are made by both the employee (\$50) and the employer (\$45), which is common practice.

Accruals are often reported as part of accounts and other payables rather than reported separately in the footnotes to the financial statements. Other payables that may be separately listed in the footnotes include other (non-trade) creditors, amounts due on construction contracts, and goods and services tax payables (GST). (Accounting for GST is considered in section 14.11.)



HOW'S YOUR UNDERSTANDING?

14B Why is it important to measure current liabilities accurately?

Unearned revenue can arise from customer deposits, and other revenue received in advance. Although not necessarily a legal debt, unearned revenue is an economic one, in that the organisation has received the cash but has not yet earned the money. Examples are very common in the airline industry, insurance industry and many service organisations that receive cash in advance of providing a service (see Chapter 4). Unearned revenue is also often included under other payables.

14.5 Interest-bearing liabilities: short term²

Short-term interest-bearing liabilities primarily include bank overdrafts, notes payable and various forms of debt securities, such as bank loans and borrowings. A bank overdraft provides a company with a line of credit up to a pre-established amount, and avoids the cost of applying for small loans. Notes payable (sometimes called bills payable or bills of exchange) are written promises to repay a loan plus interest at a specified date to a bank or other lender. Importantly, the interest-bearing characteristic and the written documentation distinguish notes payable from accounts payable.

Notes may be issued when merchandise or other assets are purchased where trade credit is not available or is impractical. They may also be issued to creditors to temporarily satisfy an account payable created earlier. For example, assume that a business issues a 90-day, 12 per cent note for \$1000, dated

LO5

1 August 2022 to Murray Ltd for a \$1000 overdue account. The entry to record the issuance of the note is as follows:

			\$	\$
Aug. 1	DR	Accounts payable	1 000	
	CR	Notes payable		1 000
<i>Issued a 90-day, 12 per cent note on account</i>				

When the note matures, the entry to record the payment of \$1000 principal plus \$30 interest ($\$1000 \times 12\% \times 90/365$ rounded to the nearest dollar) is as follows:

			\$	\$
Oct. 30	DR	Notes payable	1 000	
	DR	Interest expense	30	
	CR	Cash		1 030
<i>Paid principal and interest due on note</i>				

If the note had not matured at year-end, it would be necessary to take up the accrued interest (debit interest expense; credit interest payable).

Notes payable entries are presented from the viewpoint of the borrower. To illustrate this, the following entries are journalised for a borrower (Bowden Ltd), which issues a note payable to a creditor (Coker Ltd) (recall that the terminology 2/10, n/30 means that a 2 per cent discount will be given if paid within 10 days; otherwise the full amount is due within 30 days):

			\$	\$
1 May	Bowden Ltd purchased inventory on account from Coker Ltd, \$10 000, 2/10, n/30.	DR	Inventory	10 000
		CR	Accounts payable	10 000
31 May	Bowden Ltd issued a 60-day, 12% note for \$10 000 to Coker Ltd on account.	DR	Accounts payable	10 000
		CR	Notes payable	10 000
30 July	Bowden Ltd paid Coker Ltd the amount due on the note of 31 May. Interest $\$10 000 \times 12\% \times 60/365$.	DR	Notes payable	10 000
		DR	Interest expense	197
		CR	Cash	10 197

Notes may also be issued when money is borrowed from banks. These are often called commercial bills payable. For example, assume that on 19 September, a firm borrows \$4000 from First National Bank by giving the bank a 90-day, 15 per cent note. The entry to record the receipt of cash and the issuance of the note is as follows:

			\$	\$
Sept. 19	DR	Cash	4 000	
	CR	Notes payable		4 000
<i>Issued a 90-day, 15 per cent note to the bank</i>				

On the due date of the note (18 December), the borrower owes \$4000, the principal of the note, plus interest of \$150 ($\$4000 \times 15\% \times 90/365$). The entry to record the payment of the note is as follows:

			\$	\$
Dec. 18	DR	Notes payable	4 000	
	DR	Interest expense	148	
	CR	Cash		4 148
<i>Paid principal and interest due on note</i>				

It is important to understand that a debt may comprise a current and a noncurrent component. In order to determine current liabilities, GAAP requires that if there is a noncurrent debt on which some payment is to be made within the next year, that payment must be included in current liabilities. So a single debt is split into two parts: current and noncurrent. This does not affect the legal debt in the slightest: it is done to meet the presentation objectives outlined earlier.

There's a twist here you should watch for that is consistent with the rule of not recognising future interest. In accordance with the points discussed, it's only the *principal* portion payable in the next year that's called current. Suppose, for example, that Jocelyn owes \$71 000 on her mortgage and during the next year must make 12 monthly payments of \$1000, including interest. If the interest will amount to \$6400 over the next year, her balance sheet will show a current liability of \$5600 (\$12 000 – \$6400) and a noncurrent liability of \$65 400 (\$71 000 – \$5600). The \$6400 that will be next year's interest is ignored at this point because it has not yet accrued. Her total debt in the balance sheet is \$71 000 (\$5600 + \$65 400), not \$77 400 or \$83 000.

14.6 Interest-bearing liabilities: long term

Before considering long-term interest-bearing liabilities, it is informative to consider alternative forms of external company financing. The basic alternative forms are equity capital or debt capital. In addition, there are hybrid forms that exhibit both debt and equity characteristics. These alternatives are shown in Figure 14.2.

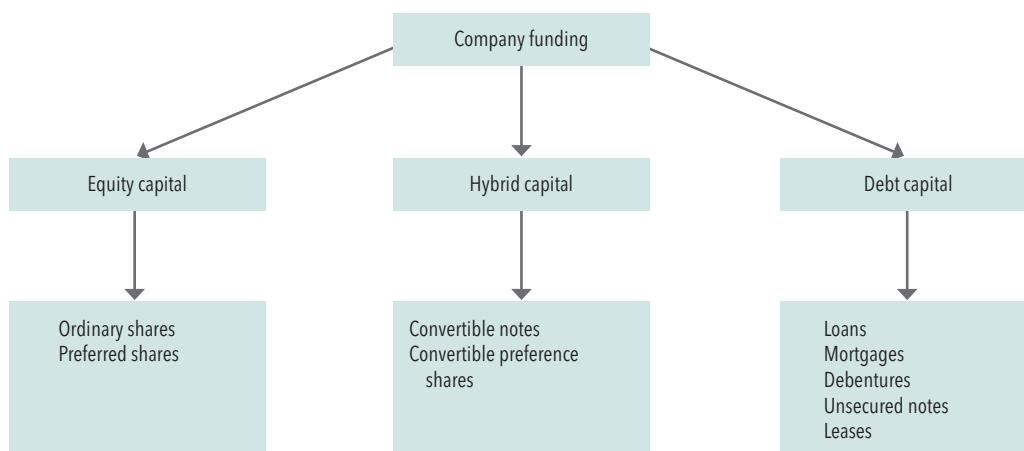


FIGURE 14.2 Alternative forms of external company financing

Following incorporation, most companies have an ongoing need for external sources of finance to fund current operations and strategic growth plans. Corporate management weigh up the costs and benefits of equity and debt capital, and financial instruments that have characteristics of both debt and equity (hybrid securities), in choosing their optimal capital structure. Equity (share) capital is examined in Chapter 15. In this section, we will consider the accounting treatment of alternative types of debt and hybrid securities.

Alternative forms of debt capital

Long-term debt financing can come in various forms. Common forms are mortgages, debentures and unsecured notes. These are distinguished on the basis of the amount of security available to protect the lender. Various combinations of these securities may exist at any one time in a company's capital structure.

A debenture is a general kind of loan that is simply a contract between the company and the holder that acknowledges the receipt of funds in exchange for a series of payments at a fixed rate on preset dates over the term of the debenture. These may be issued to a single individual or may be issued to the general public. A debenture must be fully secured over the issuing company's assets. A debenture secured only by

first mortgage over real estate is described as a *mortgage* or, more formally, as a *mortgage debenture*. The lender can claim title to those assets if the company does not make the agreed payments on time.

In contrast to debentures, an *unsecured note* is a debt that is not secured by a charge over company assets but, in other respects, is similar in format and in operation to a debenture. However, because of the absence of security, these debt securities are much less common than debentures or other types of securities. *Loans* are the most common type of debt financing for short-term and smaller loans, and are taken out with banks, other financial institutions or commonly, for private companies, from shareholders. These loans may be secured or unsecured over company assets. The lender may also require the borrowing company's directors to provide personal guarantees in cases where there is considerable uncertainty about repayment and/or the liquidation value of the borrowing company's assets.

Contractual terms for debt securities are specified in loan agreements (or a clause in the debenture trust deed). These terms provide a set of specifications that the borrower must meet, otherwise the lender can demand payment or take other punitive action. Such specifications may require the borrower to maintain a particular level of working capital, or a particular working capital ratio, a particular debt-to-equity ratio, or meet other conditions defined on the financial statements. (Such agreements may tempt management to choose accounting policies designed to help the financial statements meet the agreed specifications.) The accounting entries for the issue and repayment of debt are left for more advanced financial accounting subjects.

HYBRID CAPITAL

Financial instruments that have attributes of both debt and equity capital are called 'hybrid capital'. One such instrument is capital notes, which are reasonably common in the present environment. Companies such as Westpac, Commonwealth Bank and Macquarie Bank have issued capital notes recently. While the details vary across issues, they are considered hybrid securities because they have attributes of debt (a regular interest payment) but also features of equity (e.g. like a share, they do not have a fixed maturity date). Generally, these capital notes offer a higher rate of interest and investors have the option to exchange the capital notes for a predetermined number of shares.

14.7 Tax liabilities

LO6 There are two types of income tax liabilities recognised in the balance sheet. The first is a current liability for income taxes due to the tax authorities (called *income tax payable*). The second type of income tax liability is for a noncurrent liability arising from temporary differences between the tax calculated for accounting purposes and the assessable tax calculated by tax authorities. These differences arise because tax authorities do not always require that the same method be adopted for income tax purposes as used for accounting purposes.

For example, many companies use a straight-line depreciation method to depreciate items of plant or equipment in their accounting systems. However, tax authorities allow companies to use a straight-line method or an accelerated method for income tax purposes. Because of this option, many companies that use a straight-line method for accounting purposes adopt an accelerated depreciation method for tax purposes to obtain the early benefit of the allowable deductions. As a consequence, the carrying amount of an asset (e.g. equipment) reported in the accounting records at the end of the first period will exceed the carrying amount (the *tax base*) used for tax purposes. Put another way, the amount of assessable economic benefits (assessable amounts) shown in the accounting records for the asset will exceed the amount that will be allowed in future periods as a deduction for tax purposes. This difference is an *assessable temporary difference* and the obligation to settle the resulting income taxes in future periods is a *deferred tax liability*. (The opposite situation would lead to a deductible temporary difference – a *deferred tax asset*.) This topic can get very complicated so further details are left to a more advanced accounting course.

14.8 Provisions

Provisions are also examples of liabilities. They are liabilities for which the amount or timing of the future sacrifice of economic benefits that will be made is uncertain. While other liabilities, such as accounts payable and accruals, may involve some uncertainty, this uncertainty is generally insignificant and therefore does not create major measurement problems.

LO7

A provision shall be recognised when:

- a an entity has a present obligation as a result of a past event;
- b it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and
- c a reliable estimate can be made of the amount of the obligation. (AASB 137)

If these conditions are not met, a provision will not be recognised and instead a contingent liability will be disclosed in the notes (see section 14.9).

The definition of a provision refers to the need for there to be a present obligation. In most cases the present obligation will be clear (such as annual leave, long service leave or warranties), but the amount or timing is uncertain. For example, motor vehicle manufacturers will always need a warranty provision but the dollar amount needed can be very uncertain. However, in some cases, such as lawsuits, the present obligation is less clear and professional judgement by the accountant is needed.

The present obligation means that the entity must have no realistic alternative but to make the future sacrifice of economic benefits to settle the obligation (e.g. pay cash, replace inventory, or use labour for rework or to fix a deficiency). As stated earlier, the most common form of present obligation is a legal obligation to some external party. However, there are also constructive obligations that leave the entity with no realistic alternative but to make future sacrifices of economic benefits.

Examples of entities with constructive obligations that constitute provisions are as follows:

- 1 Consider an entity that has developed a detailed formal plan for a restructuring and announced its main features to those affected but has not entered into any contracts to carry out the restructuring. As a result of its actions, the entity has no realistic alternative but to proceed with the restructuring.
- 2 An entity makes a public announcement that it will match the financial assistance provided by other entities to victims of a specific natural disaster. For example, it is common practice for some firms to match the donations of their employees. Because of custom and moral considerations, the entity has no realistic alternative but to provide the assistance.

Provisions only include obligations from past events and they exist independently of the entity's future actions. For example, a penalty for past unlawful trade practices will require the sacrifice of future economic benefits to settle the fine, and it exists regardless of future actions of the entity. Therefore, it will be recorded as a provision provided a reasonable estimate of the amount of the obligation can be made. However, the mere intention to make a future sacrifice of economic benefit is not sufficient to give rise to a present obligation, even if the sacrifice is necessary for the continuation of the entity's operations; that is, the obligation must arise from past events.

Two examples of accounting for provisions are provided.

- 1 **Warranty liability** (provision for warranties): the estimated future cost of providing warranty service for products already sold (i.e. revenue has already been recognised). In the period in which a product is sold, an expense is recognised to match to the revenue by the expense recognition entry: debit warranty expense, credit provision for warranty. When a warranty cost is incurred, the liability is reduced by the payment: debit provision for warranty, credit cash; or if a replacement product is provided: debit provision for warranty, credit inventory. If, as is likely, some of the warranty cost will be paid within the next year, that amount is included in current liabilities.
- 2 **Provision for employee entitlements**: part of the conditions of employment for most staff is that they receive annual holidays (they may take them in the current year or they may accrue them to take in subsequent years) and, if they stay a certain number of years with the same company, they are entitled to long service leave. For example, after 10 years of service they may receive six weeks' leave. The amount

of leave increases the longer they remain with the company. So, each year the company will debit annual leave expense and long service leave (LSL) expense and credit an appropriate liability account (e.g. provision for annual leave and/or provision for LSL). There are lots of assumptions that need to be made in determining the dollar amount of the liability, including estimates of staff turnover and future salaries. We will leave these complications to later courses.



FOR YOUR INTEREST

For example, car manufacturers give warranties on their cars. Traditionally these warranties were for only one or two years but now some manufacturers give up to seven years. Given these cars have good reputations for reliability, the provisions may not need to be particularly large. But what happens if a new line of research discovers that certain types of safety equipment become less effective after a few years? Suddenly, the company had to increase its warranty provision, current and noncurrent, because of the cost of fixing real or imagined problems. Its warranty expense estimates had been appropriate under previous conditions but were suddenly found to be insufficient by the unanticipated event of the new research. It's an example of the unavoidable fact that accrual accounting estimates of the future, no matter how carefully made, can easily turn out later to have been wrong.



HOW'S YOUR UNDERSTANDING?

14C The accounting records of Gizmo Pty Ltd showed that at 1 January 2022, provision for warranty claims was \$7400, and for the year ended 31 December 2022, sales were \$260 000. In the past, Gizmo's warranty expense has been 9 per cent of sales and this rate is again expected for next year. During the current period, Gizmo paid \$14 032 to satisfy warranty claims.

- (i) What is Gizmo's warranty expense for the year to 31 December 2022?
- (ii) What is the closing balance of provision for warranty claims recorded on the balance sheet as at 31 December 2022?

As an example, assume a company starts accruing long service leave for staff after five years. They have decided not to accrue any earlier than this because they find, on average, that they have a high staff turnover in the early years and, therefore, these staff don't eventually get long service leave. Assume the company (based on past history relating to length of employment and estimated future salaries) determines that the long service leave expense for a particular employee for years six to 10 is \$10 000 per year. Also assume that, in year 11, the staff member takes long service leave. In this simplified example, the accounting equation would look like this:

Year	A Cash	A = L	+ SE
		Provision for long service leave	Long service leave expense
6		+ 10 000	+ 10 000
7		+ 10 000	+ 10 000
8		+ 10 000	+ 10 000
9		+ 10 000	+ 10 000
10		+ 10 000	+ 10 000
11	-50 000	-50 000	

That is, the provision will build up each year to \$50 000 in year 10. In year 11, when the person takes the leave the liability is reduced to zero (debit provision for long service leave, credit cash).



FOR YOUR INTEREST

Staff often wonder why members of management want them to take long service leave. One reason is that salary rates generally increase over time, so management wants them to take the leave at the lower rate. Often more important is the impact on the financial statements. When a person takes long service leave, cash decreases and a liability decreases (provision for LSL). Therefore, it does not reduce profit (as expenses were taken up in earlier years). However, if the employee had not taken leave, the entry would be debit wages expense and credit cash, both for \$10 000 (based on the example discussed previously). In this case, there is a wages expense in this period and, therefore, profit will decrease. In both cases, cash decreases by the same amount. Thus, by getting staff to take long service leave, it has no effect on cash but has the dual benefits of increasing profits and reducing liabilities.



HOW'S YOUR UNDERSTANDING?

14D Which of the following would be included under provisions?

- (i) The company decides to upgrade equipment next year; the cost will be \$100 000.
- (ii) The company receives an invoice for \$10 000 for an advertisement that appeared in the local paper.
- (iii) The company produces televisions and estimates that warranty costs over the next two years will be \$40 000.
- (iv) A company owes employees a total of 405 days' pay in holidays at year-end but is uncertain when they will take the leave.

14.9 Contingent liabilities

Contingent liabilities are:

LO8

- (i) possible obligations, as it has yet to be confirmed whether the entity has a present obligation that could lead to an outflow of resources embodying economic benefits; or
- (ii) present obligations that do not meet the recognition criteria in this Standard (because either it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation, or a sufficiently reliable estimate of the amount of the obligation cannot be made). (AASB 137)

There are two types of contingent liabilities. One type is possible liabilities that arise from past events, the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity. An example of this would occur when a tax audit of the entity is in progress and the taxation authority has expressed concern about, but not yet disallowed, particular income tax deductions claimed in previous reporting periods. This gives rise to a possible present obligation for additional income taxes; but the entity can obtain independent advice that the deductions were claimed correctly and dispute any disallowance of the deductions.

The other type of contingent liability is the type where existence is not in doubt but the liabilities fail either or both of the criteria for recognition. The following are examples of circumstances that give rise to liabilities that do not meet the criteria for recognition, and therefore are contingent liabilities:

- the entity has provided a firm guarantee or indemnity to a financier for a loan taken out by another entity, and at the reporting date default on the loan is less than probable
- the entity is making or defending a claim for unspecified damages and no amount of the claim (including its minimum amount) can be measured reliably as at the reporting date, given the nature of the claim.

AASB 137 provides the decision flow chart in Figure 14.3. The purpose of this decision flow chart is to summarise the main recognition and disclosure requirements of the Standard for provisions and contingent liabilities.

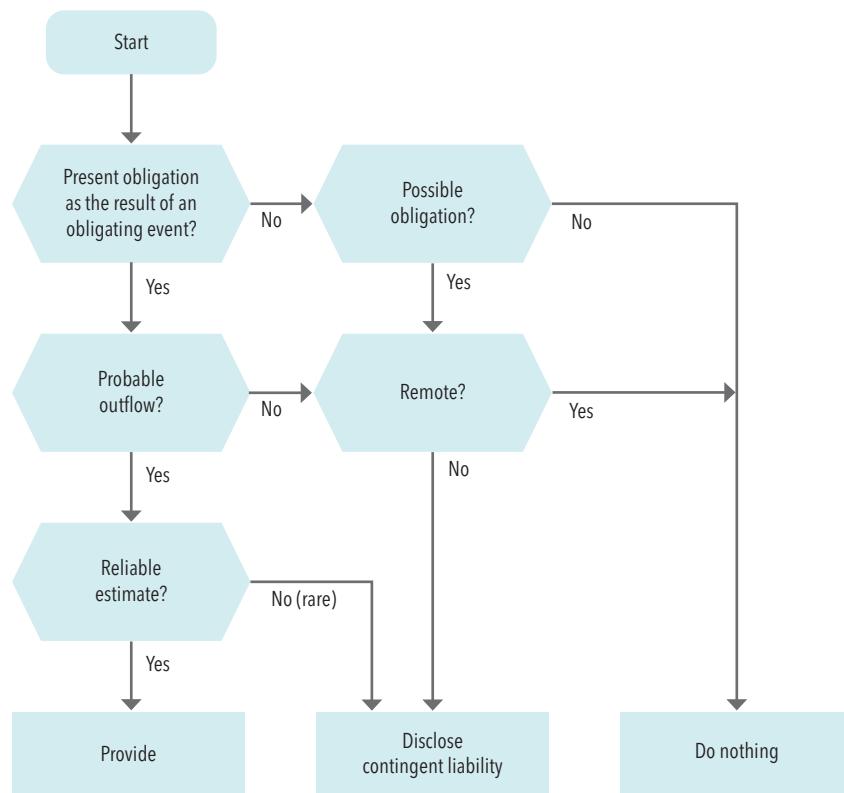


FIGURE 14.3 Provisions and contingent liabilities

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The main requirements of AASB 137 with respect to provisions and contingent liabilities are set out in Appendix A of AASB 137:

Where, as a result of past events, there may be an outflow of resources embodying future economic benefits in settlement of (a) a present obligation; or (b) a possible obligation whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity:

There is a present obligation that probably requires an outflow of resources.

A provision is recognised (paragraph 14).

Disclosures are required for the provision (paragraphs 84 and 85).

There is a possible obligation or a present obligation that may, but probably will not, require an outflow of resources.

No provision is recognised (paragraph 27).

Disclosures are required for the contingent liability (paragraph 86).

There is a possible obligation or a present obligation where the likelihood of an outflow of resources is remote.

No provision is recognised (paragraph 27).

No disclosure is required (paragraph 86).

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Most important to note is that contingent liabilities are *not* recognised in the balance sheet, but are separately disclosed in the notes to the accounts.



HOW'S YOUR UNDERSTANDING?

14E The following note relating to contingent liabilities is taken from the financial statements of Makebelieve Limited.

Legal actions exist against a company relating to a claim for damages in respect of a product warranty. Liability is not admitted and the company will defend the action. Professional legal advice indicates that no loss will result from these claims.

- (i) Briefly explain why the contingent liability outlined will not appear on the company's balance sheet.
- (ii) From the perspective of a prospective investor, briefly discuss the importance of disclosing contingent liabilities in a company's financial statements.

14.10 'Off balance sheet' financing

Sometimes companies will arrange for sources of financing that do not meet the accounting definition of a liability or an equity item and, as a result, this source of financing does not appear on the balance sheet. Because of this treatment, financial statement users may be concerned that such sources of financing are sought by management because they do not appear on the balance sheet and, therefore, do not affect the debt-to-equity ratio, the current ratio or other measures. In some circumstances, such sources of financing might not be disclosed at all, so that the user would not be aware of the financial commitment they imply. This concern led accounting standards to deem one such source – long-term leasing of important fixed assets – to be equivalent to a liability and require its recognition and disclosure, as described earlier. Where leases are classified as finance leases, this source of financing has consequently been brought onto the balance sheet as a finance lease liability, where its economic substance is really like a mortgage or other noncurrent obligation. The accounting for leases is a more advanced topic and will be covered in more advanced accounting courses.

New financial arrangements are being invented all the time, and the impact they have on the balance sheet (or might have depending on the company's accounting policies) is likely to be a factor in their acceptability and popularity. Some examples of financing that may not be well reported in the financial statements include:

- ordinary rental and leasing contracts, particularly non-cancellable operating leases that may be structured to avoid being classified as a finance lease
- long-term purchase commitments to get favourable terms on delivery or prices (i.e. a company signs a contract to buy a set amount of products at a particular price over the next three years)
- the use of joint ventures, partnerships, associated companies or other types of entities (like the special purposes entities used by Enron) to borrow money so that the commitments do not show up on the parent company's balance sheet.

Fortunately, companies make mandatory and voluntary footnote disclosures about many of the discussed off balance sheet financing activities, so the extent of these activities can be assessed. Analysts and other users of financial information often use these footnotes to make adjustments to the reported financial statement numbers.

LO9

Following the Global Financial Crisis, there has been renewed effort by international accounting standard-setters to address the gaps in the accounting rules that allow off balance sheet financing to continue.

14.11 Goods and services tax

LO10 This section covers Australia's goods and services tax (GST), including the liability account: GST payable. This account is included in the payables section of the balance sheet. We have left GST until now, so that it can be discussed in detail without over-complicating your earlier understanding of the recording of transactions.

We have already seen that companies pay taxes to the Australian Government that are levied on their profit. Like other expenses, income tax expense is subtracted from revenue to determine the financial performance of a company over a period; that is, the company's net profit or loss. While company taxes have a direct impact on financial performance, companies and other organisations can also be affected by the other two types of tax that form part of the taxation system: direct (personal) taxes and indirect taxes. While a company is not, in itself, liable for these types of tax, it acts as an agent for the Australian Taxation Office (ATO) in its collection and remittance activities. For example, while employees are individually liable for personal income tax on their salaries or wages, companies are required to withhold this tax when they pay their employees and remit it to the ATO under the Pay As You Go (PAYG) withholding system. From the company's perspective, salaries and wages paid to employees are an operating expense. That portion of the salary or wage that is withheld does not change the operating expense of the company, but does create a liability to a third party, the ATO. Accounting for such taxes as PAYG was covered in section 14.4.

Companies are also affected by indirect taxes and the most common examples of indirect taxes are called value-added taxes. Many countries, including New Zealand, the United Kingdom and Canada, operate a system of value-added tax. In Australia, a 10 per cent value-added tax known as a goods and services tax (GST) was introduced on 1 July 2000. A GST is a broad-based consumption tax: broad-based because it applies to most transactions in the economy, and consumption because it applies to the amounts spent on goods, services and activities.

Figure 14.4 highlights the key features of the Australian GST system. The choices available to a business under the GST system depend on turnover, a concept roughly equivalent to total annual revenue. If a business is registered for the GST, it collects an additional 10 per cent tax on its sales on behalf of the government. Smaller businesses have the choice of accounting for GST on either a cash or accrual basis. Smaller businesses are also able to remit amounts to the ATO quarterly or monthly. Businesses with an annual turnover of \$2 million or less have the choice to pay GST instalments quarterly and lodge a GST return annually. Large businesses account for the GST on an accrual basis and remit amounts monthly.

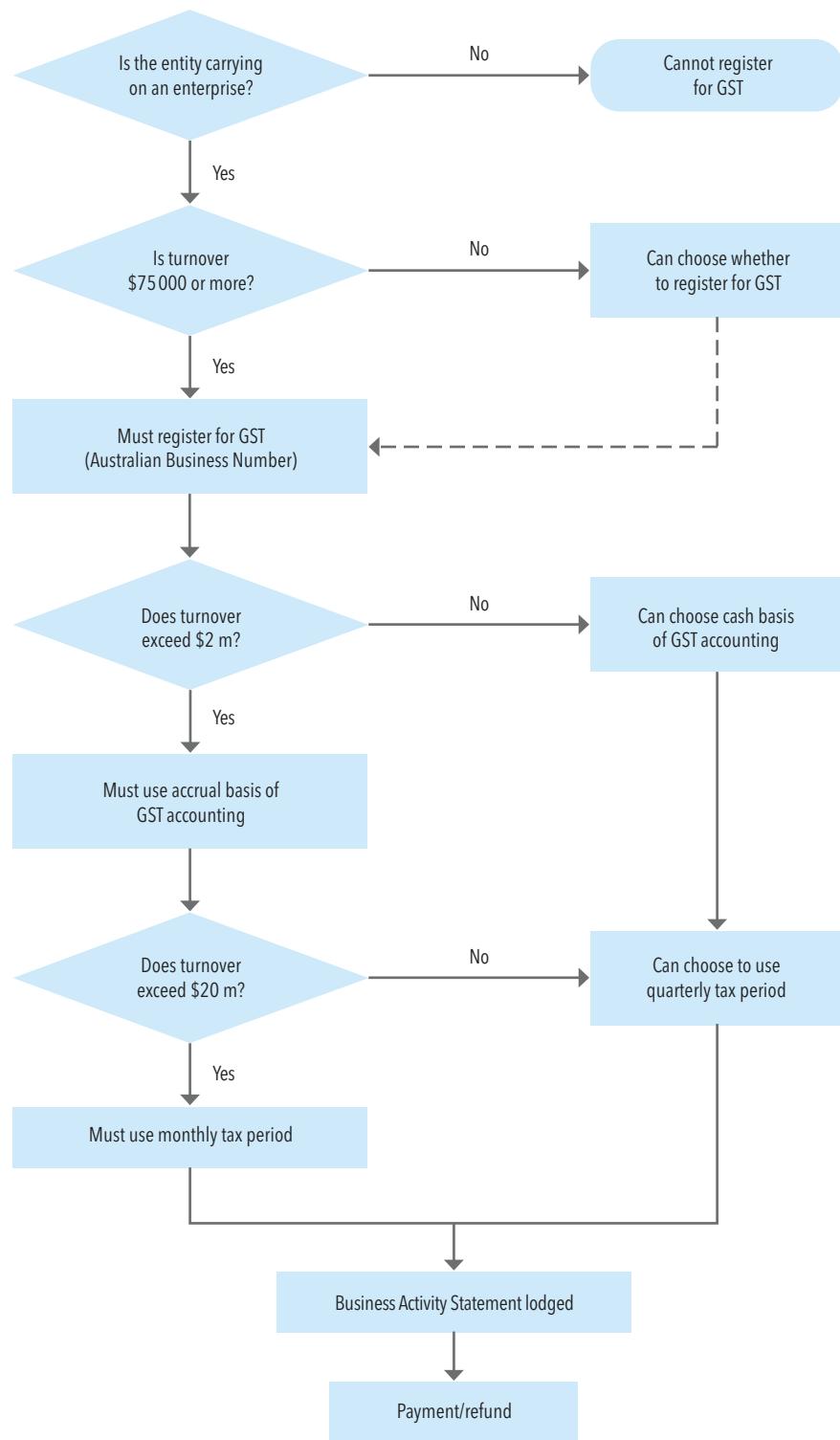


FIGURE 14.4 Simplified flow chart showing the main elements of the GST system for Australian business

GST is recorded in the accounting system as part of the process of preparing the balance sheet. It also aids in the preparation of a Business Activity Statement (BAS), which includes a GST return which is submitted to the ATO.

The following examples illustrate how the GST system operates.

The simplest case is that of a supply chain with two parties. Let's assume that R. Chan provides \$1000 of consulting services to M. Baker. Under the GST system, the consulting services represent a taxable supply (services are supplied by R. Chan to M. Baker) and 10 per cent GST is added to the price paid for the service, as illustrated in Figure 14.5.

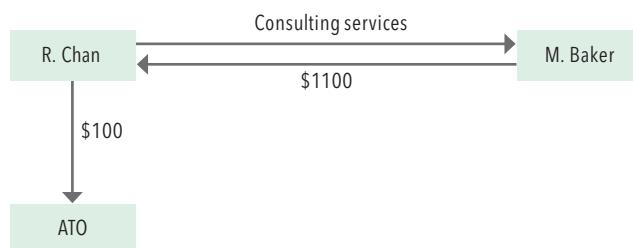


FIGURE 14.5 Simple model of the GST system as it affects two parties

We see that M. Baker acquires consulting services in exchange for \$1100. From the perspective of R. Chan, \$1100 is to be collected; \$1000 of this amount represents revenue for the services supplied and \$100 represents the GST collected on behalf of the ATO, to be remitted at the end of the tax period. The following journal entry records the transaction:

	\$	\$
DR	Cash or accounts receivable	1 100
CR	Consulting revenue	1 000
CR	GST payable	100

The GST payable account is a current liability account that accumulates the GST collected on all applicable sales. When the GST that is due is paid to the ATO, the liability account is reduced. At any date, the GST payable account shows what has been collected but not yet remitted to the ATO. It is, therefore, a control account for the seller's obligation to the government. It shows the way the seller has been a channel for the government's money, because it goes up when sales subject to GST are made and down when the money is sent to the ATO.

Because M. Baker is the final consumer, this example is relatively simple. However, things are usually a bit more complicated than this, because R. Chan is likely to have to pay GST on purchases it has made from suppliers.

Let's assume that R. Chan pays \$44 for paper supplies from P. Lee. A value-added tax system, such as the GST, operates through the collection of GST each time a taxable supply is made in the supply chain. In this case, the paper represents a taxable supply, so GST is included in the price paid by R. Chan. To work out the amount of GST, we can divide the price by 11: $\$44/11 = \4 . However, because R. Chan is registered for GST and intends to use the paper for business purposes, it becomes a creditable acquisition for R. Chan. This means that R. Chan is able to deduct any GST on its own purchases and expenses from the amount to be sent to the ATO. Therefore, the GST due to the government is the difference between GST collected and GST paid. In this way, the effective responsibility for the payment of GST is shifted along the supply chain.

If we extend our simple example, we can see how this works (see Figure 14.6).

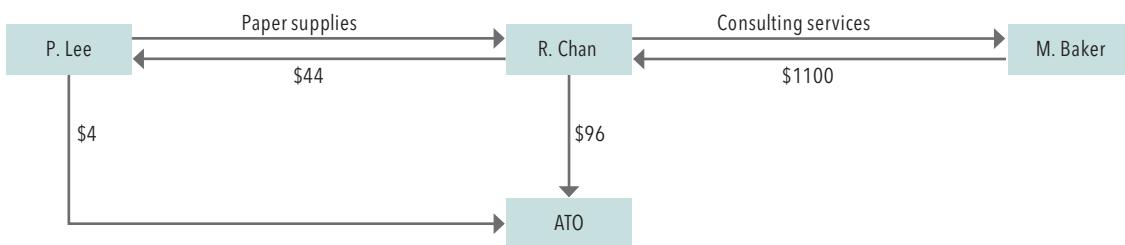


FIGURE 14.6 Simple example of how the GST system works along the supply chain

There are a number of things to notice in this example:

- P. Lee has no business inputs, because it is the first link in the supply chain and, therefore, has no creditable acquisitions. On making a taxable supply to R. Chan, P. Lee collects \$4 GST and remits the amount to the ATO.
- R. Chan pays GST on its acquisitions and collects GST when it supplies consulting services. The amount remitted to the ATO is the difference between the GST paid and collected in any tax period. In the example, R. Chan pays \$4 GST to P. Lee and collects \$100 from M. Baker. The difference of \$96 is remitted to the ATO.
- M. Baker pays \$100 GST on the consulting services bought from R. Chan. Because M. Baker is the final consumer, there is no GST collection to offset the GST payment.
- The ATO continues to receive a total of \$100.

So how does R. Chan record its purchase of paper supplies? The first thing to note is that part of the \$44 paid to P. Lee is for GST, and this provides an input tax credit of \$4 for R. Chan. The paper itself is valued at \$40. The following journal entry records the transaction:

	\$	\$
DR Supplies expense	40	
DR GST recoverable	4	
CR Cash payable		44

Assuming that the GST collected in a business is usually greater than the GST paid, the GST recoverable account could be treated as a contra account to the GST payable account. It is possible for the GST payable account to be a debit (an asset) if the company makes particularly large purchases and has small sales in a given period. For example, this might occur if a business acquires noncurrent assets, where the GST paid is claimed immediately.

Our discussion suggests a number of generalisations:

- GST is not a tax on the business. The main impact for business might be on cash flow planning because of differences in timing between GST paid and collected.
- The final consumer bears the cost, because he or she is not able to claim input tax credits on acquisitions.
- If input tax credits are available, any GST paid does not become part of an expense or the cost of the acquisition of an asset.
- Any GST collected does not form part of a business's revenue.
- GST is collected at each point in the supply chain, bringing forward the collection of tax.

There is much more to the operation of the tax system than can be covered in this brief introduction. For those who are interested, current information can be obtained at: <http://www.ato.gov.au>. As you will find, tax is a very challenging and dynamic area!

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Warranty accruals

Balmer Ltd has a warranty plan. Estimated warranty liability was \$50 000 at the beginning of the year. Based on the company's sales for the year, warranty service costing \$78 500 in wages and other costs, plus \$62 000 in replacement products, was expected to have to be provided eventually. Actual expenditures for the year were \$84 000 in wages and other costs and \$78 000 in replacement products.

- 1 Calculate warranty expense for the year and estimated warranty liability at the end of the year.
- 2 Write one or more journal entries to record Balmer Ltd's warranty experience for the year.

PRACTICE PROBLEM B

Accounting for GST

Barbarino Ltd undertakes consulting services for large food-processing organisations. The company is registered for GST, and accounts for GST on the cash basis.

At the end of March 2022, the GST payable account had a balance of \$400 and the GST recoverable account a balance of \$144.

During April 2022, Barbarino Ltd recorded these transactions:

- | | |
|----------|---|
| 6 April | Received from FCD Ltd the sum of \$4000 + \$400 for GST. |
| 8 April | Received from VKL Ltd the sum of \$4950 (including GST). |
| 15 April | Sent cheque to the ATO for the net amount of GST payable for March. |

Prepare general journal entries to account for the month of April.

PRACTICE PROBLEM C

Events giving rise to liabilities

The following events occurred during the year ended 30 June 2022 for Plumber Limited.

- 1 Opening balance of accrued salaries was \$10 000. Wages expense for the year was \$630 000 and cash paid for salaries was \$600 000.
- 2 On 1 May 2022, Plumber signed a three-month, 12 per cent per annum note payable to purchase a new machine costing \$48 000. Interest and principal are paid at maturity.
- 3 On 15 May 2022, Plumber received rent in advance of \$6000 from WYZ for a three-month lease of premises.
- 4 June sales totalled \$212 000. Plumber collected GST of 10 per cent on this amount. This is due to be paid to the tax office by the seventh day of the month following collection.
- 5 Electricity charges of \$40 000 from 24 April to 23 June are payable on 10 July.
- 6 On 30 June 2022, Plumber took out a loan for \$110 000 from Oscar Bank. Repayments of principal are scheduled evenly over a five-year period. Interest on the loan is paid in the year it is incurred.
- 7 Plumber's main product is backed by warranty. Sales of this product for the year totalled \$445 000. The opening balance of provision for warranty claims was \$10 600. During the year, Plumber's warranty expense was \$31 700 and claims paid to customers totalled \$25 200.

For each item, indicate the account and the amount to be included as a current liability on Plumber's balance sheet.

PRACTICE PROBLEM D

Provisions

Balmer Ltd started the year with a long service leave (LSL) liability of \$42 000 for its long-term employees. During the year, employees accrued LSL entitlements with a present value of \$147 600 and the company paid \$157 400 to employees for LSL taken during the year. Calculate the amount of the LSL expense for the year and the LSL liability at the end of the year.

HOMWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1** Define a liability.
- 2** List four categories of liabilities.
- 3** Explain the relationship between liabilities and expenses. Provide five examples where they both increase at the same time.
- 4** Why is the distinction between current and noncurrent liabilities important?
- 5** Why are each of the following items classified as liabilities: provision for warranty, provision for long service leave, unearned revenue, GST payable and income tax deductions due?
- 6** Why are some liabilities interest-bearing and others are not?
- 7** What is the difference between a payable and a provision?
- 8** What are examples of provisions?
- 9** Provide examples of provisions for employee entitlements.
- 10** Explain the difference between a liability and a contingent liability.
- 11** Explain why contingent liabilities do not appear on the balance sheet. Give two examples of a contingent liability.
- 12** Provide an example of an instance where a lawsuit would be classified as (a) a liability or (b) a contingent liability.
- 13** Why might companies use off balance sheet financing?
- 14** What is the difference, if any, between liabilities and legally enforceable debts?
- 15** Employees take their long service leave years and years into the future. Whether there is any long service leave depends on whether the employee keeps working for the company and how long the employee works for the company. Therefore, long service leave costs can only be realistically determined when they are being paid in the future. Why shouldn't they be expensed then, rather than now?

PROBLEMS

PROBLEM 14.1

Current liabilities

The following data are extracted from the accounting records of DEF Limited at 30 June 2022.

	\$
Equipment	350 000
Accounts receivable	85 000
Accounts payable	35 000
Cash	12 000
Accrued salaries	7 000
Unearned revenue	10 000
Accrued interest revenue	5 000
Allowance for doubtful debts	4 000
Provision for holiday pay	8 000
Accumulated depreciation	50 000
Sales	200 000
Cost of sales	80 000
Depreciation	20 000
Other operating expenses	60 000

What is the balance of current liabilities at 30 June 2022?

PROBLEM 14.2

Recording and reporting current liabilities

Auburn Company completed the following transactions during 2021–22. The annual accounting period ends 30 June 2022.

- a Purchased inventory on credit at cost of \$16 800; perpetual inventory system is used.
- b Received a customer deposit of \$18 000 from LPQ Ltd for services to be rendered in the future.
- c Borrowed \$900 000 from the bank on 1 March 2022 by giving the bank a six-month, 9 per cent interest-bearing note payable.
- d Performed \$8000 of the services paid for by LPQ; the rest will be rendered in August 2022.
- e Received electricity bill for \$24 200, which will be paid in early July.
- f On 1 June 2022 received rent in advance of \$20 600 from SFT Ltd for a three-month lease of premises from 1 June to 31 August 2022.
- g Wages accrued in the last weekly payroll amounted to \$23 000 and will be paid on 5 July 2022.

Required:

- 1 Prepare journal entries for each of these transactions.
- 2 Prepare all adjusting entries required on 30 June 2022.

PROBLEM 14.3

Identifying current liabilities

	2022 \$m	2021 \$m
Current liabilities		
Payables*	1 738	1 750
Revenue received in advance*	3 067	3 167
Interest-bearing liabilities*	577	630
Other financial liabilities	397	242
Provisions*	456	448
Liabilities classified as held for sale	<u>—</u>	<u>4</u>
Total current liabilities	6 235	6 241

Explain what is likely to be included in each of the items marked with an asterisk (*). Hint: this company is in the airline industry.

PROBLEM 14.4

Impact on financial statements

Toby Limited borrowed \$75 000 000 cash on the last day of the financial year (31 December 2022) to be paid back in six years. The money was used on the same day to reduce the company's short-term bank loans by \$25 000 000 and to buy additional equipment for \$50 000 000.

Calculate the changes in the following as a result of the discussed transactions:

- 1 total current assets
- 2 total assets
- 3 total current liabilities
- 4 working capital ratio (current assets ÷ current liabilities)
- 5 total shareholders' equity
- 6 net profit for the year ended on the day of the borrowing.

PROBLEM 14.5

Recognition of liabilities

State whether the following would be recognised as a liability. If so, what account name would you use?

- 1 The company has a legal obligation via contract to repair any deficiencies occurring in the first two years in the buildings it constructs.
- 2 The company has no legal obligation but as a matter of course it repairs any deficiencies occurring in the first two years in the buildings it constructs. This policy has helped it retain a good reputation in the industry.
- 3 Based on the preliminary financial results the company expects to pay a bonus of \$1 million to staff. The company has now paid bonuses to staff for the last 10 years.
- 4 At the end of the year it is calculated that staff have on average taken 13 of their 20 days of annual leave.
- 5 The company has signed the contract to purchase a piece of equipment worth \$300 000. The equipment will be delivered to it in three weeks and will be installed in the following week.
- 6 The company has guaranteed a loan of \$1.2 million for one of its very profitable subsidiaries.

PROBLEM 14.6

Entries for notes payable

A business issued a 60-day, 9 per cent note for \$20 000 for cash. Journalise the entries to record:

- 1 the issuance of the note
- 2 the payment of the note at maturity, including interest.

PROBLEM 14.7

Entries for discounting notes payable

National Electric Lighting Ltd issues a 90-day note for \$500 000 to Home Products Supply Ltd for merchandise inventory. Home Products discounts the note at 10 per cent.

- 1 Journalise National Electric's entries to record:
 - a the issuance of the note
 - b the payment of the note at maturity.
- 2 Journalise Home Products' entries to record:
 - a the receipt of the note
 - b the receipt of the payment of the note at maturity.

PROBLEM 14.8

Analysis of leave provisions

An extract from an annual report is provided here.

	Note 2. Schedule of leave entitlements					
	Recreation leave		Extended leave		Total provisions	
	2022 \$	2021 \$	2022 \$	2021 \$	2022 \$	2021 \$
Balance 1 July	98 515	105 771	274 855	244 172	373 370	349 943
Paid during year	<u>51 315</u>	<u>86 751</u>	<u>830</u>	<u>21 350</u>	<u>52 145</u>	<u>108 101</u>
	47 200	19 020	274 025	222 822	321 225	241 842
Provided during year	<u>67 875</u>	<u>79 495</u>	<u>51 884</u>	<u>52 033</u>	<u>119 759</u>	<u>131 528</u>
Liability 30 June	<u>115 075</u>	<u>98 515</u>	<u>325 909</u>	<u>274 855</u>	<u>440 984</u>	<u>373 370</u>
Current	115 075	98 515	310 847	267 120	425 922	365 635
Noncurrent	—	—	15 062	7 735	15 062	7 735
Total liability	115 075	98 515	325 909	274 855	440 984	373 370

- 1 What do you think recreation leave and extended leave are likely to include?
- 2 What was the opening balance of recreation leave as at 1 July 2021?
- 3 By dollar value, did the staff take more recreation leave or extended leave in 2022?
- 4 By dollar value, did the staff accrue (become entitled to) more recreation leave or extended leave in 2022?
- 5 Why has the extended leave provision increased by \$51 054 from 2021 to 2022?

PROBLEM 14.9

Provisions

Should a provision be recognised in the following situations?

- 1 A furnace has a lining that needs to be replaced every five years for technical reasons. At the reporting date, the lining has been in use for three years.
- 2 An airline is required by law to overhaul its aircraft once every three years.
- 3 Under new legislation, an entity is required to fit smoke filters to its factories by 31 December 2021, and entities that do not comply will be fined or required to pay penalties. As at 30 June 2021, the entity has not fitted the smoke filters. Should a provision be recognised at 30 June 2021 and 30 June 2022?

PROBLEM 14.10

Provisions

The hoarding of annual leave by staff can lead to large liabilities on the balance sheet and ineffective staff.

- 1 Explain how staff not taking annual leave can lead to liabilities on the balance sheet.

- 2 Some organisations force staff to take all of their annual leave for health reasons, but also to improve the financial statements. What impact would this action have on the:
- income statement?
 - balance sheet?
 - statement of cash flows?

Assume that no additional staff are hired to replace them while on leave.

PROBLEM 14.11

Accrued product warranty

Precision Audio Company warrants its products for one year. The estimated product warranty is 3 per cent of sales. Assume that sales were \$600 000 for January. In February, a customer received warranty repairs requiring \$310 worth of parts and \$460 worth of labour.

- Journalise the adjusting entry required at 31 January, the end of the first month of the current year, to record the accrued product warranty.
- Journalise the entry to record the warranty work provided in February.

PROBLEM 14.12

Accrued product warranty

During a recent year, Motorella Ltd had sales of \$29 398 million. An analysis of Motorella's product warranty payable account for the year was as follows:

	\$m
Product warranty payable, January 1	337
Product warranty expense	226
Warranty claims paid	<u>(230)</u>
Product warranty payable, December 31	<u>\$ 333</u>

- Determine the product warranty expense as a percentage of sales.
- Record the adjusting entry for the product warranty expense for the year.

PROBLEM 14.13

Liabilities in financial statements

Notes 13 and 14 for the financial statements of Emm Limited are shown.

Note 13. Creditors and borrowings		Consolidated
	2022 \$000	2021 \$000
Current		
Trade creditors and accruals	231 473	217 868
Bank loans – unsecured	<u>73 351</u>	<u>64 262</u>
	304 824	282 130
Noncurrent		
Notes payable	150 000	115 000
Loans – unsecured	1 160	20 970
Bank loans – unsecured	<u>305 437</u>	<u>150 000</u>
	456 597	285 970

	Note 14. Provisions	
	2022 \$000	2021 \$000
Current		
Self-insurance	6 048	5 041
Employee leave entitlements	31 006	30 779
Warranty and service on goods sold	8 404	6 962
Income tax payable (Note 4B)	<u>34 257</u>	<u>62 165</u>
	79 715	104 947
Noncurrent		
Self-insurance	250	250
Employer leave entitlements	41 613	36 110
Warranty and service of goods sold	<u>961</u>	<u>708</u>
	42 824	37 068

- 1 Provide examples of trade creditors and accruals.
- 2 Notes Payable of \$150 million in 2022 is repayable during 2023. How will this affect the balance sheet?
- 3 Assume that a total of \$6 million was paid in warranty costs during 2022. What was the warranty expense for 2022?
- 4 What would be included in the provision for employee leave entitlements? Why is it both a current and a noncurrent liability? What journal entry is made to increase this amount?

PROBLEM 14.14

Current and noncurrent liability calculations

Consider the following:

- a John Ltd's mortgage of \$842 500 requires payments of \$11 200 each month. During the next year the interest component of the payments will equal \$61 232.
- b Frieda Ltd's mortgage of \$232 200 requires payments of \$60 000 over the next year. By the end of next year the principal due on the mortgage will have gone down to \$189 400.
- c Graham Ltd's \$87 436 mortgage requires monthly payments of \$1500 plus interest. During the next year payments will total \$25 674.

In each case, calculate:

- 1 current liability at the end of this year
- 2 noncurrent liability at the end of this year
- 3 interest expense for the next year.

PROBLEM 14.15

Liabilities and contingent liabilities

For each of the following situations, determine whether the company should (a) report a liability on the balance sheet, (b) disclose contingent liability or (c) not report the situation. Justify and explain your conclusions.

- 1 A car manufacturer introduces a new model. Past experience indicates that there will be some warranty expenses but because the design of the car is so different from anything previously on the market the amount of the warranties cannot be reasonably estimated.
- 2 An employee has suggested that one of the company's best-selling products may infringe on another company's patent. If the other company discovers the infringement and files a lawsuit, the company could lose millions.

- 3 A company has polluted a river during the land development for a new construction project. Under environmental laws, clean-up action is required upon the completion of the project. The development project will take six to 10 years to complete. Current estimation of the cost to clean up the river amounts to \$2–3 million.
- 4 The court announced a decision on a product liability lawsuit and found that the company is liable for \$1 million. Management plans to appeal and believes that it will win. However, legal advice suggests that the chance of winning is minimal.
- 5 A key customer has complained about the quality of a major construction project and has a claim for compensation. While you believe the claim is unreasonable, to maintain the goodwill and reputation, the company has decided to make \$250 000 in repairs next year without charge.
- 6 A company is being sued for a loss caused by a faulty product. However, while there is agreement that the product is the cause of the loss, all legal parties involved disagree about the dollar amount that was caused by the loss.

PROBLEM 14.16

Contingent liabilities

Several months ago, Endurance Battery Company experienced a hazardous materials spill at one of its plants. As a result, the state Environmental Protection Agency (EPA) fined the company \$170 000. The company is contesting the fine. In addition, an employee is seeking \$500 000 damages related to the spill. Last, but not least, a home owner has sued the company for \$120 000. The home owner lives 40 kilometres from the plant, but believes that the incident has reduced the home's resale value by \$120 000.

Endurance Battery's legal counsel believes that it is probable that the EPA fine will stand. In addition, counsel indicates that an out-of-court settlement of \$250 000 has recently been reached with the employee. The final papers will be signed next week. Counsel believes that the home owner's case is much weaker, and will be decided in favour of Endurance Battery. Other litigation related to the spill is possible, but the damage amounts are uncertain.

- 1 What liability would be shown in the balance sheet? Show the journal entry.
- 2 Prepare a footnote disclosure relating to this incident.

PROBLEM 14.17

Contingent liabilities

The following footnote is to be included in the financial statements of PQ Ltd.

The company is being sued by X Ltd for the company's alleged wilful and deliberate violation of a patent. The suit seeks unspecified monetary damages as well as an injunction against the company's operations. It also seeks damages and lawyers' fees and costs. The company believes that it has meritorious defences against this suit and intends to vigorously defend itself. The company could be forced to incur material expenses during this defence and in the event it were to lose this suit, its business would be harmed.

Should a liability be recorded by PQ Ltd for this contingent liability? Why, or why not?

PROBLEM 14.18

GST reporting

ABC Ltd undertakes consulting services for sustainability issues. The company is registered for GST and accounts for GST on a cash basis. During June 2022 ABC Ltd recorded these transactions:

10 June	Received \$6000 + GST for consulting on energy usage
18 June	Received \$3850 (including GST) for consulting on workplace injury reduction
22 June	Purchased computer equipment for use in the ABC business. The cost of equipment was \$2000 + GST.

How much GST is payable by ABC for the month of June?

PROBLEM 14.19

GST reporting

Tony Cheng recently opened a restaurant in Hobart serving Asian Creole food, as well as exporting its own brand of spice mixture. The business is registered for GST, and accounts for GST on an accrual basis using a monthly tax period.

Summarised are the events that need to be considered in preparing the Business Activity Statement for June 2022:

- 1 On 2 June, a grinding machine was acquired for \$1100 (including GST). It is estimated that 85 per cent of the grinder's usage will be for the restaurant business and the rest to make spice mixture for export.
- 2 Fresh food was purchased for \$65 000 (GST free).
- 3 Invoices for other purchases totalled \$9900. At the end of the month, inventory to the value of \$230 was still in store and Cheng still owed \$2475.
- 4 Cash sales in the restaurant were \$264 000, including GST.
- 5 Credit sales of spice mixture totalled \$13 500, of which only \$12 000 was collected during the month.
- 6 The restaurant owner estimates that 5 per cent of all acquisitions are for private use.

Determine the following items for Tony Cheng's Business Activity Statement for the month of June:

\$
GST on sales
less input tax credit
GST to pay

CASES

CASE 14A

Woolworths Limited

Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 Under current liabilities, Woolworths lists trade and other payables. What does this include?
- 2 What is included in provisions in the balance sheet?
- 3 How does Woolworths calculate the dollar amount of provisions for employee benefits?
- 4 How are Woolworths' noncurrent liabilities described on the face of the balance sheet?
- 5 What is included in contingent liabilities?

CASE 14B Determining financial statement effects of various liabilities

XYZ Limited

XYZ Limited designs and manufactures a diversified product range for the international high-frequency radio, satellite and metal detection markets. The 2022 annual report for XYZ Limited contained the following note:

Warranty

A provision is made for the group's estimated liability on all products sold and still under warranty, and includes claims already received. The estimate is based on the group's warranty experience over previous years.

20. Provisions	2022 \$000	2021 \$000
Current		
Employee benefits	2 592	2 637
Warranty repairs	<u>2 846</u>	<u>2 496</u>
	<u>5 438</u>	<u>5 133</u>
Noncurrent		
Employee benefits	<u>3 476</u>	<u>3 451</u>
Reconciliation of warranty provisions		
Carrying amount at beginning of year	2 496	1 551
Provisions made during the year	1 860	2 293
Payments made during the year	(1 510)	(1 348)
	2 846	2 496

- 1 Explain what would be included in the warranty repairs liability and how it would be calculated.
- 2 Why has the liability increased?
- 3 Explain what would be included in the employee benefits liability and how it would be calculated.

CASE 14C Determining financial statement effects of various liabilities

- 1 The note from BlueScope Steel Limited at 30 June 2021 is provided, showing current provisions and detailed descriptions of some provisions as noted.

BlueScope Steel Limited Notes to the Consolidated Financial Statements 30 June 2021		
	Consolidated	
	2021	2020
	Current \$m	Current \$m
Annual leave (d) (i)	94.8	83.5
Long service leave (d) (i)	137.3	132.9
Redundancy (d) (ii)	3.8	4.4
Other employee benefits (d) (iii)	244.8	130.5
Restructure (e)	3.3	6.7
Product claims (f)	14.1	16.2
Workers compensation (g)	12.3	12.3
Restoration and rehabilitation (h)	1.9	8.7
Carbon emissions (i)	22.1	13.9
Other provisions	<u>14.6</u>	<u>11.8</u>
Total provisions	<u>549.0</u>	<u>420.9</u>

(d) Employee benefits

(i) Annual leave and long service leave

The liability for annual leave and long service leave expected to be settled after 12 months is measured as the present value of expected future payments to be made in respect of services provided by employees up to the end of the reporting period. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using interest rates on high quality corporate bonds other than New Zealand where Government bonds are used, with terms to maturity and currency that match, as closely as possible, the estimated future cash outflows.

Amounts not expected to be settled within 12 months for current leave provisions

The current provision for long service leave includes all unconditional entitlements where employees have completed the required period of service. The entire annual leave amount and vested portion of long service leave are presented as current. Since the Group does not have an unconditional right to defer settlement, based on past experience, the Group does not expect all employees to take the full amount of accrued annual leave and long service leave or require payment within the next 12 months. Current annual leave and long service leave obligation expected to be settled after 12 months is \$152.7M (2020: \$127.9M).

(ii) Termination benefits

Liabilities for termination benefits, not in connection with a business combination or the closure of an operation, are recognised when the Group is demonstrably committed to either terminating the employment of current employees according to a formal plan without possibility of withdrawal, or providing termination benefits as a result of an offer made to encourage voluntary redundancy. Benefits falling due more than 12 months after the end of the reporting period are discounted to present value.

(iii) Short Term Incentive plans (STI)

The Group recognises a liability and an expense for STI plan payments made to employees. The Group recognises a provision where past practice and current performance indicates that a probable constructive obligation exists.

(e) Restructuring costs

Liabilities arising directly from undertaking a restructuring program, defined as the closure of an operating site, are recognised when a detailed plan of the restructuring activity has been developed and implementation of the restructuring program as planned has commenced, by either entering into contracts to undertake the restructuring activities or making a detailed announcement such that affected parties are in no doubt the restructuring program will proceed.

(f) Product claims

Provision for claims is based on modelled data combining sales volumes with past experiences of repair and replacement levels in conjunction with any specifically identified product faults.

(g) Workers' compensation

In Australia and North America, the Company is a registered self-insurer for workers' compensation. Provisions are recognised based on calculations performed by an external actuary in relation to the expectation of future events. A contingent liability exists in relation to guarantees given to various state workers' compensation authorities, due to self-insurance prerequisites.

(h) Restoration and rehabilitation

The balance of the provision relates to leased sites that require rectification and restoration work at the end of their respective lease periods.

Recognising restoration, remediation and rehabilitation provisions requires assumptions to be made as to the application of environmental legislation, site closure dates, available technologies and engineering cost estimates. These uncertainties may result in future actual expenditure differing from the amounts currently provided.

(i) Carbon emissions

The Group is a participant in the New Zealand Government's uncapped Emissions Trading Scheme (ETS).

The emissions liability is recognised as a provision for carbon and is measured at the carrying amount of Emission Units (EU)s held with excess units, if any, held for trading measured at the current market value of EU.s.

BlueScope Steel Limited, Annual Report 2020/21, pp. 21–23.

State how each of the following fits the definition of a liability:

- 1 provision for employee benefits
- 2 provision for restructure
- 3 provision for product claims
- 4 provision for workers' compensation
- 5 provision for restoration and rehabilitation
- 6 provision for carbon emissions.

CASE 14D**Current versus noncurrent liabilities**

In an important legal case, the Australian Securities and Investments Commission successfully sued the directors and the Chief Financial Officer of Centro for failing to discharge their duties with due care and diligence in relation to approving the financial reports for three property trusts – Centro Properties Ltd, Centro Property Trust and Centro Retail Trust – for the year ended 30 June 2007.

ASIC alleged that the financial reports contained material misstatements, in particular that approximately A\$1.5 billion of interest-bearing liabilities were wrongly classified as noncurrent liabilities, rather than current liabilities.³

- 1 What difference does it make whether the \$1.5 billion is disclosed as a current or noncurrent liability?
- 2 Do you believe it should be part of the directors' statutory obligations to ensure financial statements are not materially misstated?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

14A (i) Yes (accounts payable)

(ii) Yes (accrued wages)

(iii) No

(iv) Yes (provision for employee entitlements)

(v) Yes (unearned revenue)

14B It is important to get the current liabilities measured properly because the total current liabilities are part of the calculation of ratios such as working capital, current ratio and quick ratio, which are important for assessing the liquidity of a company.

14C (i) $9\% \times 260\,000 = 23\,400$

(ii) $7400 + 23\,400 - 14\,032 = 16\,768$

14D (i) No liability

(ii) Accounts payable but not a provision

(iii) Provision for warranty

(iv) Provision for employee entitlements

14E (i) At this point in time, the entity does not have an obligation. The existence of the liability will only be confirmed by the occurrence or non-occurrence of one or more uncertain events (e.g. court hearing) not wholly within the control of the entity.

(ii) It makes the investor aware of potential liabilities and expenses.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1 Estimated expense = \$78 500 + \$62 000 = \$140 500
Liability = \$50 000 + \$140 500 – (\$84 000 + \$78 000) = \$28 500

2

	\$	\$
DR Warranty expense	\$140 500	
CR Provision for warranty		\$140 500
DR Provision for warranty	\$162 000	
CR Inventory		\$78 000
CR Cash (or Wages payable)		\$84 000

PRACTICE PROBLEM B

	\$	\$
6 Apr DR Cash	4 400	
	CR GST payable	400
	CR Consulting revenue	4 000
8 Apr DR Cash	4 950	
	CR GST payable	450
	CR Consulting revenue	4 500
15 Apr DR GST payable	256	
	CR Cash	256

PRACTICE PROBLEM C

	\$	
1 Accrued salaries: $10\ 000 + 630\ 000 - 600\ 000$	40 000	
2 Bill payable	48 000	
	Interest payable ($\$48\ 000 \times 2/12 \times 12/100$)	960
3 Unearned rental revenue ($1.5/3 \times \$6000$)	3 000	
4 GST payable ($\$212\ 000 \times 10\%$)	21 200	
5 Electricity payable	40 000	
6 Portion of long-term debt due within 1 year ($110\ 000/5$)	22 000	
7 Provision for warranties	17 100	

Provision for warranties		
Cash payments	25 200	Opening balance
	<hr/>	10 600
	Expense	31 700
	Balance	17 100

PRACTICE PROBLEM D

Expense = \$147 600. Liability = \$42 000 + \$147 600 – \$157 400 = \$32 200

NOTES

- 1 We gratefully acknowledge that sections of this chapter were written by Professor Gerry Gallery, Queensland University of Technology.
- 2 This section is adapted from Warren, C., Reeve, J. and Fess, P., *Accounting*, Thomson Learning, South Western College Publishing, Cincinnati, 2002.
- 3 More information about the Centro case is available at <https://theconversation.com/centro-fortescue-actions-all-part-of-a-high-stakes-game-for-asic-1414>

15

Equity, revenues and expense recognition



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** explain the components of the shareholders' equity section of a balance sheet (15.1)
- LO2** prepare the accounting entries for changes in shareholders' equity (15.2)
- LO3** explain the meaning of reserves (15.3)
- LO4** prepare the accounting entries for dividends and show the effect on retained profits (15.4)
- LO5** prepare the accounting entries for bonus issues and other items affecting shareholders' equity (15.5).
- LO6** distinguish between the terms 'income' and 'revenue' (15.6)
- LO7** explain the criteria used to decide whether revenue should be recognised (15.7)
- LO8** calculate the impact on profit of different revenue recognition methods (15.7, 15.12)
- LO9** explain the criteria used to decide whether expenses should be recognised (15.8)
- LO10** calculate the amount of income and revenue that should be recognised in a particular period and understand the contents of a statement of profit or loss and other comprehensive income (15.9)
- LO11** interpret the disclosures of accounting policies on revenue and recognition provided in annual reports (15.9)
- LO12** understand the contents of a statement of changes in equity (15.10)
- LO13** conduct 'what if' analysis (15.11)
- LO14** interpret the equity information in a company's financial statements (15.12)

CHAPTER OVERVIEW

This chapter completes your understanding of the balance sheet by providing insights into a company's shareholders' equity including: share capital, reserves and retained profits. Shareholders' equity is affected by the annual revenues, gains, expenses and losses that companies incur. This chapter discusses the concepts of income and expenses, including their recognition. Income includes both revenues and gains and this distinction is explained in section 12.8; however, this chapter concentrates on revenue recognition. Organisations must choose an appropriate point at which to recognise revenue. Several alternatives are available, and this important decision is at the core of this chapter. The content of income statements and statements of changes in equity, which displays the movement in shareholders' equity during the financial year, is also discussed within this chapter.

Overall, the objectives of this chapter are to set out some important principles about shareholders' equity accounting and revenue and expense recognition that will provide a general understanding of topics. The goal of this chapter is to help you understand what you see on a typical corporate income statement, balance sheet, in the statement of changes in equity and in the accompanying notes.

15.1 Shareholders' equity

LO1

The shareholders' equity section of the balance sheet has three main components:

- share capital
- reserves
- retained profits/accumulated losses.

Accounting standards require that each of these be disclosed separately. The purpose of keeping them separate is related to the concept of capital maintenance. Under this concept, profit is only earned after the capital of the company has been maintained. A dividend is distribution of a company's profits to its shareholders. Dividends can only be paid when there are retained profits and revenue reserves to cover them; that is, they cannot be paid out of issued capital. This is to ensure that the original capital is maintained within the company, which benefits the creditors because the amount of capital (in the form of net assets) is available for repayment of the creditors.

So what does the balance of shareholders' equity represent? First, recall the basic accounting equation introduced in Chapter 1:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$$

or

$$\text{Assets} - \text{Liabilities} = \text{Shareholders' equity}$$

Shareholders' equity, therefore, represents the difference between assets and liabilities; that is, net assets. It shows how these net assets have been financed. For example, consider the following sample balance sheet:

	\$
Assets	
Cash	1 000
Accounts receivable	10 000
Property, plant and equipment	<u>89 000</u>
Total assets	<u>100 000</u>
Liabilities	
Accounts payable	<u>5 000</u>
Total liabilities	<u>5 000</u>
Net assets	<u>95 000</u>
Shareholders' equity	
Share capital	70 000
General reserves	6 000
Retained profits	<u>19 000</u>
Total shareholders' equity	<u>95 000</u>

General reserves will be discussed in section 15.3. For now, assume that they were created by debiting retained profits and crediting general reserves. Total shareholders' equity of \$95 000 indicates that net assets of \$95 000 have been financed by original contributions from owners (share capital) of \$70 000 and \$25 000 (\$19 000 + \$6000) from past accumulated profits that have not been distributed in dividends. The transfer of \$6000 from retained profits to general reserves provides a signal to users that this \$6000 is unlikely to be paid out in dividends in the future, although it is still legally possible to do so. Note that neither retained profits (\$19 000) nor general reserves (\$6000) indicate there is cash or some 'pot of gold' for this amount. In fact, in the previous example you can see that cash only totals \$1000.

Share capital, reserves and retained profits are now discussed in sections 15.2, 15.3 and 15.4, respectively.

15.2 Share capital

The majority of shares issued by companies are *ordinary shares*, which confer no special rights or privileges on their holders. The ordinary shareholders are the main risk-takers of companies, because they don't receive a dividend unless adequate profits are earned. There is, however, no upper limit to the rate of dividend that may be recommended by the directors if profits permit. Normally, the holders of ordinary shares have full voting rights.

LO2

Preference shares confer special rights on their holders. Generally, these involve priority with respect to dividends at a prescribed rate and, in addition, the holders may enjoy preferential treatment with respect to the return of capital if the company terminates in a liquidation or winding up. Profits must be available before any dividends may be declared and, to protect the interests of preference shareholders, provision is generally made for the priority of unpaid preference dividends to accumulate from year to year until profits are adequate. Shares with this entitlement are termed cumulative preference shares. A company may also issue participating preference shares, which means that, after the fixed amount of preferred dividend is paid, preference shareholders may participate in other dividends with the ordinary shareholders if profits exceed a specified level.

Apart from some defined exceptions under the *Corporations Act 2001*, a company invites the public to subscribe for shares by issuing a *prospectus*, which contains the relevant application form. The content of the prospectus must conform with the requirements of the *Corporations Act 2001* and must contain an audit report. The prospectus is designed to inform potential shareholders, or their advisers, about the financial position of the company, its prospects and the rights attached to the securities being issued.

In its simplest form, the journal entry for the issue of 100 000 fully paid \$2.50 ordinary shares would be:

		\$	\$
DR	Cash	250 000	
CR	Share capital		250 000

This form is appropriate where the shares are issued to an institutional investor or where the share issue is administered by an underwriter.

Public companies can also issue shares directly to the public, based on a prospectus. Assume that the previous issue of 100 000 shares at \$2.50 were all payable at the time of application. In this case, the payment of \$250 000 must be held in a special cash trust account, since the board of directors has not yet formally resolved to issue the shares to the applicants. The journal entry would be:

		\$	\$
DR	Cash trust	250 000	
CR	Application		250 000
<i>To record receipt of cash of \$2.50 per share on 100 000 shares.</i>			

Once the minimum subscription is received and the directors allot the shares to the applicants, the amount of money paid by successful applicants would be transferred from the cash trust account to the cash at bank account.

		\$	\$
DR	Cash at bank	250 000	
CR	Cash trust		250 000
<i>To record the transfer of application payments into the cash at bank account</i>			

If there had been excess application funds, the application money of the unsuccessful applicants would be refunded with the following entry:

		\$	\$
DR	Application		XXX
CR	Cash trust		XXX

The last step is to transfer the balance from the application account to the share capital account, as the shareholders have now been issued with shares:

		\$	\$
DR	Application	250 000	
CR	Share capital		250 000

The balance sheet under shareholders' equity would show an amount of \$250 000 under share capital.

For most Australian companies, the full payment for shares is required at the time of issue. As a result, for the majority of companies, the entries discussed will be all you need to know. However, it is possible for a company to require shareholders to pay the amounts in instalments. In this case, the entries become a little more complex and are discussed as follows.

Assume that the conditions of the earlier share issue of 100 000 shares at \$2.50 required \$1.70 per share down payment with the application. On allotment, another \$0.50 is due, and a further \$0.30 is due when determined by the board of directors. The application money was received on 10 April. On 28 April, the shares were issued (or allotted), with the amount payable on allotment received on 10 May. On 12 July, the directors called for the remaining amount owing on the shares, which was received on 28 July. The journal entries would be as follows:

		\$	\$
10 Apr	DR Cash trust	170 000	
	CR Applications		170 000
	<i>Cash received on application</i>		
28 Apr	DR Cash at bank	170 000	
	CR Cash trust		170 000
	<i>Transfer to cash at bank on allotment</i>		
28 Apr	DR Application	170 000	
	CR Share capital		170 000
	<i>To record the amounts due on application</i>		
28 Apr	DR Allotment	50 000	
	CR Share capital		50 000
	<i>Allotment amount of 50 cents per share</i>		
10 May	DR Cash at bank	50 000	
	CR Allotment		50 000
	<i>Allotment money received</i>		
12 July	DR Call	30 000	
	CR Share capital		30 000
	<i>Call of 30 cents per share</i>		
28 July	DR Cash at bank	30 000	
	CR Call		30 000
	<i>Receipt of call money</i>		

The general ledger accounts would appear as follows:

Cash trust			
Application	<u>170 000</u>	Cash at bank	<u>170 000</u>
Cash at bank			
Cash trust	170 000		
Allotment	50 000		
Call	<u>30 000</u>		
Balance	250 000		
Share capital			
		Application	170 000
		Allotment	50 000
		Call	<u>30 000</u>
		Balance	250 000
Application			
Share capital	<u>170 000</u>	Cash trust	<u>170 000</u>
Allotment			
Share capital	<u>50 000</u>	Cash at bank	<u>50 000</u>
Call			
Share capital	<u>30 000</u>	Cash at bank	<u>30 000</u>

If these were the only transactions for the company, the balance sheet would appear as follows:

\$	
Assets	
Cash	<u>250 000</u>
Shareholders' equity	
Share capital	<u>250 000</u>

The issue of share capital can get much more complex, and topics such as oversubscription, undersubscription, forfeiture of shares, reissue of forfeited shares and the issue of preference shares are left until later courses.

So far, we have been dealing with the issue of shares. A common practice at present is for companies to buy back their own shares. Share buybacks occur when companies have surplus cash and they use this to buy back their own shares, thus reducing the number of shares issued and the dollar amount of shareholders' equity. If they can maintain profits at approximately the same level, this action will result in increases in such ratios as return on equity and earnings per share.

The overall impact on the accounting equation of a share buyback is to decrease an asset (cash) and decrease shareholders' equity. In terms of debits and credits, the credit entry will be to cash. Companies are allowed some flexibility in which shareholders' equity account to debit. Three possibilities are share capital, retained profits and reserves. In the unlikely event that shares were bought back at the same price as they were issued, the debit entry would be to share capital. If they were bought back at a price above the issue price, a possibility would be to debit the share capital account for the amount of the issue price and debit retained profits or a reserve account for the additional amount.

15.3 Reserves

LO3 Reserves are not defined in the *Corporations Act 2001*, the Australian Accounting Standards or the Statements of Accounting Concepts of the *Framework for the Preparation and Presentation of Financial Statements*. However, nearly every annual report you pick up will have reserves included in the balance sheet category of shareholders' equity. Reserves can take many different forms, and the terminology between companies varies greatly, which is not surprising given the lack of professional guidance.

Accounting standards require the disclosure of reserves in the balance sheet and require further disclosure in the notes for each class of reserves, a description of the nature and purpose of the reserve, the amount of the reserve at the beginning of the financial year, the nature and amount of changes during the year, and the amount at the end of the financial year.

It is important to understand the nature of each type of reserve account in a company's financial statements because, under the *Corporations Act 2001*, dividends can only be paid out of profits. It is, therefore, important to know whether each reserve account is a form of accumulated profits or not. One type of reserve is based on *Corporations Act 2001* requirements; namely, capital redemption reserves created when preference shares are redeemed out of profits. These reserves cannot be used to pay a cash dividend. Other reserves may be created by the appropriation of profits and the revaluation of noncurrent assets. These would include general reserves and revaluation surpluses. Cash dividends can be paid out of general reserves. Case law indicates that cash dividends can be paid out of across-the-board revaluation of assets, but it is uncertain whether cash dividends can be paid out of a selective or partial revaluation.

Three of the more common reserves you are likely to come across are the general reserve, the revaluation surplus and the foreign currency translation reserve. The general reserve account is an amount transferred from retained profits by the entry debit retained profits (i.e. decrease in a shareholders' equity account) and credit general reserve (i.e. an increase in a shareholders' equity account). The purpose of this transfer is often to indicate to shareholders that the amount of the transfer is unlikely to be paid out in dividends and will be retained in the business. However, the directors can later decide to transfer the amount back to retained profits. As a result, the entry does not achieve a great deal, as there is no change in where funds are invested, nor are the amounts earmarked for specific future use.

Another reserve account that was discussed in Chapter 13 was the revaluation surplus (previously called the asset revaluation reserve). Recall that the entry to revalue, say, land and buildings upwards was:

	\$	\$
DR Land and buildings	XXX	
CR Revaluation surplus		XXX

A third common example of a reserve account is the foreign currency translation reserve that relates to exchange differences, which arise in translating the accounts of a self-sustaining foreign operation into domestic currency. Again, these issues are left to a more advanced accounting course.

15.4 Retained profits and dividends

LO4 Students and users of accounting reports often have problems with interpreting what a balance in retained profits means. The retained profits balance shows the amount of profits a company has made over time, less any dividends declared. So if a company had never declared any dividends, its retained profits account would equal all profits ever made since inception.

A large balance in retained profits does not mean there is a 'pot of gold' set aside for future use. Nor does it mean there is cash available to pay employee entitlements if the company fails. It simply tells you the maximum amount of dividends that can be paid in the future (assuming the company has the cash to pay the dividends).

Let's consider four companies, A, B, C and D:

	A	B	C	D
	\$	\$	\$	\$
Cash	2 000	25 000	2 000	25 000
Property, plant and equipment (PPE)	<u>98 000</u>	<u>75 000</u>	<u>68 000</u>	<u>20 000</u>
Total assets	<u>100 000</u>	<u>100 000</u>	<u>70 000</u>	<u>45 000</u>
Current liabilities	10 000	10 000	10 000	10 000
Loan	40 000	40 000	10 000	0
Retained profits	20 000	20 000	20 000	5 000
Share capital	<u>30 000</u>	<u>30 000</u>	<u>30 000</u>	<u>30 000</u>
Liabilities and SE	<u>100 000</u>	<u>100 000</u>	<u>70 000</u>	<u>45 000</u>

Each company has been in existence for five years, has issued share capital of \$30 000, has current liabilities of \$10 000 and earned profits of \$20 000. D is the only company that has declared and paid dividends (dividends of \$15 000 have been paid).

Even though the four companies have received the same cash from the issue of shares, earned the same profits and have the same current liabilities, they have used cash in very different ways. Company A has taken a growth strategy with the largest PPE and has borrowed (\$40 000) to be used with cash generated through share issues and profits to buy PPE. Company B is similar except it has not grown as quickly and has higher amounts in cash but less PPE. Company C is the same as Company A, except it has borrowed \$30 000 less and has \$30 000 less in PPE. So note that A, B and C all have the same retained profits but they don't all have the same amount of cash to pay bills and have different levels of assets. Company D is different in that it has paid out \$15 000 in dividends (\$20 000 – \$5000) and it has not borrowed. Consequently, it has not been in a position to obtain PPE to the same level as the other three firms.

A note outlining the changes in retained profits was shown in Chapter 2. The contents of this note can now be expanded to include a transfer to reserves, as shown.

Retained earnings	\$
Balance at start of period	X
Changes in accounting policy	<u>X</u>
Restated balance	X
Profit for the period	<u>X</u>
Total for the period	X
Dividends declared	(X)
Transfers to and from reserves	<u>X</u>
Balance at end of period	X

In the example shown, you can see that there are four main ways in which the balance of retained profits changes:

- a profit or loss for the year (from the income statement)
- changes in accounting policies that give retroactive effect to the changes, with any resulting revenue or expense directly adjusted to retained profits; that is, instead of adjusting this year's revenue or expense, we adjust retained profit, which is where the previous year's profits are
- dividends declared during the year
- a transfer to or from a reserve, such as a general reserve or the foreign currency translation reserve – if it were a transfer to a reserve, then the reserve account would be credited and retained profits debited.

Cash dividends

Dividends may be provided for on the basis of share capital, or paid according to the number of shares held. With respect to the former, a dividend of 5 per cent could be declared, which means that 5 per cent of the share capital is paid. With respect to the latter method, the dividend is declared on the per-share basis, such as 20 cents per share, which would mean that a shareholder with 5000 shares would receive \$1000.

Generally, companies have the right to make a payment of interim and final dividends. Interim dividends are usually authorised by the board of directors during the year, based on an expectation of adequate profits. When an interim dividend is declared, there is a debit to retained profits and a credit to dividends payable. When paid, dividends payable is debited and cash is credited. For example, assume Trip Ltd declared an interim dividend on 15 January 2022 of 5 cents per share (one million issued shares) and paid it on 4 February 2022. The journal entries for the 2022 financial year would be:

				\$	\$
15 Jan	DR	Retained profits		50 000	
	CR	Dividends payable			50 000
<i>To record declaration of interim dividend</i>					
4 Feb	DR	Dividends payable		50 000	
	CR	Cash			50 000
<i>To record payment of interim dividend</i>					

Directors recommend a final dividend to be authorised by the shareholders at the annual general meeting of the company, which is held after the end of the company's financial year. Shareholders may not increase the amount beyond that recommended by directors, but may reject or reduce the recommended amount. However, they almost invariably ratify the directors' resolution. In previous years, entities recognised a liability for dividends in the balance sheet when that dividend was declared after the reporting date but before the completion of the financial statements. Because of the adoption of international accounting standards, a liability can no longer be raised at balance sheet date if the dividend is declared after that date. Dividends are now provided for in the period in which they are declared. Given that final dividends are declared after the balance sheet date but before completion of the financial report, entities now disclose final dividends in the notes as an event occurring after balance date (AASB 110 paragraphs 12 and 13).

For example, assume that Trip Ltd, at a meeting on 1 August 2022, recommended a final dividend of 10 cents per share on its 1 million shares. The dividend is authorised by shareholders at an annual general meeting on 28 September 2022 and the direct credits for the dividend payments are lodged with the bank on 5 October 2022. The journal entry would be as follows:

2022				\$	\$
28 Sept	DR	Retained profits		100 000	
	CR	Dividends payable			100 000

When the final dividend is paid on 5 October, the journal entry is:

5 Oct	DR	Dividends payable		100 000
	CR	Cash		100 000

Consider now whether the journal entry shown would be any different if the board had decided to recommend the dividend on 30 June 2022. The answer is no, because the new accounting standards do not permit recognition of a dividend at the company's reporting date unless the dividend has been declared and is not subject to further approval (e.g. by shareholders at the annual general meeting).

As noted earlier, dividends can only be paid out of profits, including both this year's profit and previous years' profits. Therefore, directors must ensure that profits are legally available before they recommend a certain level of dividends. They also need to ensure that there will be adequate cash available to pay the dividend. Changes in dividends are important signals to shareholders; therefore, directors need to exercise care in determining the level of dividends each year.



HOW'S YOUR UNDERSTANDING?

15A A company declares and pays a dividend of 10 cents per share on 50 000 shares. What is the effect on each of the following?

- (i) total assets
- (ii) total liabilities
- (iii) expenses for the year
- (iv) shareholders' equity

15.5 Bonus issues and share splits

Dividends do not have to be cash dividends. Companies can also issue share dividends, which are normally **LO5** called bonus issues in Australia.

Consider the case of a company that has five million fully paid ordinary shares. Assume it has the following shareholders' equity section at 1 August 2022.

		\$
Shareholders' equity		
Share capital		5 000 000
Revaluation surplus		1 800 000
Retained profits		<u>1 400 000</u>
Total shareholders' equity		<u>8 200 000</u>

Assume that on 3 September, the company declares a 1:4 bonus issue out of the revaluation surplus. This means that for every four shares in existence, one additional share will be issued to shareholders at no charge. The shares were issued on 3 September. The journal entry would be as follows:

		\$	\$
3 Sept	DR	Revaluation surplus	1 250 000
	CR	Share capital	1 250 000
<i>To recognise a bonus issue from revaluation surplus</i>			

The shareholders' equity section of the balance sheet before and after the bonus issue would appear as follows:

	Before bonus issue	After bonus issue
	\$	\$
Shareholders' equity		
Share capital	5 000 000	6 250 000
Revaluation surplus	1 800 000	550 000
Retained profits	<u>1 400 000</u>	<u>1 400 000</u>
Total shareholders' equity	<u>8 200 000</u>	<u>8 200 000</u>

Note that total shareholders' equity has remained constant and that there has been only internal movement within the shareholders' equity section of the balance sheet. Have shareholders gained from this issue? Shareholders will only gain if the market value of the combined shares is greater than it was before the bonus issue. Total shareholders' funds have remained constant, so it is unlikely that the value of the firm has increased. If a shareholder owned 5 per cent of the company shares before the bonus issue, he or she would still own 5 per cent after the bonus issue. Thus, the share market will normally adjust the price of the shares accordingly so the total value of each shareholder's shares remains the same. However, if it is believed

that the bonus issue will be accompanied by increased total dividends (e.g. when the dividend per share remains the same), the share market will incorporate this information in determining the new share price.

So why do companies make bonus issues? There are a number of potential reasons. First, they provide a return to shareholders without affecting cash. While the value of that return has been questioned earlier, many shareholders may perceive it to be a benefit. Second, it reduces the market price of each share, which may make the shares available to a wider range of investors. Third, it can be used to capitalise reserves; that is, turn them into permanent share capital. Fourth, they can be a useful takeover defence by forcing the offeror to withdraw and resubmit the offer or extend the original offer price to the newly created shares.

Share splits simply increase the number of shares available. For example, a company has 100 000 fully paid-up shares. If there was a 2:1 share split, there would be 200 000 shares. The share split does not change the balance of any of the shareholders' equity accounts. For example, share capital is \$200 000 before and after the share split. Therefore, no journal entry is required to record the share split. The purpose of the share split is generally to reduce the unit market price of each share so that the shares are appealing to a wider range of investors.

15.6 Revenues

LO6 Revenues are one form of income. The Framework defines income as 'increases in assets, or decreases in liabilities, that result in increases in equity, other than those relating to contributions from holders of equity claims'.

No doubt this definition looks pretty complicated. Remember that not all revenue is as simple as selling a product for cash, and new forms of revenue are being created all the time. Thus a definition of revenue that can handle many different situations is needed. So let's consider some of the phrases in this definition. 'Increases in assets' includes receiving cash, receivables (a promise by someone to pay you cash at a later date) or other goods or services (e.g. free advertising space) in exchange for goods or services that the selling company has provided. While less common, income can result from the settlement of liabilities. For example, the selling company may provide goods or services to another company it owed money to in settlement of an obligation to repay an outstanding loan; that is, by providing the goods or services it no longer has to repay the loan. Thus you can see that the recognition of income occurs simultaneously with the recognition of the increase in the asset or the decrease in liability. That is, you need to know when an asset or liability is recognised in order to know whether income is recognised.

Another point about the definition is that there must be an increase in equity, other than those relating to contributions from holders of equity claims (i.e. issue of shares is not revenue). Also note that if equity is to increase, either assets increase or liabilities decrease; that is, $A - L = SE$.

We will now consider five examples and you can use the prior discussion to decide if they meet the definition of revenue.

- 1 A company sells a box of printer paper for \$12 cash. There is an inflow of economic benefit (there is an increase in assets, cash); there is an increase in equity as the asset increases ($SE = A - L$) and therefore revenue can be recognised.
- 2 A wholesaler sells 1000 boxes of paper for \$8000 on credit. There is an inflow of economic benefit (there is an increase in assets, accounts receivable); there is an increase in equity as the asset increases ($SE = A - L$) and therefore there is revenue.
- 3 A painting company owes the bank \$20 000, but because it has cash flow problems it has been having difficulty in repaying the amount. The bank agrees to forgive the debt in return for the company painting its head office. The company carries out the painting job. There is an inflow of economic benefit (loan does not have to be paid in the future); there is an increase in equity as a liability decreases ($SE = A - L$) and therefore there is revenue.
- 4 A company borrows \$10 million from the bank. Here there is no increase in equity as both assets and liabilities increase by the same amount ($A - L = SE$) and therefore revenue is not recognised.

- 5 A company issues 10 000 shares at \$8 to existing shareholders. While equity increases (i.e. both assets and shareholder equity increases), this is a contribution from equity participants and is not included as revenue according to the definition of revenue.

Traditionally revenue is income that arises during the course of the ordinary activities of an entity; examples of revenue include sales, fees, interest, dividends, royalties and rent. Gains are income that arises from the disposal of noncurrent assets or from the revaluation of current and noncurrent assets, such as marketable securities and long-term investments, respectively.

While AASB 15 defines revenue as being earned in the course of an entity's ordinary activities, there is no definition for 'ordinary activities'. Thus, whether income is classified as a revenue or a gain is a matter of professional judgement'.



FOR YOUR INTEREST

The Securities and Exchange Commission (SEC) in the United States regularly reports the SEC's enforcement actions that are based on improper issuer financial reporting, fraud, audit failure or auditor independence violations. Hundreds are charged with fraud in connection with reporting violations, many of which result in lengthy jail sentences. The greatest number of actions generally relate to improper revenue recognition.

15.7 Revenue recognition

It can be said that profit over the life of an organisation is easy to determine. At the end of the organisation's life, all expenses have resulted in cash outflows, and all the revenue earned has resulted in cash inflows. There is no need for estimates; the results are known with certainty. Profit for the life of the organisation is simply the difference between the total cash contributed to the business by the owners and the total cash withdrawn by the owners plus any cash remaining at the end.

LO7

LO8

The difficulty in reporting profit periodically – which is how economic decision-makers require information about the operations of a firm – is that of finding a way to put the essentially continuous operations of a firm into discrete time periods. The result is that profit determined earlier, so that it is relevant for evaluating the organisation's performance over shorter decision periods, is unavoidably subject to estimates and judgements, because the whole story is never known until the end, but no one wants to wait for the end. These judgements include what proportion of the revenue on a construction job or a service agreement goes into this year; what proportion of rent paid is an expense this year versus an asset at the end of the year (called prepayments); what amount of wages has been earned this year, regardless of whether it has been paid yet; and over what period the equipment should be depreciated.

We are back to the ever-present trade-off between relevance and representative faithfulness (often referred to as 'reliability') in profit measurement. If revenues and expenses are recognised earlier, so that they are more relevant for decision-making, they will not be as reliable as they would be if recognition was delayed until later, when outcomes of the various economic activities are better known.

Revenue recognition points

If we are to describe the firm's operations for a given period by calculating the profit for that period, we must define a means by which we can measure the amount of profit that can be attributed to that period. We accomplish this by:

- defining how much revenue can be recognised in that period
then
- determining the expenses that were incurred to generate the revenue.

Profit – the value added by the activities of the firm – is just the difference between the recognised revenue and the recognised expenses.

But what are the revenues, or the expenses, for a period? Profit is earned by a wide variety of actions taken by the firm that satisfy the performance obligations within contracts. There is a whole sequence of activities that are intended to help generate profit. This process can be part of meeting these performance obligations, therefore generating revenue and incurring expenses, including, for example:

- organising the firm in the first place
- buying or building the premises
- buying or making inventory
- advertising
- receiving an order
- selling the good or service
- delivering to the customer
- billing the customer
- collecting cash
- providing warranty service.

How should we recognise revenue when there is such a series of activities as those listed? Should we recognise it a bit at a time as each activity is carried out? This would approximate the economic process underlying the business. This would be relevant, but by the same token it would be very subjective and imprecise, because it is difficult to say what each activity actually adds. For example, how do you tell, when the company is just being organised, what revenue that form of organisation will help to generate? It would also be expensive to implement, with armies of accountants scurrying about measuring minute value changes generated by the various activities and writing large numbers of journal entries to recognise each value change.

Instead, for greater objectivity and verifiability and lower accounting costs, accountants usually choose one activity in the sort of sequence described as the critical event in the revenue-generation sequence that can be readily documented, and recognise all of the revenue at that point. This is a simplification because, clearly, some revenue could have been recognised when earlier activities were carried out, and probably some should be recognised when later activities take place. For some companies, such as those building big projects like power stations, pipelines, highways, tunnels and bridges, it is worthwhile estimating revenue at several points along the way and where the customer has control of the project while being constructed (see later discussion on over time revenue recognition), but for most the simplification of the critical event is followed. *The most common critical event used is the point of delivery of the goods or services to the customer.*

It should be noted that sometimes quite a few of these events happen at the same time and delivery is very easy to determine. For example, if you go into a fast food chain and buy a burger and drink, the order, sale, delivery, billing and cash received all are likely to happen together. If you go to a different shop and buy some custom-made shirts, the sale occurs when you are measured and agree to buy, with billing (being told 'it will cost you \$100') and possibly cash paid occurring at the same time; delivery may be a week later. Possibly only part of the cash will be paid on that day of sale and the remainder paid later. Now consider buying an airline ticket from Sydney to Melbourne. When you go online, the billing, sale and payment (via credit card) will all happen in a very short period and then delivery of the flight will occur later when the flight takes off. This could be six months or more. Note that Qantas refers to point at which revenue from customers is recognised is 'when passengers and freight are uplifted'. It gets more complicated if you buy an around-the-world ticket and delivery occurs in stages.

At this point you can see that these events can get complicated. Consider an Australian mining company selling iron ore to a manufacturer in China. The sale may occur in 2022 with agreed delivery dates at agreed prices over the next three years. In this case, what is meant by delivery? Is it when the ore is taken out of the ground, put into trucks, the trucks arrive at the Australian wharf, loaded onto the ship, arrives at the Chinese wharf or when it arrives at the Chinese factory? One would have to go to the contract to decide what was

considered delivery, which is the key criterion for revenue recognition. Payments could be tied to delivery, or they could be in advance, or they could be after delivery (e.g. payable in 10, 30 or 60 days).

Elements for revenue recognition

As specified in AASB 15, revenue should be recognised in a way that reflects the transfer of goods and services to customers and the amount of consideration an entity is expected to obtain for sending the goods or rendering the services. This requires that a five-step revenue recognition model be applied to determine whether revenue can be recognised. Each step is necessary to be satisfied in order for revenue recognition to take place. The following is the five-step model that is used to determine whether revenue can be recognised:

- 1 identify the contract(s) with customers
- 2 identify the separate performance obligation(s) in the contract
- 3 determine the transaction price of the contract
- 4 allocate the transaction price to the performance obligations in the contract
- 5 recognise revenue when each performance obligation is satisfied.

The definitions of two important terms in the five-step revenue recognition model should be considered. The definitions are as follows within AASB 15:

Contract – An agreement between two or more parties that creates enforceable rights and obligations.

Customer – A party that has contracted with an entity to obtain goods or services that are an output of the entity's ordinary activities in exchange for consideration.

The revenue recognition criteria, as seen in the five-step revenue recognition model, have been formulated to ensure that revenue will only be recognised when there is objective evidence that revenue has been earned.

The key considerations for recognising revenue are as follows:

- 1 Identify the contract(s) with customers. This could be a written or verbal contract, or is implied through customary business practices. For example, an Australian mining company may have a written contract with a Chinese manufacturer. This contract would have the information about the amount of revenue and the particular performance obligations that need to be satisfied to earn the revenue. The contract could inform about the transfer of the legal title (i.e. when the ownership changes), such as when the iron ore leaves the Australian port. Or it could outline the customary business practice where the passing of control from seller to the buyer occurs at the point of sale (such as when purchasing a burger, shirt or computer).
- 2 Identify the performance obligation(s) in the contract. This performance obligation is often contained within the contract. To determine what is obligated, we examine what the contract promises will be delivered to a customer, such as the goods or services provided. This step requires determining whether separate performance obligations can be identified and, if so, if these obligations have been satisfied, i.e. that is the point at which revenue can be recognised. For example, the contract between the Australian mining company and the Chinese manufacturer could be for a single shipment of iron ore with the quantity specified. This would then be the performance obligation of placing on the ship the required quantity of iron ore. On the other hand, it could be that the contract is for several shipments of iron ore over a one-year period. In this case, the multiple performance obligations could have been included within a single contract. Each shipment of iron ore within the one-year period may be a distinct performance obligation. Being able to separate these performance obligations can allow the recognition of revenue over the contract period.
- 3 Determine the transaction price of the contract. Knowing this transaction price will allow the allocation of revenue to the separate performance obligations within a contract. For example, a publishing company may publish a new book and while it may have completed the performance obligation – in this case, the production process, the amount of revenue will not be known as revenue is dependent on future sales. The author may have completed all their work, satisfying their performance obligation, but again there is

an unknown about the future sales for which a royalty payment may be based on sales of the book. The transaction price recognised must be the amount of consideration that is expected to be collected. The consideration could be a fixed amount, variable or could be both. The amount of consideration recognised should be what the entity is entitled to collect. The entity must assess whether it is probable that the consideration will be collected before revenue is recognised. If an entity is not able to determine that consideration will be collected, this would then require delaying revenue being recognised. For example, a retailer could devise a marketing campaign of offering a television for a buy now and pay for the price of \$1000 in 12 months but has never offered this before. If this is the first time these contract terms are set, then it could be that the retailer is unable to determine whether it is probable that all the cash would be collected in 12 months. In this example, the retailer would be required to delay revenue recognition until the cash is collected from the customer.

- 4 Allocate a transaction price for each performance obligation. For contracts with a single performance obligation, it is straightforward to simply allocate all the transaction price to that one performance obligation. On the other hand, a transaction may be set with multiple performance obligations and if that is the case, we need to allocate the transaction price to each of these separate performance obligations. For example, a company may sell a mobile phone for a stand-alone price of \$1500 and then offer the customer a \$100 repair plan for 12 months for any damages, which is usually sold separately. The total stand-alone price for the phone and repair plan would be \$1600. To attract customers to purchase their phone, this company could devise a marketing campaign to offer a bundled package of the phone plus repair plan for a total price of \$1400. Within this contract, there are two separate performance obligations, one being the phone and the other being the repair plan. The company providing this discount relates to both performance obligations. The discount would be allocated to the two performance obligations as follows:

$$\begin{aligned}\text{Phone allocated discount amount} &= (\text{stand-alone price} / \text{total stand-alone price}) \times \text{discount allocated} \\ &= (\$1500 / \$1600) \times \$200 \\ &= \$187.50\end{aligned}$$

$$\begin{aligned}\text{Repair plan allocated discount amount} &= (\$100 / \$1600) \times \$200 \\ &= \$12.50\end{aligned}$$

When the phone is sold to the customer, on delivery or point of sale, the allocated amount of revenue would be recognised ($\$1500 - \$187.50 = \$1312.50$). The amount for the repair plan is not recognised initially, instead it is unearned revenue and could be either recognised over time, i.e. monthly, or at the end of the 12-month period, for the allocated amount of revenue ($\$100 - \$12.50 = \$87.50$).

- 5 Recognise revenue as each performance obligation is satisfied. The performance obligation is commonly satisfied when the control of the goods or services passes from the entity to the customer. For example, the contract between the Australian miner and the Chinese manufacturer could stipulate that when ownership changes hands, such as when the iron ore leaves the Australian port. There are examples when the company retains control and therefore revenue is not recognised. For example:
 - when the receipt of the revenue is contingent on the buyer deriving certain revenue. Owners of shopping centres often charge the shops a fixed fee plus a percentage of sales. Revenue related to the latter cannot normally be recognised until the shop has made sales. This may be ascertained at the end of a period – a month, a quarter or a year.
 - when a sale includes both shipping and installation and the installation has not been completed. Generally, revenue is recognised here when substantially all of the procedures have been provided, indicating the performance obligation has been satisfied, so a judgement is needed when this occurs. Is it when 100 per cent of the services have been performed, or 90 per cent or 80 per cent?

- when buyers have the right to cancel a sale and the seller may be uncertain about the probability of returns. For example, a newly established company may guarantee full refunds for a particular product for up to three months after the sale. In this case, there is likely to be a lot of uncertainty about the probability of return, and the recognition of revenue (or part of it) may be deferred to the end of the three-month period. On the other hand, an established retailer such as Myer or David Jones may have a refund policy when the customer is not satisfied. In the latter case, revenue would be recognised at the time of sale if the retail store can reliably estimate future returns and recognise a liability (and related expenses) at that point for returns based on its previous expense. Note again that judgement is involved in this situation.

Revenue can be recognised either at a point in time in the case of the sale of goods or services. In other types of transactions, revenue can be recognised over a period of time. For example, a long-term construction contract for a sports stadium where the customer has control of the stadium while it is being constructed.



HOW'S YOUR UNDERSTANDING?

15B When would revenue likely be recognised for each of the following organisations?

- (i) a construction company that builds high-rise office buildings
- (ii) the student cafeteria at your university
- (iii) your local gymnasium
- (iv) a discount airline where all tickets are non-refundable
- (v) tickets to the Australian Open tennis.

Methods of recognising revenue

To deal with many of the problems mentioned, there are several points in the revenue-earning process at which revenue is commonly recognised, though, as noted, point of sale or delivery is the most common. You'll see those points further on.

To recognise the earning of revenue when the critical event has taken place, we make the following recognition entry:

DR	Cash or accounts receivable or unearned revenue liability	XXXX
CR	Revenue	XXXX

Let's take a closer look at the four most commonly used methods of revenue recognition.

1 AT A POINT IN TIME

For most retail, service and manufacturing businesses, revenue is recognised at the point in time when the product or service is sold. 'Sold' is usually defined as being when the goods or services have been shipped to the purchaser; that is, when legal title passes to the purchaser.

- At that point, substantially all of the performance obligation of the service has been undertaken, significant risks and rewards associated with ownership showing that contract has been transferred to the buyer, terms and transaction price have been set, and cash has been received or there is an agreement to pay it in the future (e.g. accounts receivable).
- Even though there is some risk involved in extending credit, this can usually be adequately estimated as being probable to be received and deducted from the gross revenue by way of the bad debts expense account.

- Another risk at the point of sale is the possibility of returns and the likely service obligation under the warranties for the product or service sold. Again, this can usually be adequately estimated and recognised as an expense of the business and matched against the revenue of that period.

Point of sale or delivery is such a common revenue recognition method that most companies do not mention in their financial statements that they are using it. You are expected to assume it is the method being used if you are not told otherwise, as you probably would be if any of the other three methods to be discussed were used.

2 OVER TIME

Sometimes, the earnings process extends well beyond one financial period, as is the case in building construction, road building, ship building and other lengthy processes. In such situations, if a firm waited until the point of delivery to recognise revenue, it might report no revenue for one or more years, then, when the project was complete, report all the revenue. This would distort the performance picture of the company for the duration of the project: some years with no revenue, then one year with huge revenue, even though the company was working consistently on the contract all along. Generally, projects include enough documentation that the value added can usually be estimated and verified. Therefore, in an attempt to provide users with useful information and reflect the economics of what is happening, revenue may be recognised over time. (This also means recognising expenses and, therefore, profit over time.) A company is permitted to recognise revenue over time if one of the following criteria is satisfied (AASB 15):

- as the company completes its performance under the contract the customer simultaneously receives and consumes the benefits provided.
- the company's performance builds or enhances an asset which is controlled by the customer during this building or enhancement.
- the company's performance creates an asset for which there is not an alternative use to that company and the company is able to enforce the payment by the customer when the performance is completed.

The percentage of completion method is the most common way of recognising revenue over time. When using this method, there are two ways by which revenue can be determined:

- 1 Input method – where revenue is recognised based on the inputs into the work under the contract.
- 2 Output method – where revenue is recognised based on the value of the goods or services being transferred to the customer relative to the total value of the contract.

The input method entails determining what proportion of the project has been completed during the year and recognising that proportion of total expected revenue, expenses (costs) and, therefore, profit. Often this is done by measuring the proportion of expected total costs incurred during the period. In order to recognise revenue in this manner, total costs must be reasonably determinable, the contract price (total revenue) must be reasonably certain and there must be reasonable assurance of payment. The frequent use of the word 'reasonable' here shows that a lot of judgement is required in using this method!

In the percentage of completion method, revenue is recognised over time as the work proceeds. Let's assume Greenway Construction had a large, three-year project with total revenue of \$4 million and total costs of \$3.4 million. (Before expense recognition, project costs are charged to an inventory account for costs of construction in process. Like other inventories, this account holds costs until they are expensed.) Total profit for the project over the three years was, therefore, \$600 000. The project was 20 per cent completed at the end of the first year, 65 per cent completed at the end of the second year and 100 per cent completed at the end of the third year. Ignoring complications that arise when revenues and costs do not work out as expected, here are journal entries to implement the percentage of completion revenue (and matched expense) recognition during production. (For presentation purposes, all amounts are in thousands of dollars.)

		Year 1	Year 2	Year 3
Percentage of contract done in the year		20%	45%	35%
		<i>\$000</i>	<i>\$000</i>	<i>\$000</i>
Revenue recognition:				
DR Accounts receivable		800	1 800	1 400
CR Sales revenue		800	1 800	1 400
	<i>Percentage earned each year</i>			
Expense recognition:				
DR Cost of goods sold expense		680	1 530	1 190
CR Inventory (often called 'Construction in progress inventory')		680	1 530	1 190
	<i>Percentage of expenses each year</i>			
<i>Resulting profit each year</i>		120	270	210

You can see the *timing* effect of accrual accounting here. The annual entries have the effect of spreading the \$600 000 project profit out over the three years: 20 per cent to the first year, 45 per cent to the second and 35 per cent to the third.

3 AT A POINT IN TIME – ON CONTRACT COMPLETION OR TRANSFER OF GOODS AND SERVICES

It is also possible to wait until the contract has been completed or when the goods or services have been transferred and recognise the revenue at that point in time (AASB 15). This is like the 'at a point in time' method, except that if the work took a long time, perhaps several accounting periods, then it is very conservative, because no revenue would be recognised for a long time, then all of it at once. In the Greenway Construction example, if revenue, and the associated expenses, were recognised at a point in time for the production, the project profit would be:

- \$0 in year 1
- \$0 in year 2
- \$600 000 in year 3.

Compared to being recognised over time, profit would be:

- \$120 000 *lower* in year 1
- \$270 000 *lower* in year 2
- \$390 000 *higher* in year 3 (\$600 000 – \$210 000).

Therefore, if the company wanted to know what would happen ('what if') if it changed to the 'at a point in time' recognition, there is the answer, ignoring income tax.

4 WHEN CASH IS RECEIVED

If there is serious doubt as to whether it is probable that cash can be collected from a revenue-generating transaction, revenue recognition is delayed until the collection has actually taken place. This does not mean that any time a business extends credit to a customer, revenue recognition is delayed; this is only the case when the risk is great and the amount to be collected cannot be reasonably determined, or is not sufficiently predictable.

For example, certain real estate transactions that are speculative in nature and/or for which the collection of cash is contingent upon some future condition (such as the purchasers of a shopping centre successfully leasing a certain percentage of the space) will not be recognised as revenue until the cash is received.



HOW'S YOUR UNDERSTANDING?

15C In 2022, Flimsy Construction Ltd has recognised 38 per cent of the total expected revenue from a contract to build a house extension. The total contract price is \$43 000, and Flimsy expects its costs for the contract to be \$29 500. Costs so far have been in line with expectations. The house extension is under the control of the customer throughout the period of construction. How much contract expense should Flimsy recognise for 2022 and what would the resulting contract profit be for 2022?

Example of revenue recognition

CIMIC Group Limited is a large Australian company that is involved in long-term contracts. The relevant note from its 2021 accounts is as follows:

CIMIC GROUP LIMITED REVENUE RECOGNITION

The Group derives revenue from the long-term construction of major infrastructure projects, including roads, railways, tunnels, airports, buildings, social infrastructure, water, energy and resources facilities across Australia and Asia. ...The transaction price is normally fixed at the start of the project. It is normal practice for contracts to include bonus and penalty elements based on timely construction or other performance criteria known as variable consideration, discussed below.

The performance obligation is fulfilled over time and as such revenue is recognised over time. As work is performed on the assets being constructed, they are controlled by the customer and have no alternative use to the CIMIC Group, with the Group having a right to payment for performance to date.

Generally, contracts identify various inter-linked activities required in the construction process. Revenue is recognised on the measured output of each process based on appraisals that are agreed with the customer on a regular basis.

Revenue earned is typically invoiced monthly or in some cases on achievement of milestones or to match major capital outlay. ...

Source: CIMIC Group Limited, Annual Report 2021.

Some key points in the disclosure by CIMIC Group Limited are: it recognises revenue over time and the company is likely to do this using the input method percentage of completion basis. Note that this is often difficult to determine in the construction industry. For example, total expenses for the whole project may be difficult to determine due to uncertainty. (For example, how hard is the rock to be drilled through? What will be the total of restoration costs?)



FOR YOUR INTEREST

Many studies, particularly in the United States, have noted the prevalence of improper revenue recognition. Some examples include:

- holding the books open after the close of a reporting period (such as holding them open for an extra five days)
- bill and hold (e.g. providing incentives to customers to write purchase orders before the customer needs the goods, and then holding the goods until the customer requests delivery)
- recognising all the revenue related to the contract up front at the time of sale, even though there were 'multiple element deals where significant future services or future products were to be delivered later'
- fictitious revenue (e.g. making fraudulent adjustments to sales numbers).

SOME SPECIFIC EXAMPLES

Here are some examples of revenue recognition of organisations you may be aware of. For each situation, state whether revenue would be recognised in December 2022.

- 1 In December 2022 you drop into McDonald's on the way home from university and buy dinner; the cost is \$10.14.

McDonald's would recognise revenue on the date you visited for \$10.14.

- 2 You buy a new Mazda 3 from your local dealer in November 2022, pay a \$2000 deposit and the car is delivered on 7 December. The total cost is \$27 800.

On the day of delivery revenue of \$27 800 would be recognised.

- 3 Assume the Cricket World Cup is to be held around Australian cities across November–December 2022. All tickets were sold out in June 2021.

Revenue for each game would likely be recognised on the day the game is completed. The revenue for each game is the number of tickets sold times the price of those tickets.

- 4 You decide to visit friends on the Gold Coast from 21 December 2022 to 4 January 2023. You buy your Qantas ticket in September for \$240 (\$120 each way) and charge it to your credit card.

Airlines generally recognise revenue at the time of takeoff, so \$120 would be recognised on 21 December and \$120 on 7 January.

- 5 Your university offers summer classes for \$3000 per subject and you have enrolled in the subject 'Advanced Accounting', which consists of 12 three-hour classes. Four classes each are held in December, January and February. You pay the fees in December.

The university would recognise the revenue over time 4/12 of \$3000 (i.e. \$1000) in December as this represents the percentage of the service it has provided.

- 6 Fairfax Media has a popular cooking magazine with 12 issues per year. During December 2022 it receives \$372 000 in subscriptions. The magazine will be sent to the subscribers on the first day of each month for the 12 months in 2023.

There is nil revenue in 2022, with 1/12 each month in 2023.

- 7 ANZ Stadium in Sydney has a large number of members who pay a yearly subscription and in return have access to the rugby league (e.g. State of Origin), rugby union (e.g. Bledisloe Cup), soccer (internationals) and other sports (e.g. AFL). If the annual membership fee is paid in December 2022, on what basis will the organisation recognise revenue throughout 2023?

The most likely revenue recognition will be over time with 1/12 per month. There are other possibilities including recognising a percentage of the revenue on the completion of each event. This becomes more complex because of differences in prices of tickets between events.

Measurement of revenue

Revenue is measured at the fair value of the consideration received or receivable. Here fair value is the amount for which the asset could be exchanged between knowledgeable, willing parties in an arm's length transaction; that is, the amount agreed between the buyer and the seller. In many cases this amount is determined by the seller (e.g. fast food chain, grocery shop or petrol station) and the buyer has a choice. In other cases there will be some negotiation; for example, buying a car or a house. If there are any trade discounts given, the revenue is recorded net of those discounts. For example, if the list price of a television is \$1000 but the retail store sells it for \$900, it is the \$900 that is recorded as revenue. Similarly, if bulk discounts are given, it is the discounted price that is recorded. If a shirt sells for \$50 but if you buy two the price per shirt is \$35, in this case sales revenue is $\$35 \times 2 = \70 .



FOR YOUR INTEREST

If a company sells a product for \$100 but also provides certain customers with discount coupons of 15 per cent, the company should recognise revenue of \$85.

It should also be noted that revenue only includes the gross inflows received or receivable by the entity on its own account; that is, if it collects amounts on behalf of third parties (e.g. GST), they are not revenue. Also if an entity is in an agency relationship where it collects amounts on behalf of a principal (e.g. travel agents on behalf of an airline), revenue would be the amount of the commission, not the total airfare.



HOW'S YOUR UNDERSTANDING?

15D When you go into an Australia Post shop you may notice on the wall that you can pay certain bills there; for example, electricity, water or other utilities. That is, Australia Post collects the payment on behalf of another company.

- (i) How much revenue does Australia Post recognise if it collects the cash for a \$100 invoice for Energy Ltd and keeps 1 per cent?
- (ii) How much does Energy Ltd recognise as revenue?

15.8 The expenses concept: the Framework

LO9 The Framework states that 'expenses are decreases in assets, or increases in liabilities, that result in decreases in equity, other than those relating to distributions to holders of equity claims.'

This definition of expenses encompasses losses as well as expenses arising in the course of the ordinary activities of the entity.

Expenses arising during the course of the ordinary activities of the business represent economic benefits that are consumed during the current accounting period, such as when prepaid insurance and stationery supplies are used up. In addition, there will be an outflow of future economic benefits in a future accounting period as a result of incurring a liability for electricity in the current accounting period. Some other expenses are wages and salaries, depreciation, cost of goods sold, rent and interest. Note that for all of the expenses listed there will either be a decrease in an asset (cash, inventory, equipment, prepayments, supplies asset etc.) or an increase in a liability (salaries payable, interest payable etc.). This means, in effect, that recognition of expenses occurs simultaneously with the recognition of an increase in liabilities or a decrease in assets. Examples include the accrual of employee entitlements or the depreciation of equipment.

Examples of losses include losses from disasters such as fire and flood, as well as those arising from the disposal of noncurrent assets. The definition of expenses also includes unrealised losses; for example, those arising from the effects of inventory value falling below cost. When losses are recognised in the income statement, they are usually displayed separately because knowledge of them is useful for making economic decisions.

According to the Framework, an expense should be recognised when, and only when:

- it is probable that the consumption or loss of future economic benefits resulting in a reduction in assets and/or an increase in liabilities has occurred
- the consumption or loss of future economic benefits can be measured reliably.

Most expenses result from the production or delivery of goods and services during the accounting period, and the large majority of these involve little or no uncertainty that economic benefits have been consumed; for example, cost of goods sold, cost of employee services, and supplies and equipment used. However, in some cases there will be uncertainty. For example, it may be difficult to determine whether the future

economic benefits embodied in noncurrent assets have suffered commercial impairment (in addition to physical wear and tear) during the reporting period.

In addition, generally the consumption or loss of economic benefits will be capable of being measured with a high degree of reliability. However, in some cases this measurement will be subject to estimates (such as future warranty claims). In such cases, whether an item would qualify as an expense depends on whether the estimates can be made reliably. In general, estimates such as warranties, long service leave, and so on can be made reliably based on past experience, and are therefore recognised as expenses. However, some provisions (for example, product liability claims) can be subject to a high level of uncertainty. If they are capable of reliable measurement, they should be included on the balance sheet as a liability.

The Framework also notes that 'the initial recognition of assets or liabilities arising from transactions or other events may result in the simultaneous recognition of both income and related expenses. ... The simultaneous recognition of income and related expenses is sometimes referred to as the matching of costs with income.' An example is cost of goods sold, which is generally recognised at the time of sale of the item. That is, we recognise inventory as an asset when it is purchased and then later it is treated as an expense when the inventory is sold. For example, if 100 items that cost \$10 each are sold on credit for \$13 the journal entry you learnt in Chapter 3 was:

		\$	\$
DR	Accounts receivable	1 300	
CR	Sales revenue		1 300
DR	Cost of goods sold	1 000	
CR	Inventory		1 000

Let's apply the Framework rules to a series of transactions to determine if they should be recognised as an expense:

- 1 Wages are paid to an employee (these wages have not previously been recorded as a liability): economic benefits are consumed; there is a decrease in an asset, cash; therefore there is a decrease in equity ($SE = A - L$); an expense is recognised.
- 2 Wages are owed to an employee for work done during the period: economic benefits have been consumed; there is an increase in liabilities, wages payable; therefore there is a decrease in equity ($SE = A - L$); an expense is recognised.
- 3 Wages payable from the previous year are paid during the year: an asset decreases (cash) and a liability decreases (wages payable); therefore there is no change in equity ($SE = A - L$); no expense is recognised.
- 4 Purchase of a machine for cash: there is a consumption of economic benefit; one asset (cash) decreases and another asset (equipment) increases; there is no change in equity ($SE = A - L$); no expense is recognised.
- 5 At the start of the year the balance in prepaid rent amounts to \$12 000 and covers the period from 1 July 2022 to 31 July 2022. Is there an expense on 31 July? Economic resources have been consumed in July; assets (prepayments) decrease and therefore equity decreases ($SE = A - L$); there is an expense of \$1000 recognised.



FOR YOUR INTEREST

Failure to record expenses can have serious consequences. The most prominent example of a company improperly capitalising (i.e. making an expenditure an asset) involved WorldCom in the United States in the early 2000s, which overstated profit by approximately \$9 billion. This was allegedly accomplished by improperly reducing its operating expenses by treating them as capital assets; that is, treating them as an asset and amortising the asset over time. As a result, the company materially understated expenses and overstated profits in order to meet analysts' forecasts.



HOW'S YOUR UNDERSTANDING?

15E Do any of the following result in an expense during the year?

- (i) \$80 000 of prepaid rent expired during the year
- (ii) Wages payable of \$3000 was paid
- (iii) \$20 000 of inventory became obsolete
- (iv) Increased the allowance for doubtful debts by \$32 000

15.9 Statement of profit or loss and other comprehensive income

LO10 In Australia, under AASB 101 (paragraph 81), the name of the key statement in published financial statements

LO11 providing information on a company's financial performance is the statement of profit or loss and other comprehensive income (also known as the statement of comprehensive income). Commonly, you will see companies present two statements, the first of which uses the familiar title of income statement to present profit or loss information as well as a separate statement of other comprehensive income.

Comprehensive income is defined as the change in equity during the period other than changes associated with transactions with owners in their capacity as owners. Comprehensive income is broken down into profit or loss and other comprehensive income. Other comprehensive income is not defined in AASB 101 (paragraph 7) as items of income and expense that are not required or permitted to be recognised in profit or loss. Fortunately, some examples assist us to understand this definition. Items that would be included in other comprehensive income are changes in the revaluation surplus (due to revaluation of property, plant and equipment or intangible assets; see Chapter 13); remeasurement of defined benefit plans for corporate-sponsored superannuation funds; gains and losses on translation of foreign financial statements; and a number of complex issues related to the application of fair values of financial instruments (fair value was discussed in Chapter 2).

The following is required to be included in the statement of profit or loss and other comprehensive income disclosures under AASB 101:

- 1 revenues
- 2 expenses
- 3 finance costs
- 4 gains and loss related to reclassification or derecognition of financial assets
- 5 shares of net profits or losses of associates and joint ventures accounted for using the equity method
- 6 income tax expense
- 7 discontinued operations
- 8 profit or loss
- 9 profit or loss attributable to non-controlling interests and owners of the parent company
- 10 comprehensive income attributable to non-controlling interests and owners of the parent company
- 11 total other comprehensive income
- 12 comprehensive income for the period, being the total profit or loss and other comprehensive income.

Some further explanations of the terms listed are now given:

- For material income or expense items, the nature and the amount should be separately disclosed. Examples include inventory or property, plant and equipment write-downs, restructuring costs, disposals of property, plant and equipment or investments, discontinued operations or litigation settlements.

- The equity method refers to the situation in which an investing company has significant influence over, but not control of, an investee company (an investee company is called an associate company of the investor). Using the equity method, the investing company includes, in its income statement, its share of earnings of the investee company, because it is in a position to significantly influence that company's performance.
- Outside equity interests in net profit is a deduction from profit. It is an amount reflecting the share of profit, earned by consolidated companies, that is attributed to owners other than the parent company. For example, if CSR owns 80 per cent of a company, 100 per cent of the income and expenses are included in the consolidated figures, but 20 per cent of that company's net profit is deducted as an outside equity interest, so that consolidated net profit only includes CSR's 80 per cent share.

As an illustrative example, we have in Exhibit 15.1 the 2021 income statement for Qantas (numbers refer to the numbers at the left side of the financial statement):

- The statement is labelled 'Consolidated Income Statement'.
- Qantas figures are in millions.
- Qantas shows revenue and other income (\$5934 million). It divides up the revenue on the face of the income statement. Some other companies do it in the notes.
- It refers to 'share of net loss of investments accounted for under the equity method', of \$129 million.
- Qantas shows a loss before interest and tax (EBIT) (\$2050 million). It is referred to as statutory loss before income tax expense and net finance costs. Compare this 2021 figure with the 2020 statutory profit before income tax expense and net finance costs of \$2437 million. The significant external event impacting Qantas in this intervening period is the COVID-19 pandemic. Qantas provides details of its expenses on the face of the report. The three biggest expenses are: manpower and staff related (\$1970 million), depreciation and amortisation (\$1929 million) and aircraft operating variable (\$1555 million).
- Qantas adds on finance income (interest revenue) and deducts finance costs (mainly interest expense) to obtain net finance costs (\$301 million) and then statutory loss before income tax (\$2351 million).
- The net profit figure is sometimes described as the 'bottom line'; Qantas made a loss of \$1728 million.

EXHIBIT 15.1**QANTAS GROUP****1 CONSOLIDATED INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2021**

2	Note	2021 \$m	2020 \$m
REVENUE AND OTHER INCOME			
Net passenger revenue		3 766	12 183
Net freight revenue		1 316	1 045
Other revenue and income	4(B)	<u>852</u>	<u>1 029</u>
3 Revenue and other income		<u>5 934</u>	<u>14 257</u>
EXPENDITURE			
Manpower and staff-related		1 970	3 646
Aircraft operating variable		1 555	3 520
Fuel		835	2 895
Depreciation and amortisation	5	1 929	2 045

2	Note	2021 \$m	2020 \$m
4 Share of net loss of investments accounted for under the equity method	14	129	53
Impairment of assets and related costs	25	270	1 456
De-designation of fuel and foreign exchange hedges	27(C)	(33)	571
Redundancies and related costs		297	565
Net gain on disposal of assets	6	(26)	(7)
Other	7	1 058	1 950
Expenditure		7 984	16 694
5 Statutory loss before income tax expense and net finance costs		(2 050)	(2 437)
6 Finance income	8	20	33
6 Finance costs	8	(321)	(304)
6 Net finance costs	8	(301)	(271)
6 Statutory loss before income tax expense		(2 351)	(2 708)
Income tax benefit	9	623	744
7 Statutory loss for the year		(1 728)	(1 964)
Attributable to:			
Members of Qantas		(1 728)	(1 964)
Non-controlling interests		-	-
Statutory loss for the year		(1 728)	(1 964)

Qantas Annual Report 2021, p. 66. © Qantas Airways Limited.

Accounting standards require that companies present an analysis of expenses using a classification based on either the nature of the expenses or their function within the entity – whichever provides information that is reliable and more relevant to the decision-making needs of users. The choice is likely to depend on historical and industry factors as well as the nature of the business.

AASB 101 paragraphs 102–103 explain the alternative presentation formats as follows:

The first form of analysis is the ‘nature of expense’ method. An entity aggregates expenses within profit or loss according to their nature (for example, depreciation, purchases of materials, transport costs, employee benefits and advertising costs), and does not reallocate them among functions within the entity. This method may be simple to apply because no allocations of expenses to functional classifications are necessary. An example of a classification using the nature of expense method is as follows:

Revenue	X
Other income	X
Changes in inventories of finished goods and work in progress	X
Raw materials and consumables used	X
Employee benefits expense	X
Depreciation and amortisation expense	X
Other expenses	X
Total expenses	(X)
Profit before tax	X

The second form of analysis is the 'function of expense' or 'cost of sales' method and classifies expenses according to their function as part of cost of sales or, for example, the costs of distribution or administrative activities. At a minimum, an entity discloses its cost of sales under this method separately from other expenses. This method can provide more relevant information to users than the classification of expenses by nature, but allocating costs to functions may require arbitrary allocations and involve considerable judgement. An example of a classification using the function of expense method is as follows

Revenue	X
Cost of sales	(X)
Gross profit	X
Other income	X
Distribution costs	(X)
Administrative expenses	(X)
Other expenses	(X)
Profit before tax	X

Australian Accounting Standards Board (©) Commonwealth of Australia (2015).

One way to think of the difference between the two methods of presentation of expenses is as follows. In the nature of expense method all depreciation costs and employee costs are grouped together under headings of 'depreciation' and 'employee costs', but in the function method instead of showing these in one figure they would be split across functions: depreciation and employee benefits would be included in cost of sales (depreciation of factory equipment; factory wages); in distribution costs (depreciation of delivery vans; salaries of delivery drivers) and in administrative costs (depreciation of office computers and administrative wages).

15.10 Statement of changes in equity

In addition to the balance sheet, the statement of profit or loss and other comprehensive income, the statement of cash flows and the notes to the financial statements, there is now a requirement for a statement of changes in equity. While most items of income and expense are included in an income statement, AASB 101 (paragraph 88) requires an entity to 'recognise all items of income and expense in a period in profit or loss unless an Australian Accounting Standard requires or permits otherwise'.

Situations where items outside the current period may be included are fairly rare and include correction of errors and the effect of changes in accounting policies. Other Australian Accounting Standards require some gains and losses (such as revaluation increases and decreases, particular foreign exchange differences, gains or losses on remeasuring available-for-sale financial assets, and related amounts of current tax and deferred tax) to be recognised directly as changes in equity. Because it is important to consider all items of income and expense in assessing changes in an entity's financial position between two reporting dates, this Standard requires the presentation of a statement of changes in equity that highlights an entity's total income and expenses, including those that are recognised directly in equity.

While the gains and losses discussed are beyond the scope of this book (except asset revaluations, which were discussed in Chapter 13), you will see these statements of changes in equity in annual reports; therefore, it is useful to know what they are trying to achieve. The idea is that the statement of changes in equity is to provide a full picture of all income and expense items, regardless of whether they were included in the income statement or recognised direct to equity.

LO12

While the material discussed is quite complex, one important issue that is far more straightforward is the change in retained earnings (retained profits) for the period. You will recall from earlier discussions in this book (Chapter 2) that retained profits represent profits earned by the entity over its life that have not been distributed as dividends.

Therefore, for each entity there will be a note (or part of the statement of changes in equity) showing, for retained earnings:

Balance at the start of the period	X
+/- changes in accounting policy or correction of errors	X
Restated balance	X
Profit/(Loss) for the period	X
Other comprehensive income	X
Total comprehensive income for the period	X
Less dividends	X
Balance at the end of the period	X

15.11 'What if' (effects) analysis

LO13 Suppose you are a financial analyst trying to determine what a recently released set of financial statements tells you about a company's performance. You can do various standard analyses (as previously described in Chapter 7), but before you do that you find that the company's accounting isn't quite comparable to that of another company you want to compare it to, or that the company has used an accounting method you don't agree with. You therefore want to alter the numbers to show a 'what if' scenario if the company used the other company's accounting method, or a method you do agree with.

Or perhaps you are the managing director of a company, and you are assessing some alternative accounting methods to determine which would be the most appropriate for the company. You know that there are restrictions on the company's debt-to-equity ratio that have been imposed by a major lender, and that there are expectations of the year's net profit resulting from a forecast you made during a speech earlier in the year. You also know that various financial analysts examine your company's performance quite closely and that, if that performance declines, your bonus and even your job could be in jeopardy. You therefore want to know what the effects on the company's financial statements would be if the company adopted each alternative accounting method.

Such questions are very common in business. Answering them requires analysis of the accounting information: we'll call this 'what if' (effects) analysis. The ability to analyse accounting information to tell managers, bankers and others what difference various accounting choices, or business events in general, would make to the financial statements is very important to accountants. If you are going to be an accountant, you have to develop this skill. If you are not going to be an accountant, you should have some idea of what the accountants are doing in such analyses, so that you can evaluate the results they give you. You may even want to do some basic analysis yourself. Computer spreadsheets are particularly good for this sort of analysis, but you have to know what to tell the spreadsheet to do.

Examples of 'what if' (effects) analysis

A good way to think about what would result if one method were used instead of another, or if one event happened instead of another, is to figure out the accounting numbers both ways and compare them. There are shortcuts to this, and if you see one, go ahead and use it! But for now, let's take the longer (and hopefully clearer) way.

EXAMPLE A: REVENUErecognition, OVER TIME OR AT A POINT IN TIME

In section 15.7, you saw the example of Greenway Construction, which uses the input method percentage of completion to recognise over time its construction revenues and expenses. Suppose the company's banker, who was more familiar with revenue recognition at point in time, in this case on completion of the contract, wanted to know what difference there would be to profit if revenue was recognised at a point in time instead.

The percentage of completion project profit (totalling \$600 000 over three years) was:

- \$120 000 for year 1
- \$270 000 for year 2
- \$210 000 for year 3.

If revenue and expenses were recognised only at a point in time, being the completion of the project, the project profit would be:

- \$0 in year 1
- \$0 in year 2
- \$600 000 in year 3.

So the answer to the banker's question would be that profit would be:

- \$120 000 *lower* in year 1
- \$270 000 *lower* in year 2
- \$390 000 *higher* in year 3.

There has been no change in the three-year total, but the yearly figures are rearranged if the completion of production method is used. Assume the customer has control of the project asset throughout the construction.

EXAMPLES OF INCOME TAX EFFECTS IN THIS ANALYSIS

Suppose Greenway Construction pays income tax at a rate of 30 per cent. What effect would that have on the figures shown? The answer is that the income tax reduces all the effects by the tax rate, because that proportion goes to the government. As you'll see, a useful rule is to just multiply the before-tax effect by $(1 - \text{tax rate})$, in this case $(1 - 0.30) = 0.70$.

Here is a table of the effects, before and after income tax (for presentation purposes, Greenway's figures are in thousands of dollars):

Year	Greenway		
	Gross effect	Tax effect	After-tax effect
	100%	30%	70%
1	(120 000)	(36 000)	(84 000)
2	(270 000)	(81 000)	(189 000)
3	390 000	117 000	273 000
Total	0	0	0

Income tax reduces both positive and negative differences. The assumption here is that an increased profit is taxed, and a decreased profit produces tax savings (by reducing tax payable on other profit or creating tax credits that can be used to get refunds on past years' taxes or reduce future taxes).

Without knowing the details of the income tax law (which are beyond the scope of this book), we cannot say for sure how much of the income tax effect is current and how much is deferred.

EXAMPLE B: NET OF TAX ANALYSIS

Revenues and expenses can be considered to increase or decrease income taxes on their own, and therefore the effects on net profit of changes in revenues and expenses can be estimated directly, net of tax, once the income tax rate is known (or approximated). Here's how it works. Suppose Alcatraz Fencing Ltd has one revenue, one expense and an income tax rate of 30 per cent. Its income statement might look like this:

	\$000
Revenue	1 000
Expense	<u>700</u>
Profit before income tax	300
Income tax expense (30%)	<u>90</u>
Net profit after tax	<u>210</u>

Note that the net profit after tax (usually referred to as 'net profit') is 70 per cent of the profit before tax. We can state this in a formula, as shown:

$$\text{Net profit} = (1 - \text{tax rate}) \times \text{Profit before income tax}$$

You can look at net profit as the residual after the income tax has been deducted. But this works just as well for the revenues and expenses. Suppose we recast the income statement as if the revenues and expenses were taxed directly, so that they are shown net of tax, and the income tax effect is, therefore, included in them rather than being a separate expense:

	Original \$000	Net of tax \$000
Revenue (net = \$1000 × (1 – 0.30))	1 000	700
Expense (net = \$700 × (1 – 0.30))	<u>700</u>	<u>490</u>
Profit before income tax	300	
Income tax expense (30%)	<u>90</u>	
Net profit	<u>210</u>	<u>210</u>

The net-of-tax way of looking at things can be very useful analytically. Suppose the general manager of Alcatraz Fencing has a plan to increase revenue by \$200 000 without any increase in the \$700 000 expense. What would that do to net profit? The new net profit would be higher by $\$200\ 000 \times (1 - 0.30) = \$140\ 000$, and so would be \$350 000 (\$210 000 + \$140 000). There is no need to recalculate the whole income statement.

If you are doubtful, you can always do the analysis the longer way, by recalculating the income statement:

	\$000
New revenue	1 200
Expense	<u>700</u>
New profit before tax	500
New tax expense (30%)	<u>150</u>
New net profit	<u>350</u>

Net-of-tax analysis got us to this answer more quickly by focusing just on what changes.



HOW'S YOUR UNDERSTANDING?

15F A company had revenues of \$10 499.7 million in a recent year. Its income tax rate was 30 per cent. If its revenues increased by 2 per cent, with no effect on expenses other than income tax, what would be the effect on net profit for that year?

15G Hinton Ltd has found an error in its sales revenue account: an invoice for \$1400 was recorded as revenue in 2021 when it should have been recorded in 2022. The company's income tax rate is 30 per cent and there was no corresponding error in cost of goods sold. What is the effect of the error on:

- (i) 2021 net profit
- (ii) 2021 cash from operations
- (iii) 2021 net profit
- (iv) retained profits at the end of 2021
- (v) retained profits at the end of 2022?

15.12 Managers, investments and shareholders' equity and the recognition of revenues and expenses

In earlier chapters, we emphasised the importance of the financial position of a company. Items such as total assets, total liabilities and total shareholders' equity form the basis of performance measures that can be used to evaluate the company and its managers. Many of these indicators, such as return on total assets and the ratio of debt to equity, have been mentioned previously, and are covered in detail in Chapter 7. Therefore, it is important that managers understand how decisions they make affect some balance sheet items such as investments and shareholders' equity.

**LO8
LO14**

When purchasing shares, investment managers need to be aware that the percentage of shares they buy will affect the influence or control they have over the investment, which in turn affects how these investments are accounted for in the financial statements. Decisions on dividends, bonus issues and so on will affect the closing balance sheet. An understanding of the nature of retained profits and the various reserve accounts is important in determining the level of dividends that can be paid or the amount of a bonus issue.

Each end of financial year, the profit or loss is transferred to retained profits and thus the profitability of the company is reflected in the shareholders' equity section of the balance sheet. Profit determination is of vital interest to both shareholders and managers, as it is a key component in their performance evaluation. As profit depends on revenue recognition and expense recognition, an understanding of these concepts is important when various decision alternatives are being considered by management.

Revenue and expense recognition also require many different judgements by managers. For example, assume a company is involved in long-term contracts and recognises revenues over time. Two examples of judgements that need to be made by management are: (a) how to calculate the percentage of completion for each year; and (b) at what point can the outcome of the contract be reliably estimated. With respect to the first point, managers must decide whether to use such methods as physical estimates (e.g. percentage of kilometres completed on the construction of a 200-km highway), or the proportion of costs incurred to date compared to the estimated total costs. While the outcome of a contract is never certain until it is completed, the percentage of completion method allows managers to recognise profit earlier, provided the outcome is reliably estimated.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Retained profits

The following transactions occurred in the 2022 financial year. The opening balance of retained profits was \$20 000.

- a Shares were issued (4000 at \$4 each).
- b \$2500 worth of inventory was purchased on credit and has not yet been sold.
- c The company made a net loss for the period of \$4250.
- d The company moved \$550 from the general reserve to retained profits.
- e Dividends of \$5000 were declared and paid.

Required:

- 1 What is the closing balance of retained profits?
- 2 How much did total shareholders' equity increase during the year?

PRACTICE PROBLEM B

Revenue recognition

Discuss when the following organisations are likely to recognise revenue.

- 1 CPA Australia for membership fees.
- 2 UNSW for student tuition fees.
- 3 The Melbourne Cricket Ground membership fees.
- 4 An advertising company that produces and arranges for the airing of an advertisement on TV.
- 5 A retailer of photocopying machines to universities. The cost includes free servicing for two years.
- 6 A golf manufacturer that provides golf equipment to golf courses for sale. The golf course holds them for six months to try to sell them and if not returns them to the golf manufacturer. The golf courses are not invoiced by the manufacturer until they sell the golf clubs.

PRACTICE PROBLEM C

Expense recognition

Indicate if each of the events described gives rise to a revenue or an expense under the Framework. If they do, what would be the other side of the transaction?

- 1 A bank loan of \$30 000 is obtained, with the company signing an agreement to repay the amount in six months, together with interest of 6 per cent.
- 2 Electricity used in the past month, worth \$1540, has not been paid for.
- 3 A \$3000 cheque is received from a tenant for three months' rent in advance.
- 4 A company signs a two-year employment contract with a marketing manager for \$250 000 per year. The marketing manager will start work next month.
- 5 Wages of \$34 000 are owing to employees at year-end for work done during the year.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 List three examples of reserves.
- 2 A company decides to split its existing shares in half (i.e. replace each existing share with two shares). What impact will it have on the balance sheet?
- 3 What is the difference between liabilities and equity?
- 4 Explain the conditions that must be met before a final cash dividend may be paid to the ordinary shareholders of a company.
- 5 Explain how the following benefit from the issue of share dividends (bonus shares):
 - a existing shareholders
 - b future shareholders
 - c the company.
- 6 Why does a subsidiary have to be consolidated with the parent's accounts?
- 7 Since it is the sum of more than one company, won't a consolidated balance sheet present a stronger financial picture than the parent's unconsolidated balance sheet does?
- 8 What does goodwill on consolidation on the consolidated balance sheet mean?
- 9 What purpose is served by transferring amounts from retained profits to reserves, when the amounts may be transferred back if the directors so decide?
- 10 Explain the accounting differences between a bonus issue (share dividend) and a share split.
- 11 Consider a business that sells goods on credit and generally receives cash about 30 days later. Is revenue recognition at point of sale or when cash is received likely to be more relevant to users?
- 12 What criteria are used to recognise revenue?
- 13 Compare revenue recognition associated with a contract with a customer over time (input method) to recognition at the completion of the contract.
- 14 What conditions need to be met before income/revenue can be recognised?
- 15 What conditions need to be met before expenses can be recognised?
- 16 An income statement shows profit and loss for the period and total changes in equity other than those resulting from transactions with owners as owners. Provide three examples of these changes in equity.
- 17 You are told by a friend who builds house extensions that he estimates the profit on a job at the time of quoting, and recognises 10 per cent of profit each week based on the fact that most jobs take 10 weeks. Do you agree with his approach?
- 18 Explain why revenue is sometimes recognised at the point of sale. When would it be appropriate to recognise revenue at the time of production?
- 19 Describe the matching principle. How is it dealt with in the Framework?
- 20 Would a large write-down of inventory that has become obsolete be included as an expense? Why or why not?
- 21 What is the main benefit of providing separate disclosure of significant items?

PROBLEMS

PROBLEM 15.1

Issue of shares

The following transactions relate to the issue of shares by Zincdale Ltd.

Date	Transaction
2022	
1 July	The public was invited to make an application for 500 000 shares at \$1.00 each, 30c per share being payable on application.
28 July	Applications were received for 580 000 shares.
15 Aug	The directors allotted 500 000 shares and the successful applicants were advised that 15c per share was due on allotment.
31 Aug	The balance due on allotment was received.
1 Sept	A first call of 40c per share was made.
30 Sept	\$194 000 was received with respect to the first call.

Record the above transactions described in the appropriate journals, and prepare a note to the accounts showing the capital structure at 30 September 2022.

PROBLEM 15.2

Oversubscriptions

- 1 Prepare journal entries for each of the following transactions:
 - a XYZ Ltd issues 200 000 shares to an institutional investor on 10 October 2022 for \$2.90 a share.
 - b In September 2022, ABC Ltd issued a prospectus offering 500 000 shares at \$3.00 per share, all payable at the time of application. On 15 October, \$1 800 000 had been received, and the directors allotted the 500 000 shares to subscribers in proportion to their applications and refunded the balance of the application monies.
 - c Assume that in part (b) \$2.00 was payable on application, \$0.50 on allotment and \$0.50 on call, and there was no oversubscription.
- 2 Prepare the shareholders' equity section of the balance sheet for ABC Ltd after the transactions in question 1, part (c) have occurred, assuming that retained profits were \$100 000 and that there were no other reserves.

PROBLEM 15.3

Shareholders' equity

The shareholders' equity section of Journal Limited is reproduced as shown.

	2022	2021
	\$	\$
Share capital	1 400 000	1 300 000
Reserves	150 000	200 000
Retained profits	<u>250 000</u>	<u>350 000</u>
Total shareholders' equity	1 800 000	1 850 000

- 1 Provide two plausible reasons for the reduction in retained profits between 2021 and 2022.
- 2 List three examples of what could be included in reserves.
- 3 Give possible reasons for the change in share capital.
- 4 The manager of Journal Limited is contemplating a bonus issue. What impact would a bonus issue (\$100 000) have on total shareholders' equity?

PROBLEM 15.4

Shareholders' equity

The shareholders' equity section of the balance sheet of Locomotion Limited is reproduced as follows.

	Note	Consolidated		Parent	
		2022 \$	2021 \$	2022 \$	2021 \$
Share capital	23	314	298	314	298
Reserves	24	206	194	175	182
Retained profits		391	342	103	95
Non-controlling interests	25	<u>13</u>	<u>12</u>	<u>—</u>	<u>—</u>
		<u>924</u>	<u>846</u>	<u>592</u>	<u>575</u>

- 1 Briefly describe what information would be contained in note 23.
- 2 What is the difference between the parent and consolidated columns?
- 3 Apart from the general reserve, list two other common reserves that might be shown in note 24.
- 4 What might have caused the movement in retained profits from 2021 to 2022?
- 5 What are non-controlling interests? Why might they have increased?

PROBLEM 15.5

Share buyback

The CFO of X Limited is concerned that the new investment opportunities available to the firm provide a lower average return than other investments they presently hold. She is considering the possibility of a share buyback.

- 1 What is meant by a share buyback?
- 2 Why do companies buy back their own shares?
- 3 What factors would impact the timing of the buyback?
- 4 What balance sheet accounts would be affected by the buyback?
- 5 Is profit or earnings per share affected by the share buyback?

PROBLEM 15.6

Explain the nature of certain reserves

The note on reserves is provided. Explain the nature of each of the reserves.

	Consolidated	
	2022 \$000	2021 \$000
Capital		
Balance at start of year	26 874	26 494
Transfer from retained profits	<u>—</u>	<u>380</u>
Balance at end of year	<u>26 874</u>	<u>26 874</u>
General		
Balance at start and end of year	<u>13 337</u>	<u>13 337</u>
Revaluation surplus		
Balance at start of year	31 188	31 704
Increase (decrease) arising from revaluation of freehold land and buildings and investments	<u>—</u>	<u>(516)</u>
Balance at end of year	<u>31 188</u>	<u>31 188</u>

<<

Foreign currency translation

Balance at start of year	6 575	2 825
Translation adjustment on controlled foreign entities' financial statements	(1 197)	3 750
Balance at end of year	<u>5 378</u>	<u>6 575</u>

PROBLEM 15.7*Issue of shares, bonus issues and revaluations*

The abridged balance sheet of Impact Ltd, at 30 June 2022, was as follows:

IMPACT LTD
BALANCE SHEET AS AT 30 JUNE 2022

	\$	\$	
Inventories	10 000	Trade creditors	60 000
Trade debtors	20 000	Accrued expenses	40 000
Equipment	100 000	Share capital (shares of \$1)	200 000
Freehold premises	<u>270 000</u>	Retained profits	<u>100 000</u>
	<u>400 000</u>		<u>400 000</u>

Fifty thousand shares were issued to the public at \$1.50 per share, with the full amount of \$1.50 per share being payable on application. Applications were received for 80 000 shares, and a refund was made to the unsuccessful applicants.

The freehold premises were revalued at \$350 000. The directors resolved to make a bonus issue of one fully paid share at a value of \$1.50 for every five shares held (including the 50 000 recently issued). For this purpose, it was decided that the full credit balances in the revaluation surplus accounts would be used, along with a portion of the retained profits account.

Assuming that no other transactions took place, record the transactions in the journal, post to the ledger and prepare the balance sheet.

PROBLEM 15.8*Prepare financial statements*

On 30 June 2022, the following figures were extracted from the general ledger of Nora Ltd.

	DR \$	CR \$
Share capital		156 000
Retained profits		20 000
Mortgage		27 000
Plant	180 000	
Cash	26 100	
Goodwill	15 000	
Accounts receivable	7 400	
Accounts payable		5 200
Prepayments	620	
Accrued expenses		470
		>>

<<		
	Accumulated depreciation	55 000
	Inventory	84 450
	Government bonds	10 000
		17 900
	General reserve	
	Land	100 000
	Profit before tax	<u>142 000</u>
		423 570
		<u>423 570</u>

Additional information:

On 30 June 2022, the directors of Nora Ltd resolved to:

- a provide for estimated tax liability, \$65 000
- b transfer \$2100 to general reserve
- c paid a dividend at the rate of 3 per cent on share capital.

Required:

- 1 Prepare an income statement and a note of retained profits for the year ended 30 June 2022.
- 2 Prepare a balance sheet as at 30 June 2022.

PROBLEM 15.9

Revenue recognition

Discuss when each of the following businesses would be likely to recognise revenues:

- 1 A shipbuilding company.
- 2 A magazine company for which yearly subscriptions are received yearly in advance and where the magazines are posted each month.
- 3 A coal-mining company that has a long-term contract to supply a local company at a fixed price.
- 4 A printer.
- 5 An installer of hot-water systems.
- 6 A telecommunications company that provides local and interstate calls.
- 7 An airline.
- 8 A real estate developer who constructs 'speculative' houses and later sells them.
- 9 An engineering business that receives orders for special-purpose machinery accompanied by deposits.
- 10 A meat pie stand at a football ground.

PROBLEM 15.10

Revenue recognition

State whether each of the following would be recognised as revenue under the Framework.

- 1 Issue of shares for \$4 million.
- 2 Cash sales by a retailer of \$130 000.
- 3 Credit sales of \$360 000 by a manufacturer of refrigerators.
- 4 Sold equipment to a company for \$400 000. The equipment has been delivered.
- 5 Received an order for custom-designed invitations. Agreed to complete in two weeks. Received \$900 deposit with remaining \$400 to be paid on delivery.
- 6 A company receives a year's rent in advance. The tenant cannot withdraw from the contract.

PROBLEM 15.11

Expense recognition

For each of the following expenses, state what the other side of the journal entry would be. If it is not an expense, write 'no expense'.

- 1 Insurance expense (amount paid last year).
- 2 Wages (to be paid next period).
- 3 Advertising that appeared on TV last week and the invoice to be paid next month.
- 4 Dividend proposed and paid.
- 5 Supplies (recorded as asset supplies) used up during the period.
- 6 Depreciation.

PROBLEM 15.12

Revenue and expense recognition

Knowledge Ltd provides one-day training programs on accounting. It charges \$5000 per day. The following events occurred during May 2019.

- a Received \$20 000 from accounts receivable for sales in previous months.
- b Paid three months' rent of \$9000 that covers the period 1 May 2019 to 31 July 2019.
- c Received orders for 70 days of training during the month. Delivered 50 of the days of training during the month and received payment for 30 of these days.
- d Signed a contract to design a special program for lawyers at a price of \$20 000. Design will commence in July. Received a \$5000 deposit.
- e Paid \$400 000 for new equipment and \$20 000 to install it.
- f A contract was signed with a new CEO for \$700 000 per year. The CEO will start on 1 July.
- g Paid wages during the period of \$60 000 with accrued wages of \$5000 owing at the end of the month.
- h Borrowed \$12 000 on 1 May from the bank at 10 per cent per annum. Interest and principal repayable in three months.

Required:

- 1 Determine total revenue for the month of May 2019.
- 2 List all expenses for the month of May 2019.

PROBLEM 15.13

Likely revenue recognition policies for various cases

When is a sale a sale? When does the accounting system recognise revenue as having been earned? Indicate what you think would be the revenue recognition policy in each of the following cases. Remember to think about: (a) whether the general criteria for revenue recognition have been met; (b) the concept of a 'critical event' for revenues recognised all at once; and (c) the proportionate recognition that is available for revenue earned over several accounting periods:

- 1 coffee shop sales of coffee
- 2 sales of housing subdivisions
- 3 sales of natural gas to businesses and residences
- 4 magazine subscription sales
- 5 ticket sales for concerts
- 6 revenue from sales of pottery on consignment through local craft shops
- 7 a TV station's revenue from advertising during sports programs
- 8 revenues from sales of manufactured plumbing products
- 9 computer store sales of software
- 10 department store revenue from clothing sales (some people pay cash; some use their store credit cards; some use other credit cards; and some return their purchases after deciding they don't like them)
- 11 a gardener's revenues from contract landscaping work for home owners.

PROBLEM 15.14

Real company's revenue, expense recognition

Using the financial statements of any company you are interested in, write a comprehensive review of the company's revenue and expense recognition policies. Cover such points as:

- 1 What the nature of the company's business is and how it earns its revenue and incurs its expenses.
- 2 What the company's financial statements and notes disclose about its important revenue and expense recognition policies.

PROBLEM 15.15

Choose suitable revenue recognition policies

In each of the following independent cases, indicate when you think the company in question should recognise revenue. Support your decision with reference to the generally accepted criteria for revenue recognition.

- 1 Outback Gold mines and refines gold. To sell the gold, the company waits until it feels the market price is favourable. The company can, if it wishes, sell its entire inventory of gold at any time at the prevailing market price.
- 2 Crazy Freddie sells cheap furniture on an instalment plan. His customers take delivery of the furniture after making a down payment. Over the past year, Crazy Freddie has had to repossess over 50 per cent of the furniture sold, because of customers defaulting on payments.
- 3 Tom and Mark's Construction undertakes long-term construction contracts. The company only accepts contracts that will pay a fixed fee. Costs can be estimated with reasonable accuracy, and there has never been a problem collecting from customers.
- 4 Cecily Cedric is a toy manufacturer producing toys that are shipped to various retail customers upon receipt of their purchase orders. Sales are billed after shipment. The company estimates that approximately 2 per cent of credit sales prove to be uncollectable.

PROBLEM 15.16

Identify items as revenues or expenses

State whether or not, and why, each of the following items is likely to be a revenue or an expense for this year for the company indicated:

Company	Item	
1	Amcor	Cost of advertising for new employees
2	National Australia Bank	Cost of renovating its main Perth branch
3	Woolworths	Increased value of the land under certain department stores
4	Subway	Food sold to customers who paid with their Visa cards
5	Harvey Norman	Money paid by customers in advance on special furniture orders
6	Ford Motor Co.	Income taxes paid in the United States
7	BHP	Special good-performance bonuses promised this year but not to be paid until next year
8	BHP	Special dividend to owners, all of whom are also employees
9	Amcor	Cost of scientific research aimed at developing new products
10	Rio Tinto	Estimated amount of money needed to provide long service leave to this year's employees to be paid in the future
11	Coles	Goods lost to shoplifting
12	Coles	Salary of a floorwalker who tries to catch shoplifters

PROBLEM 15.17

Expense recognition

Indicate whether each of the events described gives rise to an expense under the Framework. If the event does give rise to an expense, what would be the other side of the transaction?

- 1 A temporary excess of cash is used to purchase \$40 000 of shares in BHP.
- 2 \$10 000 is paid as a deposit on custom-designed equipment, to be completed and delivered next year. The total purchase price of this equipment will be \$50 000.
- 3 A supplier sends notice that \$1000 of raw materials have been shipped by freight, with payment due in 30 days. The buyer obtains title to the goods as soon as they are shipped by the seller.
- 4 A customer places an order for \$800 worth of goods.
- 5 A production manager has been hired to oversee the company's operations, with employment commencing next month. One-twelfth of the annual salary of \$108 000 is to be paid at the end of each month worked.
- 6 Inventory is acquired at a list price of \$1500, with payment made in time to secure a 2 per cent discount for prompt settlement. Cash discounts are treated as a reduction in the acquisition cost of the inventory.

PROBLEM 15.18

Recommend revenue and expense recognition policy

Gary Slapstick Promotions Ltd (GSP) acquired the rights to use the names of a number of football players on life-sized stuffed dolls it purchases from a toy manufacturer. The dolls are marketed through mail-order advertisements in the TV-listings inserts of large newspapers. When an order is received (with a money order, cheque or credit card number), GSP contacts the toy manufacturer. The toy manufacturer is responsible for manufacturing and shipping the doll to the lucky boy or girl. GSP is notified at the time of shipment. The customer has the option of returning the doll within two weeks of the day it is received. GSP pays the toy manufacturer within 30 days of delivery. Response to the dolls this Christmas has been overwhelming. In fact, the toy manufacturer is working extra shifts to try and keep up with the demand.

- 1 Identify three points in time at which GSP could recognise revenue on the dolls. Which would you recommend? Why?
- 2 Identify two different points in time at which the toy manufacturer could recognise revenue on the dolls.
- 3 Discuss how GSP should account for its payments to football players for the right to use their names. (Assume that each player is paid a lump sum initially and a royalty on each doll sold that uses his name.)

PROBLEM 15.19

Effects analysis: expensing versus capitalising, plus tax

The controller of Squibble Ltd is having some disagreements with senior management about some company accounting policies. Squibble, in business for only a year, has capitalised \$67 000 in development costs. The controller argues that such costs should be expensed instead. Assume that this accounting policy affects current income tax liability and that the company's income tax rate is 30 per cent. What would the controller's proposal do to:

- 1 the current year's net profit?
- 2 the current year's cash flow?

PROBLEM 15.20

Franchise revenue amounts and policies

Pickin' Chicken Ltd and Country Delight Ltd both sell franchises for their chicken restaurants. The purchaser of the franchise (the franchisee) receives the right to use Pickin' Chicken's or Country Delight's products and benefit from national training and advertising programs for 10 years. The buyers agree to pay \$50 000 for a

franchise. Of this amount, \$20 000 is paid upon signing the agreement and the remainder is payable in five equal annual instalments of \$6000 each.

Pickin' Chicken recognises all franchise revenue when franchise agreements are signed. Country Delight recognises franchise revenue as cash is received. In 2015, the companies each sold eight franchises. In 2017, they each sold five. In 2021 and 2022, neither company sold a franchise.

- 1 Determine the amount of franchise revenue recognised by each company in 2015, 2017, 2021 and 2022.
- 2 Do you think that revenue should be recognised when the franchise agreement is signed, when cash is received, or over the life of the franchise agreement? Why? Fully support your answer.

PROBLEM 15.21

Company transactions

The following transactions occurred for Andrew Ltd for the year ended 30 June 2022:

- a Income tax expense for the current period was determined at year-end.
- b Ordinary dividends declared are paid.
- c One shareholder sold its shares in Andrew Ltd to another company. The shares were sold at a loss.
- d A fire destroyed most of Andrew's inventory. The inventory was uninsured.
- e The price of shares in Andrew Ltd fell.
- f Accounts payable were paid.
- g Andrew Ltd provided for future warranty claims.
- h Depreciation was charged on a building.
- i A provision was created for obsolete stock.
- j Internally generated goodwill declined throughout the year.
- k Andrew Ltd may be liable for damages incurred by a consumer using one of its products. It is likely that some payment will be required. The amount is dependent upon the outcome of a court case.
- l A bad debt was written off. No amount had been provided in previous years.

Required:

Which of the transactions shown would result in an expense for the year?

PROBLEM 15.22

Interpret revenue recognition notes

BHP is the world's largest diversified resources company. Its core operations involve production of aluminium, copper, zinc, iron ore, diamonds, oil and gas.

Read the following excerpt from the 2021 annual report of BHP.

Recognition and measurement

The Group generates revenue from the production and sale of commodities. Revenue is recognised when or as control of the promised goods or services passes to the customer. In most instances, control passes when the goods are delivered to a destination specified by the customer, typically on board the customer's appointed vessel. Revenue from the provision of services is recognised over time, but does not represent a significant proportion of total revenue and is aggregated with the respective asset and product revenue for disclosure purposes. The amount of revenue recognised reflects the consideration to which the Group expects to be entitled in exchange for the goods or services.

BHP, Annual Report 2021, p. 139
(https://www.bhp.com/-/media/documents/investors/annual-reports/2021/210914_bhpannualreport2021.pdf)

Explain when BHP recognises revenue in terms that your fellow students will understand.

PROBLEM 15.23

Recognition of revenue over time versus at a point in time

Multi-Storey Builders Ltd had a large three-year project with a fixed price contract for a total revenue of \$8 000 000 and estimated total costs of \$6 500 000. The project was 20 per cent complete at the end of the first year, 70 per cent complete at the end of the second year, and 100 per cent complete at the end of the third year. Revenues and costs were as estimated. The company uses cost (an input measure) in order to determine the progress towards completing their performance obligation under the contract. The asset being constructed is under the control of the customer throughout the project period.

- 1 What profit was earned during the first year if cost (an input measure) was used as the method for revenue to be recognised over time?
- 2 What profit was earned during the second year if cost (an input measure) was used as the method for revenue to be recognised over time?
- 3 What profit was earned during the third year if cost (an input measure) was used as the method for revenue to be recognised over time?
- 4 What profit was earned during the second year if revenue was recognise at the point in time of project completion?

PROBLEM 15.24

Revenue recognition over time

Tall Constructions Ltd had a large three-year project with a fixed price contract for a total revenue of \$5 500 000 and estimated total costs of \$4 500 000. The project was 30 per cent complete at the end of the first year, 65 per cent complete at the end of the second year, and 100 per cent complete at the end of the third year. Revenues and costs were as estimated. Tall Constructions Ltd uses cost (an input measure) in order to determine the progress towards completing their performance obligation under the contract. The asset being constructed is under the control of the customer throughout the project period.

- 1 What profit was earned during the first year if cost (an input measure) was used as the method for revenue to be recognised over time?
- 2 What profit was earned during the second year if cost (an input measure) was used as the method for revenue to be recognised over time?

PROBLEM 15.25

Effects of proposed policy of capitalising improvements costs, with income tax

Senior management of Telemark Skiing Ltd wishes to capitalise \$2 650 000 in ski-hill improvement costs expended this year, and amortise the capitalised costs over 10 years, rather than just expensing them all as is now done. The company's income tax rate is 30 per cent, and the company would plan to continue deducting the costs as expenses in computing income tax payable for this year, assuming the tax authorities would permit that. What would be the effect on this year's net profit?

CASES

CASE 15A

Woolworths Limited

Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 How many shares were issued during the year?
- 2 Were there any transfers between general reserves and retained profits during the year?

CASE 15B**Shareholders' equity and liabilities**

The shareholders' equity section of CSR Limited's 2021 balance sheet is shown below.

	Note	CSR Group	
		2021 \$m	2020 \$m
Net assets		<u>1 152.5</u>	<u>1 125.5</u>
Equity			
Issued capital	18	966.7	966.7
Reserves	20	(89.6)	(45.7)
Retained profits		<u>241.7</u>	<u>144.0</u>
Equity attributable to shareholders of CSR Limited		1 118.8	1 065.0
Non-controlling interests	24	<u>33.7</u>	<u>60.5</u>
Total equity		1 152.5	1 125.5

CSR Limited, *Annual Report 2021*, p. 74.

- 1 At the beginning of the financial year in 2019 share capital (account is issued capital in the balance sheet) was \$1028.8 million, provide a reason for the change compared to the ending balance for 2020?
- 2 Explain what is meant by non-controlling interests.
- 3 Retained profits have decreased from \$241.7 million to 144.0 million. What items would be used to reconcile these two figures?

CASE 15C**Woolworths Limited**

Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 Which of the notes under significant accounting policies (note 1) deal with revenue and expense recognition?
- 2 Select three notes related to expense recognition and prepare an alternative policy for the recognition of the expense. Does your alternative increase or decrease profit for the year?
- 3 Find the dollar values for each of the following for 2021:
 - a total sales revenue
 - b cost of goods sold
 - c depreciation
 - d interest expense
 - e income tax expense
 - f net profit attributable to outside equity interests.
- 4 What is meant by profit attributable to non-controlling interests?
- 5 Why does comprehensive income (as reported on the statement of comprehensive income) differ from profit for the period (reported on the income statement)? Identify the major items which explain this difference.

CASE 15D Cricket, revenue recognition and expense recognition

The Sydney Cricket Ground Trust released the following offer:

Premium collectables Steve Waugh fine art limited edition print

Now you can own this magnificent piece of official ACB memorabilia – a limited edition fine art print of Australian cricket captain, Steve Waugh.

Renowned Australian sports artist Mark Sofilas has produced this fine art print of Steve Waugh to honour a great cricketing legend.

There are only 1500 of these limited edition prints, each one individually signed and numbered by Steve Waugh and Mark Sofilas, with a certificate of authenticity accompanying each print.

- Retail price (unframed): \$275 each (plus \$10 postage)
- Trust members' price: \$250 (plus \$10 postage)
- To order, complete the order form and return to the Trust
- Allow 30 days for delivery.

Source: Sydney Cricket Ground Trust.

- 1 Assume the Trust is the promoter of the limited edition prints (i.e. it receives all revenues and pays all costs). Describe the alternatives the Trust has in relation to when it recognises revenue. Which would you suggest?
- 2 How would your answer differ if the Trust included an offer that the prints could be returned within two months if the purchaser is not completely satisfied? The purchaser would receive a refund of \$200.
- 3 Assume the Trust is not the promoter but is a selling agent; that is, it sends out the brochures, collects the order forms, retains 20 per cent (\$55) per print and passes the order on to the promoter, which fills the order. Assume a no-refund policy. When should the Trust recognise revenue?
- 4 Does the accounting profession have the skills to provide the certificate of authenticity? Do you believe the Trust, or any other seller of collectables, is likely to see advantages in members of professional accounting bodies providing this certificate of authenticity?
- 5 A Trust member was sitting behind two accounting students at a recent match and heard them discussing cost of goods sold. He shows you the brochure, buys you a beer each and asks you what the COGS would be for the limited edition print.
- 6 Assume Steve Waugh receives a flat fee for signing the prints. When would the Trust recognise this expense?
- 7 Assume Steve Waugh gets paid a commission based on sales. When would the Trust recognise this expense?

HOW'S YOUR UNDERSTANDING SOLUTIONS

- 15A (i) -\$50 000 cash
(ii) Nil
(iii) Nil, dividends are a distribution of profits not an expense
(iv) -\$50 000 via retained profit

- 15B (i)** Over time using the input method percentage of completion method based on a physical criterion (e.g. percentage of floors completed) or a percentage of total costs incurred at this point in time.
- (ii) Likely at the point of sales where students hand over cash or more likely their credit card.
- (iii) It is likely to depend on the contract. For example, for a yearly membership, it may be 1/12 each month. If it is sold on say 10 visit passes, it could be at the time of each visit or more likely split across the year (lots of these passes are never used).
- (iv) Usually when the plane takes off as the airline has then provided the service.
- (v) While tickets are sold many months in advance of the event, it is likely that revenue is recognised on each of the 14 days of the event.
- 15C** \$11 210 ($38\% \times 29\ 500$); \$5130 ($[43\ 000 - 29\ 500] \times 38\%$)
- 15D (i)** 1 per cent of \$100 = \$1; that is, revenue only includes gross inflows received by the entity on its own behalf, not amounts collected on behalf of third parties.
- (ii) The revenue is \$100 and \$1 would be collection expenses. Note that this gives a profit of \$99. If the company only recorded \$99 as revenue and no expense, profit would be the same but note that it does impact various ratios (discussed in more detail in Chapter 7).
- 15E (i)** Yes, \$80 000 rent expired.
- (ii) No, this is a reduction in a liability and an asset.
- (iii) Yes, \$20 000 for inventory writedown expense.
- (iv) Yes, \$32 000 for doubtful debts expense.
- 15F** Revenue effect = $2\% \times \$10\ 499.7 = \210.0 million more revenue.
Net profit effect = $\$210 (1 - 0.30) = \147.0 million higher.
- 15G (i)** \$1400 ($1 - 0.30$) = \$980 too high
- (ii) no cash effect
- (iii) \$980 too low
- (iv) \$980 too high
- (v) no effect as the sum of 2021 and 2022 profits is unaffected.

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

1	Opening Retained profit	20 000
	Less loss	(4 250)
	General reserve	550
	Dividends	<u>(5 000)</u>
	Closing Retained profit	11 300
2	Increase in share capital	16 000
	Loss	(4 250)
	Dividends	<u>(5 000)</u>
	Increase in shareholders' equity	6 750

PRACTICE PROBLEM B

- 1 Most likely on the basis of time, i.e. 1/12 each month.
- 2 Over the period of instruction.
- 3 Again most likely on the basis of time but it could be argued that a large proportion of membership benefits are provided by the Boxing Day cricket test and therefore a large proportion of revenue could be recognised in December each year.
- 4 Media commissions when the advertisement appears; production commissions on the over time or at the point in time of contract completion.

- 5 'When the selling price of a product includes an identifiable amount for subsequent servicing, that amount is deferred and recognised as revenue over the period during which the service is performed.' (AASB 118.13)
- 6 When the golf clubs are sold by the golf course.

PRACTICE PROBLEM C

- 1 Not at time of taking out the loan, but an interest expense will accrue each day of the loan until it is paid.
- 2 Yes, electricity expense.
- 3 No, but \$1000 will be recognised as revenue each month.
- 4 No, no service has been provided.
- 5 Yes, the work has been done.



The statement of cash flows

ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** explain the contents of a statement of cash flows (16.1)
- LO2** prepare a statement of cash flows using the direct method (16.2)
- LO3** prepare a statement of cash flows using the indirect method (16.4)
- LO4** interpret a statement of cash flows (16.3, 16.5)
- LO5** explain how management use cash flow information (16.6).

CHAPTER OVERVIEW

In Chapter 7 you learned that a statement of cash flows provides relevant information to users about the cash inflows and cash outflows of an entity during a financial year. The statement of cash flows is required by accounting standards as part of the set of financial statements.

In subsequent chapters, you have covered double entry accounting, which provides you with the tools to better understand the contents of a cash flow statement and the links to both the income statement and the balance sheet. In this chapter, we enhance your knowledge of the contents of cash flow statements for large Australian companies and develop your skills in the preparation of these statements.

Understanding the statement of cash flows is important for all users of accounting reports in gaining a better insight into the health of a company. Undertaking the detailed analysis that is required for preparing a statement of cash flows is a good way to cement your understanding of what the financial statements contain and the interrelationship between income statement accounts and balance sheet accounts.

16.1 Revision of the statement of cash flows

LO1

Cash flow transactions are divided into operating activities, investing activities and financing activities.

- *Operating activities* are those activities that relate to the provision of goods and services.
- *Investing activities* are those activities that relate to the acquisition and disposal of noncurrent assets, including property, plant, equipment and other productive assets, and investments such as securities, that do not fall within the definition of cash.
- *Financing activities* are those activities that relate to changing the size and composition of the financial structure of the entity, including equity, and borrowings not falling within the definition of cash.

The standard format of the statement of cash flows is shown in Exhibit 16.1.

EXHIBIT 16.1

STATEMENT OF CASH FLOWS

STANDARD FORMAT

Operating activities

Cash generated by operations: day-to-day cash receipts and payments related to the activities that generate profit.

Investing activities

Cash used to invest in additional noncurrent assets, including investments in other companies, minus any cash proceeds obtained by disposing of such assets.

Financing activities

Cash obtained from borrowing and from issuing share capital, minus borrowing repaid or share buyback. Any cash transactions for dividend payments and share issue costs.

Change in cash (and equivalents) for the period

Net sum of the previous three categories.

Cash (and equivalents) at the beginning of the period

Brought forward from last period's statement of cash flows and balance sheet.

Cash (and equivalents) at the end of the period

Equals what is shown on the balance sheet at the end of the period.

Some important features of this format are:

- 1 The statement of cash flows covers the same period as the income statement.
- 2 Cash includes some equivalents: very liquid near-cash assets that can be turned into cash without any risk of loss, such as demand bank deposits and certificates with a maturity of three months or less.
- 3 While the format is traditional, recent changes to International Financial Reporting Standards do allow some alternative classifications. For example, interest paid is allowed to be included under financing activities.
- 4 In some cases, cash may include temporary negative bank balances (overdrafts) if they are just a result of cash management activity and the bank balances regularly vary from positive to negative.
- 5 The statement of cash flows follows some rules to ensure that its focus stays on cash. For example, if a dividend has been declared but not all paid, only the paid part is included in the statement of cash flows' financing activities section. Another example: if there is an account payable for a noncurrent asset, the investing activities figure shows only the amount paid so far.
- 6 Following on from point 5, any asset acquisitions, borrowing or share issues that are done without cash – such as acquiring land in return for shares – are excluded from the statement of cash flows. (They would be disclosed in a note to the statement of cash flows.)

- 7 The numbers in the statement of cash flows can be positive or negative, according to what happened during the period. For example, a really bad year can result in cash from operations being negative. As another example, a company undergoing significant restructuring could have more cash coming in from selling off assets than going out to buy more, so its investing section could be a positive cash inflow instead of the usual cash outflow.
- 8 Deriving the cash flow from day-to-day operations is one of the main reasons for having the cash flow analysis. The cash from operations figure takes away accrual accounting's many adjustments, which are very important in measuring profit but obscure the cash effects. Cash flow from operations can be shown by either the direct method or indirect method. Both methods are illustrated as follows. In Australia, the direct method is used with a note showing the indirect method. The direct method lists operating cash receipts and then deducts operating cash payments.

Figure 16.1 compares the two methods, both of which end up with the same figure for cash from operations.

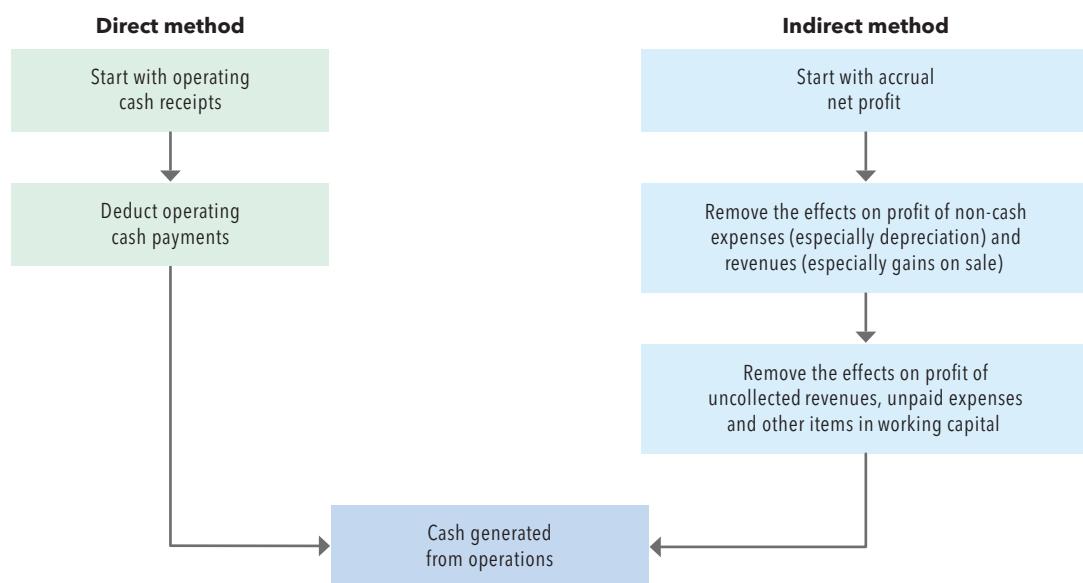


FIGURE 16.1 Comparing the direct and indirect methods of deriving cash from operations



HOW'S YOUR UNDERSTANDING?

16A Given the following information, what is cash flow from operations?

- cash sales, \$150 000
- credit sales, \$290 000
- cash received from accounts receivable, \$210 000
- repayment of borrowings to the bank, \$80 000
- issue of shares, \$180 000

The indirect method starts with the accrual-based profit figure and is adjusted to get the cash flow from operations by adding or subtracting:

- adjustments to remove accruals for non-cash expenses (or revenues) arising from noncurrent asset changes, such as depreciation expense, and profit or loss on the sale of noncurrent assets

- adjustments to remove accruals for uncollected revenues, revenues received in advance, prepaid expenses and unpaid expenses, represented by changes in non-cash working capital accounts (current assets and current liabilities).

In Australia, the indirect method is included in the notes to the financial statements to support the information in the direct method.



HOW'S YOUR UNDERSTANDING?

16B Classify each of the following as either operating, investing or financing cash flows.

- (i) payment of wages
- (ii) dividends paid
- (iii) issue of shares
- (iv) dividends received
- (v) cash sales
- (vi) proceeds from the sale of equipment
- (vii) borrowing from the bank
- (viii) repayment of a loan

16.2 Preparation using the direct method

LO2 Under the direct method of presenting cash flows from operations, it is necessary to calculate cash receipts from customers, payments to suppliers and employees, and other expense and revenue items affecting cash flows. The cash flows from investing and financing are then calculated.

We will use the information in Exhibits 16.2 and 16.3 to illustrate the direct method.

EXHIBIT 16.2

MICHAEL LIMITED

INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2022

	\$	\$
Sales		421 000
COGS		<u>151 000</u>
Gross profit		270 000
Less: Operating expenses		
Wages	100 000	
Insurance	13 000	
Interest	20 000	
Depreciation	20 000	
Loss on sale of equipment	4 000	
Other	<u>37 000</u>	<u>194 000</u>
Net operating profit before tax		76 000
Income tax expense		<u>27 000</u>
Net operating profit		<u>49 000</u>

EXHIBIT 16.3

MICHAEL LIMITED

COMPARATIVE BALANCE SHEETS AS AT 30 JUNE 2021 AND 2022

	2022	2021
	\$	\$
Current assets		
Cash	25 000	40 000
Accounts receivable	90 000	70 000
Inventory	62 000	45 000
Prepaid insurance	<u>8 000</u>	<u>5 000</u>
Total current assets	<u>185 000</u>	<u>160 000</u>
Noncurrent assets		
Land	400 000	200 000
Equipment (at cost)	280 000	150 000
Less: Accumulated depreciation	<u>(58 000)</u>	<u>(45 000)</u>
Total noncurrent assets	<u>622 000</u>	<u>305 000</u>
Total assets	<u>807 000</u>	<u>465 000</u>
Current liabilities		
Accounts payable	60 000	40 000
Wages payable	4 000	7 000
Income tax payable	6 000	5 000
Interest payable	<u>11 000</u>	<u>10 000</u>
Total current liabilities	<u>81 000</u>	<u>62 000</u>
Noncurrent liabilities		
Loans payable	250 000	200 000
Total liabilities	<u>331 000</u>	<u>262 000</u>
Net assets	<u>476 000</u>	<u>203 000</u>
Shareholders' equity		
Share capital	367 000	163 000
Asset revaluation surplus	50 000	0
Retained profits	<u>59 000</u>	<u>40 000</u>
Total shareholders' equity	<u>476 000</u>	<u>203 000</u>

Additional information:

- All purchases are on credit.
- Accounts payable only relates to inventory.
- Loans payable of \$150 000 were paid back during the year.
- The land was revalued upwards by \$50 000.
- Equipment that cost \$30 000 was sold during the year.

Cash flows from operating activities

To determine the cash flows from operations using the direct method, it is necessary to convert the accrual-based figures to a cash basis for each of the items outlined in the following text. The information for this section of the cash flow comes from the income statement and the balances for current assets and current liabilities in the balance sheet.

CASH RECEIPTS FROM CUSTOMERS

Cash receipts from customers will not be the same as sales, because not all accounts receivable will have paid by year-end. Cash received from customers will be less than sales if the balance of accounts receivable increases and will be greater than sales if the accounts receivable balance decreases. Therefore, to determine the cash received from customers, we need the sales figure from the income statement and the opening and closing balances of accounts receivable from the balance sheet.

To understand the relationship between accounts receivable, sales and cash received from customers, you may need to think through the debits and credits affecting the accounts receivable account. To keep things simple at this stage, we will assume that all sales are on credit and that there are no bad debts.

Accounts receivable increases when credit sales are made:

DR	Accounts receivable
CR	Sales

Accounts receivable decreases when cash is received:

DR	Cash
CR	Accounts receivable

As a result, the accounts receivable account would normally appear as follows:

Accounts receivable	
Opening balance	Cash received from customers
Credit sales	—
Closing balance	—

Alternatively, for the accounts receivable account it can be expressed as follows:

$$\text{Opening balance} + \text{Credit sales} - \text{Cash received from customers} = \text{Closing balance}$$

or

$$\text{Cash received from customers} = \text{Credit sales} + \text{Opening balance} - \text{Closing balance}$$

For Michael Limited, whose financial statements are shown in Exhibits 16.2 and 16.3, the cash receipts for customers can be determined given that we know that the opening and closing balances of accounts receivable were \$70 000 and \$90 000, respectively; and, from the income statement, that credit sales were \$421 000. Note that the missing figures calculated in each T-account are in bold to make the example easier to follow.

Accounts receivable		
Opening balance	70 000	Cash
Credit sales	<u>421 000</u>	—
Closing balance	90 000	—

Alternatively, using the formula:

$$\begin{aligned}\text{Cash received from customers} &= 421 000 + 70 000 - 90 000 \\ &= 401 000\end{aligned}$$



HOW'S YOUR UNDERSTANDING?

- 16C** It is important for you to understand what goes into an accounts receivable account and an inventory account. What is the journal entry for credit sales of \$100 000 of goods that cost the company \$70 000?
- 16D** The opening and closing balances of accounts receivable were \$100 000 and \$180 000 respectively. Sales on credit were \$300 000. What was the amount of cash received from customers?

CASH PAID TO SUPPLIERS

To calculate the cash paid to suppliers requires a two-stage process. First, it is necessary to calculate the amount of purchases. This can be found from the inventory account, given that you know the opening and closing balances of inventory from the balance sheet and the cost of goods sold used in calculating net profit.

Recall that the main journal entries that affect accounts payable are as follows:

- purchase of inventory on credit (assuming *perpetual inventory method*):

DR	Inventory
CR	Accounts payable

- payment to suppliers:

DR	Accounts payable
CR	Cash

Assuming that all inventory is purchased on credit, we can determine the cash paid to suppliers for inventory by Michael Limited as follows.

Inventory		
Opening balance	45 000	COGS
Purchases	<u>168 000</u>	—
Closing balance	62 000	

By solving for the missing purchases figure in the inventory account (i.e. \$168 000) and transferring it to accounts payable via the double-entry system (i.e. DR Inventory, CR Accounts payable), we can work out the amount of missing cash paid to suppliers in the accounts payable account (i.e. \$148 000).

Accounts payable		
Cash	<u>148 000</u>	Opening balance
—		Purchases
		Closing balance

If you prefer, solve the example algebraically. From the details provided you can determine that:

$$\begin{aligned} \text{Purchases} &= \text{COGS} + \text{Closing inventory} - \text{Opening inventory} \\ &= 151 000 + 62 000 - 45 000 \\ &= 168 000 \end{aligned}$$

and

$$\begin{aligned} \text{Payment to suppliers} &= \text{Purchases} + \text{Opening accounts payable} - \text{Closing accounts payable} \\ &= 168 000 + 40 000 - 60 000 \\ &= 148 000 \end{aligned}$$



HOW'S YOUR UNDERSTANDING?

16E Given the following account balances, what was the amount paid to suppliers during the year?

	\$
Inventory, 1 July 2021	250 000
Inventory, 30 June 2022	290 000
Accounts payable, 1 July 2021	130 000
Accounts payable, 30 June 2022	190 000
Cost of goods sold	600 000

PAYMENTS TO OTHER SUPPLIERS FOR SERVICES, AND TO EMPLOYEES

Under an accrual system, payment for expenses such as wages, interest, insurance, tax, electricity, rent and so on may be the same, or more, or less than the actual expense figure in the income statement. The differences result because of increases/decreases in prepayments/accruals. For example, in Michael Limited, prepaid insurance increases from \$5000 to \$8000; therefore, the payment for insurance is \$3000 greater than the expense for the period. Wages payable reduces from \$7000 to \$4000, which means that the payment for wages was \$3000 greater than the expense of the period. Taxes payable and interest payable both increased by \$1000 during the year, meaning that both expense amounts were \$1000 greater than the cash paid.

There are no other balance sheet accounts indicating further accrual of expenses or prepayments. Therefore, the other expenses category in the income statement of \$37 000 was all paid in cash. The depreciation amount of \$20 000 does not affect cash, and therefore is not included in the statement of cash flows (recall that the entry for depreciation is DR depreciation expense, CR accumulated depreciation, thus cash is not affected). Similarly, the loss on the sale of equipment does not affect cash.

We will now determine the cash paid for insurance, wages, interest and taxes. First, we will consider insurance. When an insurance premium is paid, the entry is:

DR	Prepaid insurance
CR	Cash

At the end of the accounting period, the insurance expense is determined by the amount of insurance used up:

DR	Insurance expense
CR	Prepaid insurance

For Michael Limited, the cash payment for insurance can be determined as follows, given that we know the opening and closing balance for insurance from the comparative balance sheets, and the insurance expense from the income statement.

Prepaid insurance		
Opening balance	5 000	Insurance expense
Cash	16 000	—
Closing balance	8 000	

Alternatively, using a formula:

$$\text{Closing prepaid insurance} = \text{Opening prepaid insurance} + \text{Payments} - \text{Insurance expense}$$

Therefore:

$$\begin{aligned}\text{Payment for insurance} &= \text{Insurance expense} + \text{Closing prepaid insurance} - \text{Opening prepaid insurance} \\ &= 13 000 + 8000 - 5000 \\ &= 16 000\end{aligned}$$



HOW'S YOUR UNDERSTANDING?

- 16F The prepaid insurance account showed an opening balance of \$24 000 and a closing balance of \$27 000. Insurance expense was \$69 000. What were the cash payments for insurance?

The cash payments for wages can be determined, given that we know the opening and closing balances of wages payable from the comparative balance sheets, and the wages expense from the income statement.

Wages payable		
Cash	103 000	

Opening balance		7 000
Wages expense		<u>100 000</u>
Closing balance		4 000

The cash paid for wages is \$103 000. Alternatively, by formula we have:

$$\begin{aligned}
 \text{Closing wages payable} &= \text{Opening wages payable} + \text{Wages expense} - \text{Cash paid for wages} \\
 \text{Cash paid for wages} &= \text{Wages expense} + \text{Opening wages payable} - \text{Closing wages payable} \\
 &= 100 000 + 7000 - 4000 \\
 &= \$103 000
 \end{aligned}$$

The cash payments for interest can be determined in a similar manner.

Interest payable		
Cash	19 000	

Opening balance		10 000
Interest expense		<u>20 000</u>
Closing balance		11 000

Alternatively, by formula, we have:

$$\text{Closing interest payable} = \text{Opening interest payable} + \text{Interest expense} - \text{Cash paid for interest}$$

Therefore:

$$\begin{aligned}
 \text{Cash paid for interest} &= \text{Interest expense} + \text{Opening interest payable} - \text{Closing interest payable} \\
 &= 20 000 + 10 000 - 11 000 \\
 &= 19 000
 \end{aligned}$$

Finally, we will calculate the taxes paid during the year. Recall that when tax is calculated at the end of the year, the journal entry is:

DR	Income tax expense
CR	Income tax payable

When the amount is paid:

DR	Income tax payable
CR	Cash

Income tax payable		
Cash	26 000	

Opening balance		5 000
Income tax expense		<u>27 000</u>
Closing balance		6 000

The cash paid for income taxes during the year, determined from the income tax payable ledger account, is shown to be \$26 000. Alternatively, by formula it could be calculated as follows:

$$\text{Closing income tax payable} = \text{Opening income tax payable} + \text{Income tax expense} - \text{Income tax paid}$$

Therefore:

$$\begin{aligned}\text{Income tax paid} &= \text{Income tax expense} + \text{Opening income tax payable} - \text{Closing income tax payable} \\ &= 27\ 000 + 5\ 000 - 6\ 000 \\ &= 26\ 000\end{aligned}$$



HOW'S YOUR UNDERSTANDING?

- 16G** The income tax payable account showed an opening balance of \$50 000 and a closing balance of \$75 000. Income tax expense was \$200 000. What was the income tax paid?

All the calculations necessary to show the cash flows from operating activities have now been completed, and the results are shown:

Cash flows from operating activities	\$
Receipts from customers	401 000
Payments to suppliers	(148 000)
Payments for insurance	(16 000)
Payments to employees	(103 000)
Payment for other expenses	(37 000)
Interest paid	(19 000)
Income tax paid	<u>(26 000)</u>
Net cash provided by operating activities	<u>52 000</u>

In practice, lines 2 to 5 are often added together and reported under payments to suppliers and employees (\$304 000).

Cash flows from investing activities

Our next step is to calculate cash inflows and outflows from investing activities. To do this we need to examine any changes in the noncurrent assets in the balance sheets, together with any additional information we have on the sale or purchase of noncurrent assets. This additional information may give details of the sale of any assets during the year and any asset revaluations (up or down). When there are changes in noncurrent assets, the potential explanations are an acquisition, disposal, asset revaluation or a combination of the above.

For Michael Limited, there are changes in two noncurrent assets; namely, land and equipment. Changes in these accounts result from net acquisitions. It is necessary to check whether the changes are only the result of acquisitions or if some disposals are involved. This can be ascertained by seeing if there is any profit or loss on disposal in the income statement or some mention of disposals or revaluations in the notes. For Michael Limited, a loss of \$4000 on the sale of equipment was reported. Additional information provides more details about the sale of equipment and notes the revaluation of land.

Land has increased from \$200 000 to \$400 000. There is no indication of any disposals of land, and the land was revalued upwards by \$50 000 (see revaluation surplus). The entry for this revaluation would have been:

DR	Land
CR	Revaluation surplus

Based on the information supplied, land that cost \$150 000 was purchased during the year (\$200 000 – \$50 000).

The general ledger account would appear as follows:

Land		
Opening balance	200 000	
Cash	150 000	
Revaluation surplus	<u>50 000</u>	
	400 000	

To calculate cash related to the purchase or sale of noncurrent assets that have accumulated depreciation, it is important that you recall the journal entries introduced in Chapter 13 for the sale of a noncurrent asset.

In this case we know that equipment that cost \$30 000 was sold during the year and that there was a loss on sale of \$4000. To determine the purchases of equipment, first consider the journal entry when equipment is sold with a loss on sale:

\$ \$		
DR Cash		?
DR Loss on sale		4000
DR Accumulated depreciation		?
CR Equipment		30 000

We can first determine the accumulated depreciation on the equipment sold from the accumulated depreciation account, as we know opening and closing balances from the comparative balance sheets and depreciation expense from the income statement.

Accumulated depreciation			
Disposal	7 000	Opening balance	45 000
	<u>—</u>	Depreciation	<u>20 000</u>
		Closing balance	58 000

As shown in the account, the accumulated depreciation for the equipment sold was \$7000.

We now have additional information for the journal entry.

\$ \$		
DR Cash		?
DR Loss on sale		4 000
DR Accumulated depreciation		7 000
CR Equipment		30 000

Like all journal entries, the balances of the DRs equal the balance of the CRs. Therefore, \$19 000 cash was received from the equipment that was sold ($30 000 - 4000 - 7000 = 19 000$).

Next, we can calculate the amount of cash paid for the equipment purchased by calculating the debit to the equipment account as follows:

Equipment			
Opening balance	150 000	Disposal	30 000
Cash	160 000		<u>—</u>
Closing balance	280 000		

Note that the disposal of the equipment is entered in the equipment account at cost. New equipment at a cost of \$160 000 was purchased.

The cash flows from the investing activities section of the statement of cash flows would appear as follows:

Cash flows from investing activities	\$
Purchase of land	(150 000)
Purchase of equipment	(160 000)
Proceeds from sale of equipment	<u>19 000</u>
Net cash used in investing activities	<u>(291 000)</u>



HOW'S YOUR UNDERSTANDING?

- 16H** If a company sells a piece of equipment with a book value of \$100 000 (cost \$250 000 less accumulated depreciation of \$150 000) for \$80 000, what is the journal entry?

Cash flows from financing activities

The next step is to determine the cash flows from financing activities. Finance comes from internal and external sources. The former is generated through operations, and is disclosed as cash flow from operations. External finance is generated from lenders or shareholders. To determine the cash flows from financing, it is necessary to examine the noncurrent liability accounts and the shareholders' equity account.

For Michael Limited, loans payable has increased from \$200 000 to \$250 000. The difference could be the result of a combination of both debt repayments and debt raising.

The journal entry for debt repayment is:

DR	Loans payable
CR	Cash

The journal entry for debt raising is:

DR	Cash
CR	Loans payable

We can determine the amount of debt raising from the general ledger account for loans payable, as we know the opening and closing balances as well as debt repayment of \$150 000.

Loans payable			
Cash (repayment)	150 000	Opening balance	200 000
	—	Cash (raising)	<u>200 000</u>
		Closing balance	250 000

As shown, new debt of \$200 000 was raised during the year.

Turning now to the shareholders' equity accounts, you can see that share capital increased by \$204 000 from \$163 000 to \$367 000. As there was no mention of share buybacks, the difference of \$204 000 must have resulted from the issue of shares. Next, the change in the asset revaluation surplus has already been explained as a revaluation of the land and there is no effect on cash. Retained profits changes can result from profit or loss from the period, or from dividends or transfers to or from general reserves. As there are no other reserve accounts besides asset revaluation reserve in this case, the transfer to or from reserves is not a possibility. By reconstructing the retained profits accounts, we can see the amount of dividends declared during the year is \$30 000, given that we know the profit for the year.

Retained profits			
Dividends	30 000	Opening balance	40 000
	—	Profit	49 000
		Closing balance	59 000

From the example given, it can be seen that dividends total \$30 000. These could be paid in cash (DR retained profits, CR cash) or owing at balance date.

In the latter case, the entry would be:

DR	Retained profits
CR	Dividends payable

For Michael Limited, there is no dividends payable account; therefore, all the dividends of \$30 000 must have been paid in cash.

Based on the example, the cash flows from financing activities are as follows:

Cash flows from financing activities	\$
Proceeds from borrowings	200 000
Repayment of borrowings	(150 000)
Issue of shares	204 000
Dividends paid	(30 000)
Net cash provided from financing activities	224 000

Combining everything discussed, the full statement of cash flows is shown in Exhibit 16.4.

EXHIBIT 16.4

MICHAEL LIMITED

STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2022

\$	
Cash flows from operating activities	
Receipts from customers	401 000
Payments to suppliers and employees	(304 000)
Interest paid	(19 000)
Income tax paid	(26 000)
Net cash provided by operating activities	52 000
Cash flows from investing activities	
Purchase of land	(150 000)
Purchase of equipment	(160 000)
Proceeds from sale of equipment	19 000
Net cash used in investing activities	(291 000)
Cash flows from financing activities	
Proceeds from borrowings	200 000
Repayment of borrowings	(150 000)
Issue of shares	204 000
Dividends paid	(30 000)
Net cash provided from financing activities	224 000
Net increase (decrease) in cash held	(15 000)
Cash at 1 July 2021	40 000
Cash at 30 June 2022	25 000

16.3 Interpreting a statement of cash flows using the direct method

LO4

Chapter 7 illustrated some of the information you can gain from examining statements of cash flows.

Here, we consider in more detail the interpretation of these cash flows. When interpreting the cash flow, it is useful to look at the information over a number of years. This allows you to review the current situation and to identify trends over time. While there are a number of approaches to this analysis, some suggestions would include:

- 1 Review the net cash flow from operations. Generally, you would be looking at a net cash inflow from operations. While companies may operate with a negative cash flow from operations, in the short-term, this is unlikely to be sustainable, as this will need to be funded by cash flow from financing. Is the cash flow from operations improving over time? If it is falling over time, consider the components to determine reasons.
- 2 Review cash flow from investing to see if the company has been expanding their business by investing in large amounts of non-current assets, or if they have sold non-current assets.
- 3 Review cash flow from financing to see if the company has issued shares, increased borrowings or repaid borrowings. Has the company paid dividends to shareholders?
- 4 Review the mix of cash flow from operations, investing and financing. For example, is the company able to cover their outflow from investing activities with the cash inflow from operating activities? Or does the company need to supplement this with a share issue or additional borrowings which can be identified by looking at cash flow from financing.
- 5 Review the larger numbers within the statement (often cash from customers and cash paid to suppliers) or the larger changes year on year for other relevant information.
- 6 Remember in your interpretation to also look at the information available in the balance sheet and income statement to support your findings. For example, if there is a reduction in cash received from customers, then look at what is happening with sales, accounts receivable and bad debts.

16.4 Preparation using the indirect method

LO3

The indirect method of cash flow analysis is used in many overseas countries, including Canada and the United States (where companies can use either direct or indirect, but generally choose the indirect method). As noted, it is also necessary to show this information in Australia in a note to the financial statements to provide the reconciliation between operating profit and cash flow from operations. Consider for a minute why these two items should reconcile. The two will reconcile when you eliminate all the accruals in operating profit, which will get you back to a cash profit; that is, cash flow from operations.

It is important to note that the direct and indirect methods give the same results. The only difference is in how they report cash flow from operations. The reporting of cash flows from investing and financing are identical under both methods. The indirect method of reporting cash flow from operations starts with operating profit, then makes adjustments to this figure from non-cash items to arrive at cash flow from operating activities. There are two main types of non-cash adjustments: (a) depreciation, losses and gains; and (b) credit and accrual transactions that form part of the calculation of profit.

To adjust for depreciation, losses and items that are expenses but do not affect cash, these items are added back to operating profit. These include depreciation, amortisation and loss on the sale of noncurrent assets. In addition, non-cash revenues such as profit on the sale of noncurrent assets are deducted from operating profit.

Let's take a simple example with only one adjustment – namely, depreciation – to illustrate what we are discussing. Assume a company has only cash sales amounting to \$100 000, cash expenses of \$60 000 and depreciation of \$10 000. Therefore, net profit is \$30 000. Cash flow from operations can be determined by deducting \$60 000 from \$100 000, giving \$40 000 (the direct method); or by adding back the \$10 000

depreciation to operating profit of \$30 000, again giving cash flow from operations of \$40 000 (the indirect method).

The second type of adjustment removes the accruals relating to current assets and current liabilities. For example, if accounts receivable increases during a period by \$10 000, credit sales will be greater than cash received from customers by \$10 000. Under accrual accounting, sales are recognised when earned, whereas the cash receipts from customers can be before, after or at the same time as revenue recognition. Therefore, to adjust from operating profit to cash flow from operations, it would be necessary to deduct \$10 000 from operating profit to get cash flow from operations. This has eliminated the non-cash portion of sales from profit. Similarly, other working capital items – including inventories, prepayments, accounts payable and accrued expenses – need to be adjusted.

Therefore, the following rules apply in adjusting for working capital changes:

- deduct from operating profit increases in working capital assets (accounts receivable, inventory and prepayments)
- deduct from operating profit decreases in working capital liabilities (accounts payable and accruals)
- add to operating profit decreases in working capital assets
- add to operating profit increases in working capital liabilities.

We can summarise the indirect method of calculating cash from operations as follows:

Operating profit after tax	
+	Non-cash expenses (e.g. depreciation)
-	Non-cash revenues (e.g. profit on sale of plant)
+	Decrease in accounts receivable, inventory and prepayments
+	Increase in accounts payable and accrued expenses
-	Decrease in accounts payable and accrued expenses
-	Increase in accounts receivable, inventory and prepayments
=	Cash flows from operating activities

Note that each of the accounts discussed relate to the income statement: credit sales relates to accounts receivable; credit purchases/COGS relates to inventory and accounts payable; and prepayments and accruals relate to expenses. It would not include current liabilities, such as dividends payable or short-term loans, given the other side of the journal entry does not involve any expense or revenue items.



HOW'S YOUR UNDERSTANDING?

- 16I** The net operating profit of Luke Ltd was \$31 000. Depreciation expense was \$10 000 and gain on sale of equipment \$2000. Accounts receivable increased by \$15 000 and inventory decreased by \$7000. Accounts payable decreased by \$8000. What was the cash flow from operations?

To illustrate the preparation of a statement of cash flows using the indirect method, we'll redo the Michael Limited example from section 16.2 (see Exhibit 16.5).

You should note that the cash flow from operations using the indirect method gives the same total cash flows from operations as did the direct method. To complete the statement of cash flows, it would be necessary to add on the cash flows from investing and financing, which would be exactly as outlined in Exhibit 16.4.

Consider the following extract from the cash flow statement of Tamarack Systems Ltd, which uses the indirect method to calculate cash flow from operations, as shown in Exhibit 16.6.

EXHIBIT 16.5**MICHAEL LIMITED****CASH FLOWS FROM OPERATING ACTIVITIES – INDIRECT METHOD**

	\$
Operating profit after tax	49 000
Depreciation	20 000
Loss on sale of equipment	4 000
Changes in current assets and liabilities:	
Increase in accounts receivable	(20 000)
Increase in inventory	(17 000)
Increase in prepaid insurance	(3 000)
Increase in accounts payable	20 000
Increase in income tax payable	1 000
Increase in interest payable	1 000
Decrease in wages payable	<u>(3 000)</u>
Cash flows from operating activities	<u>52 000</u>

EXHIBIT 16.6**TAMARACK SYSTEMS LTD****STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2022**

	\$	\$
Operating activities		
Net profit for the year	56 292	
Adjustments for non-cash expenses:		
Depreciation of building	69 904	69 904
Adjustments for changes in non-cash working capital:		
Accounts receivable	(76 706)	
Inventories	10 815	
Prepaid expenses	5 317	
Accounts payable	35 987	
Income taxes payable	<u>1 138</u>	<u>(23 449)</u>
Cash flow from operations	<u>102 747</u>	
Investing activities		
Additions to land	(7 500)	
Additions to building	<u>(179 914)</u>	<u>(187 414)</u>
Financing activities		
Dividend payments	(30 000)	
Repayment of loans	(20 000)	
Increase in loan	1 591	
Share capital issued	<u>50 000</u>	<u>1 591</u>
Net total change in cash and equivalents	<u>(83 076)</u>	
Cash and equivalents – beginning of year	<u>34 240</u>	
Cash and equivalents – end of year	<u>(48 836)</u>	

We can make several observations:

- Cash from operations was almost twice accrual net profit (\$102 747 versus \$56 292).
- The main reasons for the differences were the amount of depreciation (\$69 904) and the increase in accounts payable (\$35 987).
- Cash from operations has been severely reduced by a large rise in accounts receivable; that is, uncollected revenue (\$76 706).
- Operations were the major source of cash during the year – there was no new borrowing and the issue of shares brought in only half the cash that operations did.
- The major use of cash was additions to noncurrent assets.
- The company's cash balance reversed from \$34 240 to a cash deficit of \$48 836.

We do not know the reasons for the effects shown in the statement of cash flows, but we certainly do know several things we might like to ask management about. In particular, we might like to know how management proposes to get cash back onto the positive side.



HOW'S YOUR UNDERSTANDING?

16J The financial year for Neverless Limited ends on 30 June 2022. During the month of June 2022, the company has incurred the following transactions:

- (i) Sent invoices for \$20 000 to customers for work carried out in June; \$5000 of this was collected in June.
- (ii) Received \$30 000 deposit on a job that will be carried out in July 2022.
- (iii) Paid accounts payable \$40 000, which was outstanding on 31 May 2022.
- (iv) Sold old equipment for \$20 000 – the equipment originally cost \$300 000 with accumulated depreciation at the time of sale of \$250 000.

Indicate the effect (increase/decrease/no change) of each transaction on the company's cash flow from operating activities, investing activities and financing activities for the year ended 30 June 2022.

16.5 Interpreting a statement of cash flows using the indirect method

The indirect method is used extensively in North America. As noted earlier, in Australia the indirect method is shown as a note to the statement of cash flows. In Exhibit 16.7 we have provided an example that we call Tyson Foods Limited. The example is a simplified version of some real figures for a US company. Note that it is comparative for three years, and that the three years vary a great deal in the details of their cash flows. A great deal of information is provided about various financing and investing activities.

LO4

Let's look at some of the things Tyson's statement of cash flows tells us.

- The company's cash from operations is very large in relation to its other cash flows. This allows the company to finance most of its activities from this internally generated cash, rather than having to borrow or issue more share capital.
- The company does not keep much cash on hand relative to its annual flow. Cash from operations has been about, or more than, 10 times that of cash on hand in each of the three years.

EXHIBIT 16.7

TYSON FOODS LTD

CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THREE YEARS ENDED 30 JUNE 20X2

	20X2 \$000	20X1 \$000	20X0 \$000
Cash flows from operating activities			
Net profit	185 712	178 417	149 282
Adjustments to reconcile net profit to cash provided by operating activities:			
Depreciation	145 756	119 363	106 630
Amortisation	30 753	29 502	29 201
Loss on dispositions of property and equipment	695	218	816
(Increase) decrease in accounts receivable	35 344	(25 259)	(3 810)
(Increase) decrease in inventories	(66 909)	10 606	(14 238)
Increase (decrease) in trade accounts payable	(41 001)	7 414	(6 396)
Net change in other current assets and liabilities	<u>18 052</u>	<u>(54 381)</u>	<u>35 589</u>
Cash provided by operating activities	<u>308 402</u>	<u>265 880</u>	<u>297 074</u>
Cash flows from investing activities			
Additions to property, plant and equipment	(268 682)	(107 990)	(213 576)
Proceeds from sale of property, plant and equipment	7 387	6 615	15 294
Net change in other assets and liabilities	<u>(41 393)</u>	<u>(3 309)</u>	<u>(7 424)</u>
Cash used for investing activities	<u>(302 688)</u>	<u>(104 684)</u>	<u>(205 706)</u>
Cash flows from financing activities			
Net increase (decrease) in notes payable	(29 200)	(10 000)	10 000
Proceeds from long-term debt	977 421	131 941	155 500
Repayments of long-term debt	(954 497)	(278 694)	(246 642)
Dividends paid	<u>(4 951)</u>	<u>(2 836)</u>	<u>(1 716)</u>
Cash used for financing activities	<u>(11 227)</u>	<u>(159 589)</u>	<u>(82 858)</u>
Increase/(decrease) in cash	(5 513)	1 607	8 510
Cash and cash equivalents at beginning of year	<u>27 060</u>	<u>25 453</u>	<u>16 943</u>
Cash and cash equivalents at end of year	<u>21 547</u>	<u>27 060</u>	<u>25 453</u>

- Interesting changes are suggested in the company's relationship with its customers and suppliers. Accounts receivable had been increasing each year in 20X0 and 20X1, but decreased significantly in 20X2. (It turns out that new arrangements were made to sell accounts receivable continuously to a bank, speeding up the company's receipt of cash.) Inventories rose quite a lot in 20X2 and accounts payable were paid off faster: these two items reduced cash from operations by more than \$100 million.
- The company acquired more noncurrent assets during 20X2. Those acquisitions cost \$268 million in 20X2, more than twice what was spent in 20X1, and more than was spent in 20X0. Such acquisitions have been Tyson's major use of the cash it generates from operations.
- These acquisitions help the company keep its assets renewed as they lose their value through use. The sum of the company's amortisation and depreciation for the year gives an indication of that lost value, which is only about \$90 million less than the spending on noncurrent assets.

- Tyson did a major refinancing of its long-term debt during 20X2, most likely to take advantage of financial market changes such as interest rate reductions. You can see that although nearly a billion dollars was rearranged, the net amount of additional borrowing was small.
- The company does not pay much in dividends. This is presumably part of the company's internal financing strategy: retained profits is the largest single account on the right-hand side of the company's 20X2 balance sheet.
- Net total cash flow ('increase/(decrease) in cash') is small compared to the size of the operating, investing and financing flows. The company appears to be doing a careful job of balancing incoming and outgoing cash flows.

16.6 Cash flow and the manager

Managers are responsible not only for earning profit for the company, but also for managing cash so that bills can be paid on time, excess borrowing and interest costs can be avoided, and the company's liquidity and solvency can be generally protected. Effectively employing available cash so that it does not remain idle, earning nothing, is also important. Cash flow and profit are generally positively correlated (good performance tends to move them both up and poor performance tends to move them both down), and over a long enough period of time (years), they are almost the same.

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However, in the short run, the relationship between cash flow and profit can be complex. For example, a problem new businesses can have is to grow too fast. Often the product demand and the entrepreneurial enthusiasm are high: the business was founded in the hope that people would want the product or service, and it is exciting to everyone when they do! The income statements of such businesses often show high profits, but the cash flow and the balance sheet may tell a different story. In the enthusiasm of making sales and satisfying customers, inventory levels often get too high (making sure there is something for everyone on hand) and collections from customers often lag (receivables get too high as the entrepreneur concentrates on the pleasures of selling rather than the nuisance of collecting). The cash flow deducts the increases in inventories and receivables from accrual-basis net income, and may show that operating cash flows are small or even negative. When this happens, you do not need cash flow to know you are in trouble: your bank balance tells you that! But the statement of cash flow reports the whole story to others, so that they can see what you have accomplished in obtaining and using cash in your operating, financing and investing activities. You then have to be prepared to explain such activities to users of the financial statements.

The statement of cash flows provides a measure of managerial performance in managing cash, so smart managers must be aware of how their efforts are reflected in it, just as they are aware of the measures of performance and position offered by balance sheets and income statements. As managers, it is important to understand the concepts covered in this chapter. While accounting systems will support the creation of the cash flow statement, having a better understanding of the concepts behind each of the items in the cash flow statement will help with identifying potential areas of concern and actions that need to be taken.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Prepare a schedule of cash flows from operating activities

Following is the income statement for JKL Limited.

**JKL LIMITED
INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2022**

	\$	\$
Sales	13 000	
Less: Cost of goods sold	<u>6 000</u>	
Gross profit	7 000	
Operating expenses	2 200	
Depreciation	<u>1 400</u>	<u>3 600</u>
Operating profit before income tax	3 400	
Income tax expense	<u>1 100</u>	
Net profit after tax	<u>2 300</u>	

Additional information:

- a All sales were on credit.
- b Accounts receivable decreased by \$2000 during the year.
- c All stock purchases were on credit.
- d Inventory increased by \$1800.
- e Accounts payable decreased by \$3100 during the year.
- f Income taxes payable increased by \$600 during the year.
- g All operating expenses are paid in cash in the year incurred.

Prepare a schedule of cash flows from operating activities using:

- 1 the direct method
- 2 the indirect method.

PRACTICE PROBLEM B

Calculate cash payments

- 1 Cost of goods sold = \$2 300 000
Inventory increased from \$300 000 to \$610 000
Accounts payable increased from \$200 000 to \$295 000

Required: calculate cash payments for purchases.

- 2 Income tax expense for the year = \$48 000
Income taxes payable have increased by \$15 000 to \$20 500

Required: calculate cash payments for income tax.

- 3 Sales = \$7 640 000
Accounts receivable increased from \$1 000 000 to \$1 870 000

Required: calculate cash receipts from sales.

- 4 Wages expense = \$2 350 000
Wages payable decreased from \$1 490 000 to \$1 million.

Required: calculate cash paid for wages.

PRACTICE PROBLEM C

Prepare a statement of cash flows

The following information relates to Tut Ltd.

TUT LTD
COMPARATIVE BALANCE SHEET AS AT 30 JUNE 2022

	2022 \$000	2021 \$000
Current assets		
Cash	–	20
Accounts receivable	143	105
Inventory	200	220
Prepaid insurance	10	10
Noncurrent assets		
Equipment	640	450
Accumulated depreciation – equipment	(200)	(150)
Land	680	600
Motor vehicles	485	520
Accumulated depreciation – motor vehicles	(183)	(210)
Total assets	<u>1 775</u>	<u>1 565</u>
Current liabilities		
Bank overdraft	10	–
Accounts payable	205	265
Income tax payable	44	70
Final dividend payable	85	60
Noncurrent liabilities		
Borrowings	<u>470</u>	<u>430</u>
Total liabilities	<u>814</u>	<u>825</u>
Net assets	<u>961</u>	<u>740</u>
Shareholders' equity		
Share capital	620	450
Revaluation surplus	210	130
Retained profits	<u>131</u>	<u>160</u>
Total shareholders' equity	<u>961</u>	<u>740</u>

INCOME STATEMENT FOR YEAR ENDED 30 JUNE 2022

	\$000
Sales	560
COGS	(170)
Insurance expense	(45)
Other expenses	(132)
Depreciation expense - equipment	(50)
Depreciation expense - motor vehicles	(38)
Loss on sale of motor vehicles	<u>(25)</u>
Profit before tax	100
Income tax expense	<u>(44)</u>
Profit after tax	<u>56</u>

Additional information (dollar amounts expressed in full units):

- 1 Land was revalued upwards during the year by \$80 000.
- 2 Motor vehicles with an original cost of \$145 000 and accumulated depreciation of \$65 000 were sold for \$55 000.
- 3 Equipment to the value of \$60 000 was acquired with the issue of a long-term note. The amount payable has been included in borrowings on the balance sheet.

Prepare a statement of cash flows for Tut Ltd for the year ended 30 June 2022. Also prepare a reconciliation of cash from operating activities to net profit.

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 What are cash and cash equivalents?
- 2 Provide examples of trends in operating, investing and financing cash flows that would be of concern to:
 - a investors
 - b creditors.
- 3 Explain the difference between the direct and indirect methods of calculating cash flow from operations.
- 4 At the Annual General Meeting of Scotlay Ltd, the managing director made the following statement:

Although the year was one characterised by poor sales performance, Scotlay Ltd maintained strong operating cash flows. Operating profit for the year was \$1 million, and net operating cash flows were \$4 million. The difference between operating profit and operating cash flows is primarily explained by depreciation charges of \$3 million. Scotlay's continuing investment program will ensure that operating cash flows are even higher next year, as depreciation charges are expected to increase to \$5 million.

- a Explain how depreciation charges can create a difference between operating profit after tax and net cash flow from operating activities.
- b Briefly comment on the validity of the managing director's prediction of an increase in operating cash flows next year.
- 5 Briefly explain why managing cash flow is important for the success of a business.

PROBLEMS

PROBLEM 16.1

Classifying cash flows

The items following were taken from a listed company's statement of cash flows. Classify each item as operating, investing or financing. For each item state whether cash is increasing or decreasing.

- 1 Cash received from customers
- 2 Purchases of machinery
- 3 Cash paid to suppliers
- 4 Cash paid for dividends to shareholders
- 5 Payment of loan interest
- 6 Cash paid to employees
- 7 Cash borrowed from the bank
- 8 Income taxes paid
- 9 Repayment of loan principal
- 10 Cash received from issue of share capital

PROBLEM 16.2

Prepare a cash flow statement

EXPRESS LTD
COMPARATIVE BALANCE SHEETS FOR 2022 AND 2021

	2022 \$	2021 \$
Current assets		
Cash	93	50
Accounts receivable	80	60
Inventory	70	100
Prepaid insurance	40	25
Total current assets	283	235
Noncurrent assets		
Equipment	315	350
Less accumulated depreciation	90	140
Total noncurrent assets	225	210
Total assets	508	445
Current liabilities		
Accounts payable	50	35
Wages payable	25	15
Rent received in advance	18	15
Accrued other expenses	20	30
Total current liabilities	113	95
Noncurrent liabilities		
Loan	90	125
Total noncurrent liabilities	90	125
Total liabilities	203	220
Net assets	305	225

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Shareholders' equity

Share capital	140	140
Retained earnings	<u>165</u>	<u>85</u>
Total shareholders' equity	<u>305</u>	<u>225</u>

**EXPRESS LTD
PROFIT AND LOSS STATEMENT FOR THE YEAR ENDED 30 JUNE 2022**

	\$
Sales	470
Cost of goods sold	<u>180</u>
Gross profit	290
Other revenue	
Rent	<u>60</u>
Total revenue	350
Less operating expenses	
Wages	35
Insurance	30
Depreciation	110
Other expenses	75
Loss on disposal of equipment	<u>4</u>
	<u>254</u>
Net profit	<u>96</u>

Additional information:

Equipment that costs \$200 was sold during the year.

Required:

Prepare a cash flow statement ending 30 June 2022.

PROBLEM 16.3

Operating, financing and investing activities

The following information relates to LL Ltd.

**LL LTD
COMPARATIVE BALANCE SHEETS**

	2022 \$	2021 \$
Current assets		
Cash	95 000	105 000
Accounts receivable	330 000	150 000
Inventory	270 000	260 000
Prepaid insurance	10 000	5 000
Noncurrent assets		
Land	540 000	480 000
Equipment	587 000	585 000
Accumulated depreciation – equipment	<u>(332 000)</u>	<u>(245 000)</u>
Total assets	1 500 000	1 340 000

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Current liabilities		
Accounts payable	190 000	360 000
Wages payable	64 000	52 000
Noncurrent liabilities		
Borrowings	<u>746 000</u>	<u>488 000</u>
Total liabilities	<u>1 000 000</u>	<u>900 000</u>
Net assets	<u>500 000</u>	<u>440 000</u>
Shareholders' equity		
Share capital	250 000	240 000
Asset revaluation reserve	90 000	50 000
Retained profits	<u>160 000</u>	<u>150 000</u>
Total shareholders' equity	<u>500 000</u>	<u>440 000</u>

LL LTD
INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2022

	\$	\$
Sales	700 000	
Gain on sale of equipment	<u>30 000</u>	
	730 000	
Less:		
Cost of goods sold	87 000	
Depreciation	300 000	
Wages expense	100 000	
Rent expense	9 000	
Insurance expenses	<u>30 000</u>	<u>526 000</u>
Profit before income tax	204 000	
Less: Income tax expense	<u>64 000</u>	
Profit/(loss) after tax	<u>140 000</u>	

Additional information:

Equipment with a book value of \$70 000 was sold during the year.

- 1 What is the journal entry for the sale of equipment?
- 2 Calculate the following:
 - a cash received from customers
 - b cash paid to suppliers
 - c wages paid
 - d rent paid
 - e insurance paid.
- 3 Calculate the following:
 - a cash paid for land purchase
 - b cash paid for equipment.
- 4 Calculate cash flow from financing activities for the year ended 30 June 2022.

PROBLEM 16.4

Cash flow from operations

The following data are extracted from the financial statements of Flutes Ltd:

	2022 \$	2021 \$
Accounts receivable	240 000	265 000
Inventory	340 000	380 000
Salaries payable	80 000	50 000
Accounts payable	280 000	310 000
Interest payable	10 000	10 000
Income tax payable	95 000	80 000

Additional information:

- 1 All sales are made on credit; there is no allowance for doubtful debts
- 2 Sales revenue, \$880 000
- 3 Cost of goods sold, \$620 000
- 4 Salaries expense, \$70 000
- 5 Interest expense, \$110 000
- 6 Income tax expense on current year's profits, \$95 000.

Calculate all cash flows revealed by the data.

PROBLEM 16.5

Cash flows for financing and investing

The following data are extracted from the financial statements of Hippolyta Ltd.

	2022 \$	2021 \$
Equipment	128 000	192 000
Accumulated depreciation - equipment	(35 000)	(40 000)

Additional information:

- a Proceeds from sale of equipment, \$75 000
- b Net book value (cost less accumulated depreciation) of equipment sold, \$62 000
- c Depreciation expense for equipment, \$17 000
- d Some new equipment was purchased during 2022
- e Assume all sales and purchases of equipment are for cash

Required:

- 1 Reconstruct the journal entry to record the sale of equipment.
- 2 What is the value of the equipment purchased?

PROBLEM 16.6

Cash flow from financing

The following data are extracted from the financial statements of Theseus Limited:

	2022 \$	2021 \$
Share capital	368 000	321 000
Retained earnings	210 000	198 000
Net profit	38 000	34 000

Calculate all the cash flows revealed by the data provided.

PROBLEM 16.7

Preparation of a statement of cash flows

The following information relates to Sandra Limited.

	Comparative balance sheets	
	30 June 2022 \$000	30 June 2021 \$000
Current assets		
Cash	193	240
Accounts receivable	400	470
Allowance for doubtful debts	(50)	(47)
Inventory	420	380
Prepaid insurance	30	40
Noncurrent assets		
Land	605	620
Equipment	2 030	1 455
Accumulated depreciation – equipment	<u>(690)</u>	<u>(560)</u>
Total assets	<u>2 938</u>	<u>2 598</u>
Current liabilities		
Accounts payable	210	290
Accrued other expenses	120	140
Interest payable	40	40
Income tax payable	780	680
Noncurrent liabilities		
Borrowings	<u>770</u>	<u>1 100</u>
Total liabilities	<u>1 920</u>	<u>2 250</u>
Shareholders' equity		
Share capital	330	210
Asset revaluation reserve	60	10
Retained profits	<u>628</u>	<u>128</u>
Total shareholders' equity	<u>1 018</u>	<u>348</u>
Total liabilities and shareholders' equity	<u>2 938</u>	<u>2 598</u>

INCOME STATEMENT YEAR ENDED 30 JUNE 2022

	\$000	\$000
Sales revenue	4 800	
Gain on sale of land	180	
Gain on sale of equipment	<u>120</u>	
	5 100	
Less expenses:		
Cost of goods sold	2 200	
Bad debts expense	30	
Insurance expense	20	
Interest expense	40	
Other expenses	1 450	
Depreciation expense	<u>200</u>	<u>3 940</u>
Profit before income tax	1 160	
Income tax expense	<u>490</u>	
Profit after tax	<u>670</u>	

Additional information (dollar amounts expressed in full units):

- a The equipment that was sold was originally purchased by Sandra Limited three years ago at a cost of \$300 000.
- b Land with an original value of \$240 000 was revalued to \$290 000.

Required:

Prepare a statement of cash flows for Sandra Limited for the year ended 30 June 2022.

PROBLEM 16.8

Cash flow from operations (data includes bad and doubtful debts)

The following information is taken from the accounts of Registration Ltd for the year ended 31 December 2022:

	\$
Accounts receivable, 1 January 2022	95 000
Accounts receivable, 31 December 2022	70 000
Allowance for doubtful debts, 1 January 2022	13 000
Allowance for doubtful debts, 31 December 2022	5 000
Inventory, 1 January 2022	90 000
Inventory, 31 December 2022	95 000
Accounts payable, 1 January 2022	70 000
Accounts payable, 31 December 2022	60 000
Credit sales	300 000
Cash sales	160 000
COGS	420 000
Bad debts expense	12 000

- 1 What was the amount of cash received from customers?
- 2 What was the amount of cash paid to suppliers?

PROBLEM 16.9

Interpreting a statement of cash flows

Outline the five most important things you learn about TLH Ltd from the following consolidated statement of cash flows for the year ended 30 June 2022.

	2022 \$m	2021 \$m
Cash flows from operating activities		
Net cash receipts in the course of operations	4 439	4 280
Payments to suppliers, service providers and employees	(2 357)	(2 213)
Other cash operating costs	(1 075)	(1 038)
Finance costs paid	(151)	(149)
Income tax paid	<u>(197)</u>	<u>(179)</u>
Net cash flows from operating activities	<u>659</u>	<u>701</u>
Cash flows from investing activities		
Payment for property, plant and equipment and intangibles	(593)	(408)
Proceeds from sale of property, plant and equipment and intangibles	<u>(47)</u>	<u>(1)</u>
Net cash flows used in investing activities	<u>(640)</u>	<u>(409)</u>
Cash flows from financing activities		
Proceeds from issue of shares	415	–
Repayments of short-term borrowings	(296)	(15)
Proceeds from long-term borrowings	1 090	–
Repayment of long-term borrowings	(1 063)	–
Dividends paid	<u>(278)</u>	<u>(304)</u>
Net cash flows used in financing activities	<u>(132)</u>	<u>(319)</u>
Net decrease in cash held	(115)	(29)
Cash at beginning of year	<u>261</u>	<u>291</u>
Cash at end of year	146	262

PROBLEM 16.10

Using the two years cash flow information presented below, outline the four most important things you learn about Emerald Ltd.

EMERALD LTD CASH FLOW STATEMENTS OVER TWO YEARS

	2022 \$000	2021 \$000
Cash flows from operating activities		
Cash receipts from customers	344	300
Cash payments to suppliers and employees	(415)	(290)
Interest paid	<u>(55)</u>	<u>(20)</u>
Net cash flow from operating activities	(126)	(10)
		>>

<<	Cash flows from investing activities	
Proceeds from sale of PPE	10	5
Payments for PPE	<u>(154)</u>	<u>(145)</u>
Net cash flow from investing activities		(144)
Cash flows from financing activities		
Proceeds from the issue of shares	0	160
Increase in borrowings	230	20
Dividends paid	<u>0</u>	<u>(35)</u>
Net cash flow from financing activities		<u>230</u>
Net increase (decrease) in cash held		<u>(40)</u>
Cash at the beginning of the year	<u>66</u>	<u>71</u>
Cash at the end of the year	26	66

PROBLEM 16.11

Simple cash flow statement – indirect method

Janali Limited prepares its statement of cash flows using the indirect method. Its balance sheet shows the following information:

	30/06/2022	30/06/2021
	\$	\$
Cash	81 000	87 000
Inventory	205 000	190 000
Equipment	270 000	260 000
Accumulated depreciation	<u>(75 000)</u>	<u>(70 000)</u>
	<u>481 000</u>	<u>467 000</u>
Accounts payable	130 000	142 000
Long-term loan	85 000	75 000
Share capital	230 000	230 000
Retained profits	<u>36 000</u>	<u>20 000</u>
	<u>481 000</u>	<u>467 000</u>

Additional information:

- a Net profit for the year ended 30 June 2022 was \$30 000.
- b No equipment was disposed of during the year ended 30 June 2022. No payments were made on the long-term loan.

Calculate each of the following amounts:

- 1 Net cash flow from operating activities
- 2 Net cash flow from investing activities
- 3 Net cash flow from financing activities.

PROBLEM 16.12

Comment on a company's cash management (indirect method)

Axiomatic Ltd's statement of cash flows for last year is shown. Provide observations about how the company managed its cash during the year.

**AXIOMATIC LTD
STATEMENT OF CASH FLOWS FOR LAST YEAR**

	\$	\$
Operating activities:		
Net profit for the year	94 900	
Add back non-cash expenses:		
Depreciation expense	216 800	
Amortisation expense	14 200	
Bad debt expense	<u>38 900</u>	269 900
Non-cash working capital changes:		
Increase in accounts receivable	(143 900)	
Increase in inventories	(71 600)	
Increase in accounts payable	<u>87 000</u>	<u>(128 500)</u>
Cash generated by operations	236 300	
Investing activities:		
Additions to noncurrent assets	(429 100)	
Proceeds on disposal of noncurrent assets	<u>27 700</u>	(401 400)
Financing activities:		
Short-term bank loan	30 000	
Additions to noncurrent debt	343 200	
Repayments of noncurrent debt	(316 000)	
Share capital issued	200 000	
Dividends paid during the year	<u>(40 000)</u>	<u>217 200</u>
Increase in cash for the year	52 100	
Cash, beginning of year	<u>(93 500)</u>	
Cash, end of year	<u>(41 400)</u>	

PROBLEM 16.13

Indirect method

The income statement and balance sheet provide the following information for 2022.

INCOME STATEMENT FOR YEAR ENDED 30 JUNE 2022

	\$	\$
Service revenue	60 000	
Expenses:		
Salaries	40 000	
Depreciation	15 000	
Loss on sale of equipment	2 000	
Other expenses	<u>7 500</u>	<u>64 500</u>
Net loss	(4 500)	>>

Partial balance sheet as at 30 June	2022	2021
Accounts receivable	10 000	26 000
Salaries payable	5 000	2 000
Other accrued expenses	1 000	5 000

- 1 Calculate cash flows for operations using the indirect method.
- 2 Why are the reasons for the difference between cash flow from operations and net income important to financial analysts?

PROBLEM 16.14

Reconstructing account balances from a statement of cash flows

**XYZ LIMITED
STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2022**

	Consolidated	
	2022	2021
Cash flows from operating activities		
Cash receipts from customers	389 863	188 739
Cash payments to suppliers and employees	(375 926)	(304 600)
Interest received	1 572	1 368
Interest paid	(21 514)	(13 245)
Income taxes paid	<u>(14 281)</u>	<u>(6 514)</u>
Net cash used in operating activities	<u>(20 286)</u>	<u>(134 252)</u>
Cash flows from investing activities		
Proceeds from sale of plant and equipment	375	719
Payments for plant and equipment	(12 284)	(14 545)
Purchase of controlled entity	<u>(942)</u>	<u>(4 609)</u>
Net cash used in investing activities	<u>(12 851)</u>	<u>(18 435)</u>
Cash flows from financing activities		
Proceeds from issue of shares	46 945	5 275
Proceeds from borrowings	112 500	161 387
Repayment of borrowings	(100 000)	–
Dividends paid	<u>(21 656)</u>	<u>(18 971)</u>
Net cash provided by financing activities	<u>37 789</u>	<u>147 691</u>
Net increase/(decrease) in cash held	4 652	(4 996)
Cash at the beginning of the financial year	<u>1 943</u>	<u>6 939</u>
Cash at the end of the financial year	<u>6 595</u>	<u>1 943</u>

Additional information:

- a Net profit after tax is \$25 270, which included a gain on the sale of plant and equipment of \$250 (on plant and equipment that cost \$2000).
- b There was no opening or closing balance in dividends payable.
- c Accounts receivable increased by \$20 000 during the year.
- d Interest payable at 30 June 2022 was \$2154, and at 30 June 2021 was \$3712.

Required:

- 1 How much would retained profits have increased or decreased during the year, assuming no transfers to or from reserves?
- 2 What were the company's sales for the year?
- 3 What was the book value of the plant and equipment sold?
- 4 What was the interest expense for the year?
- 5 Based only on the information given in the question, list two reasons why net profit would be higher than cash flow from operations.

PROBLEM 16.15*Preparation of a statement of cash flow (advanced)*

An income statement and a comparative balance sheet for Borachio Ltd are as follows:

BORACHIO LTD
COMPARATIVE BALANCE SHEET AS AT 30 JUNE 2022 AND 2021

	2022 \$000	2021 \$000
Cash	162	144
Accounts receivable	145	128
Allowance for doubtful debt	(16)	(12)
Inventory	175	190
Prepaid insurance	9	6
Long-term investments	205	163
Land	172	149
Equipment	449	437
Accumulated depreciation - equipment	<u>(214)</u>	<u>(149)</u>
Total assets	1 087	1 056
Accounts payable	103	63
Accrued expenses	27	11
Interest payable	9	9
Income tax payable	44	23
Bonds payable	100	250
Share capital	490	420
Retained earnings	<u>314</u>	<u>280</u>
Total liabilities and shareholders' equity	1 087	1 056

BORACHIO LTD
INCOME STATEMENT FOR THE YEAR ENDED 30 JUNE 2022

	\$'000	\$'000
Sales	1 520	
COGS		(1 110)
Gross profit		410
Operating expenses		
Bad debts expense	(15)	
Insurance expense	(9)	
Depreciation expense	(65)	
Other operating expenses	(85)	
Total operating expenses		(174)
		236
Other income:		
Dividends received	5	
Other expenses:		
Interest expense	(25)	
Loss on disposal of land	(18)	
		(38)
Income before income tax		198
Income tax		88
Net profit		110

The following additional information during the year was obtained from an examination of the ledger:

- a A parcel of land with an original cost of \$60 000 was sold.
- b All sales over the year are made on credit.

Required:

- 1 Prepare a statement of cash flows (direct method) for the year ended 30 June 2022.
- 2 Prepare a reconciliation statement (indirect method) for the year ended 30 June 2022.

PROBLEM 16.16

Ethics of cash flow manipulation

There is an interesting ethical issue behind the very reason that the statement of cash flows is thought by some people to have advantages over the income statement. The reason is that people are often mistrustful of the income statement because they feel its accrual accounting methods can be used to manipulate net profit as a measure of performance, and they think that the cash flow figures are more 'real'. For example, a company might claim large revenues, not yet collected, that make its revenue higher (via the entry DR accounts receivable, CR revenue). However, if the cash has not been collected, the increase in accounts receivable will be deducted from net profit on the statement of cash flows, and the lack of 'real' cash inflow will be apparent because cash from operations will be lower than would be expected from the profit number. Therefore, it is thought the statement of cash flows' cash from operations figure is more believable than net profit and will even, if it is very different from net profit, unmask manipulations of the net profit.

The ethical issue is that it is possible to manipulate the cash flow figures too. For example, a company might accelerate or delay receivables collections in order to change the cash flow figures – whether or not the net profit is also being manipulated. There may be a difference from manipulating net profit, however, because changing cash flow figures requires real actions that affect customers or suppliers or employees. Therefore, there are real consequences, such as irritating customers or having to offer inducements for early payment. Nevertheless, it can be done.

It seems that most people would feel that altering the accruals just to make net profit better (or worse, or smoother) is ethically questionable, even if it is understandable because of the way management is evaluated and rewarded. But is altering the cash flow ethically questionable? Is there an ethical problem if management decides to put pressure on customers to accelerate collections and improve the company's cash position? It sounds like good management, not like manipulation.

Suggest two or three ways, not included already, in which operating, investing or financing cash flows could be altered from their normal levels. For each, discuss whether, or under what conditions, you would think there is an ethical problem with such an alteration.

CASES

CASE 16A

Woolworths Limited

Refer to the extracts of the annual report of Woolworths Limited in this book's appendix. All questions relate to the consolidated accounts.

- 1 What are the main components of cash flows from operating activities?
- 2 What are the main components of cash flows from investing activities?
- 3 What are the main components of cash flows from financing activities?
- 4 What does the company define as cash and cash equivalents?
- 5 How does the cash flow statement relate back to the balance sheet?
- 6 List five key things you learn about this company from its statement of cash flows.

CASE 16B

Consolidated cash flow statement for Qantas Ltd

QANTAS GROUP

	Notes	2020 \$m	2019 (restated) ¹ \$m
CASH FLOWS FROM OPERATING ACTIVITIES			
Cash receipts from customers			
Cash receipts from customers		14 460	19 050
Cash payments to suppliers and employees (excluding cash payments to employees for redundancies and related costs and discretionary bonus payments to nonexecutive employees)		(12 870)	(15 425)
Cash generated from operations		1 590	3 625
Cash payments to employees for redundancies and related costs		(58)	(58)
Discretionary bonus payments to non-executive employees		(6)	(25)
Interest received		29	41
Interest paid (interest-bearing liabilities)		(146)	(161)
Interest paid (lease liabilities)	16(B)	(82)	(101)
Dividends received from investments accounted for under the equity method		15	11
Australian income taxes paid	9(D)	(255)	(156)
Foreign income taxes paid	9(D)	(4)	(12)
Net cash from operating activities	29	1 083	3 164

>>

<<	CASH FLOWS FROM INVESTING ACTIVITIES		
Payments for property, plant and equipment and intangible assets		(1 549)	(1 944)
Interest paid and capitalised on qualifying assets	8	(48)	(42)
Payments for investments held at fair value		(22)	(60)
Proceeds from disposal of property, plant and equipment		50	333
Proceeds from disposal of a controlled entity		-	139
Proceeds from disposal of shares in associate		-	11
Payments for investments accounted for under the equity method	(2)	-	-
Net cash used in investing activities		(1 571)	(1 563)
CASH FLOWS FROM FINANCING ACTIVITIES			
Payments for share buy-back	10(B)	(443)	(637)
Proceeds from share-issuance		1 342	-
Payments for treasury shares		(5)	(98)
Proceeds from interest-bearing liabilities	21(D)	2 155	1 137
Repayments of interest-bearing liabilities	21(D)	(625)	(733)
Repayments of lease liabilities	16(B)	(367)	(368)
Dividends paid to shareholders	10(A)	(204)	(363)
Aircraft lease refinancing		-	(88)
Net cash from/(used in) financing activities		1 853	(1 150)
Net increase in cash and cash equivalents held		1 365	451
Cash and cash equivalents at the beginning of the year		2 157	1 694
Effects of exchange rate changes on cash and cash equivalents		(2)	12
Cash and cash equivalents at the end of the year	21(A)	3 520	2 157

1. The Group adopted AASB 16 Leases effective 1 July 2019 using the full retrospective method of adoption and adopted the IFRIC agenda decision in relation to fair value hedges ("IFRIC Fair Value hedging agenda decision") retrospectively. The comparative period presented above has been restated accordingly. Refer to Note 38 for further information.

Qantas Annual Report 2020, p. 63. © Qantas Airways Limited.

- 1 What do you learn about Qantas from the statement of cash flows for the year ended 30 June 2020?
- 2 What are the major changes between the two years?

CASE 16C Interpreting the One.Tel Limited statement of cash flows

Shown as follows are the 1999 and 2000 cash flow statements for One.Tel Limited, a telecommunications company that was delisted in 2001.

	Consolidated	
	2000 \$m	1999 \$m
Cash flow from operating activities		
Receipts from customers	510.9	300.1
Payments to suppliers and employees	(684.8)	(328.1)
Interest received	16.9	1.9
Interest and other borrowing costs paid	(11.9)	(3.5)
Income tax refunded	-	0.7
Net cash used by operating activities	(168.9)	(28.9)

>>

<<

Cash flow from investing activities

Proceeds from sale of investments	–	1.6
Proceeds from sale of plant and equipment	–	19.2
Payment for plant and equipment	(87.5)	(34.0)
Purchase of licences	(525.6)	(9.5)
Purchase of controlled entities	–	(6.9)
Payment of deferred consideration	(1.8)	–
Loans provided to wholly owned entities	–	–
Loans provided to other parties	–	(2.6)
Net cash used by investing activities	(614.9)	(32.2)
Cash flow from financing activities		
Proceeds from issue of shares	818.5	280.3
Proceeds from borrowings	139.8	59.0
Finance lease principal repayments	(11.2)	(4.2)
Dividends paid	(1.8)	(2.5)
Share buyback	–	(106.4)
Net cash provided by financing activities	945.3	226.2
Net increase in cash held	161.5	165.1
Cash and cash equivalents at beginning of year	172.6	8.4
Exchange rate adjustment	1.6	(0.9)
Cash and cash equivalents at end of year	335.7	172.6

Source: One.Tel Limited.

- Outline what you can learn about One.Tel from the statement of cash flows.
- Which factors in the statement of cash flows indicate that the company would fail within one year, and which factors indicate they would not?

CASE 16D

Variations in the pattern of cash flows

The 2021 statement of cash flows for Telstra Limited is shown. Explain these changes in the pattern of cash flows between 2021 and 2020.

TELSTRA GROUP

	Note	Year ended 30 June	
		2021 \$m	2020 \$m
Cash flows from operating activities			
Receipts from customers (inclusive of goods and services tax (GST))		26 727	29 506
Payments to suppliers and employees (inclusive of GST)		(18 901)	(21 895)
Government grants received for operating activities		167	153
Net cash generated by operations		7 993	7 764
Income taxes paid	2.4	(762)	(754)
Net cash provided by operating activities	2.6	7 231	7 010
			>>

	Note	Year ended 30 June	
		2021 \$m	2020 \$m
Cash flows from investing activities			
Payments for property, plant and equipment		(2 079)	(2 341)
Payments for intangible assets		(1 061)	(1 101)
Capital expenditure (before investments)		(3 140)	(3 442)
Payments for shares in controlled entities (net of cash acquired)		(26)	-
Payments for equity accounted investments		(30)	(33)
Payments for other investments		(152)	(122)
Total capital expenditure (including investments)		(3 348)	(3 597)
Proceeds from sale of property, plant and equipment		154	258
Proceeds from sale and leaseback	3.2	291	18
Proceeds from sale of businesses and shares in controlled entities (net of cash disposed)		218	58
Proceeds from sale of equity accounted and other investments		147	15
Distributions received from equity accounted investments		20	83
Receipts for the principal portion of finance lease receivables		120	135
Government grants received for investing activities		36	28
Interest received		18	26
Net cash used in investing activities		(2 344)	(2 976)
Operating cash flows less investing cash flows			
		4 887	4 034
Cash flows from financing activities			
Proceeds from borrowings		2 308	5 476
Repayment of borrowings		(3 260)	(6 562)
Payment for the principal portion of lease liabilities	3.2	(706)	(993)
Purchase of shares for employee share plans		(39)	(22)
Finance costs paid		(613)	(812)
Dividends paid to non-controlling interests		(35)	(23)
Dividend paid to equity holders of Telstra Entity	4.2	(1 902)	(1 903)
Proceeds from the sale of units in a controlled trust		-	698
Other		11	3
Net cash used in financing activities		(4 236)	(4 138)
Net increase/(decrease) in cash and cash equivalents		651	(104)
Cash and cash equivalents at the beginning of the year		499	604
Effects of exchange rate changes on cash and cash equivalents		(25)	(1)
Cash and cash equivalents at the end of the year	2.6	1 125	499

Telstra Corporation Limited Annual Report 2021, p. 81. Reproduced with permission.

CASE 16E Interpreting a cash flow statement for two retailers

Extracts from the 2021 statement of cash flows from two Australian companies, Myer Holdings Limited and Harvey Norman Holdings Limited are given.

**MYER HOLDINGS LTD
CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE PERIOD ENDED 31 JULY 2021**

	Notes	2021 53 weeks \$m	2020 52 weeks \$m
Cash flows from operating activities			
Receipts from customers (inclusive of goods and services tax)		2 515.6	2 396.0
Payments to suppliers and employees (inclusive of goods and services tax)		(2,153.1)	(2,098.4)
		362.5	297.6
Other income		2.7	0.7
Interest paid		(95.0)	(98.6)
Tax received (paid)		6.8	(8.1)
Net cash inflow from operating activities	D2	277.0	191.6

Myer Holdings Limited, *Annual Report 2021*, p. 56.

**HARVEY NORMAN HOLDINGS LTD
STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2021**

	Note	June 2021 \$000	June 2020 \$000	Consolidated
Cash flows from operating activities				
Net receipts from franchisees		886 344	1 304 230	
Receipts from customers		2 984 441	2 461 539	
Payments to suppliers and employees		(2 984 050)	(2 471 564)	
Distributions received from joint ventures		9 332	8 385	
GST paid		(103 403)	(65 501)	
Interest received		5 496	8 142	
Interest and other costs of finance paid		(8 953)	(20 489)	
Interest paid on lease liabilities		(40 941)	(40 538)	
Income taxes paid		(206 595)	(128 967)	
Dividends received		2 198	1 727	
Net cash flows from operating activities	26(b)	543 869	1 056 964	

Harvey Norman Holdings Limited, *Annual Report 2021*, p. 85.

- 1 State what you learn from the two statements.
- 2 Which do you find to be more informative?

HOW'S YOUR UNDERSTANDING SOLUTIONS

16A \$150 000 + \$210 000 = \$360 000.

16B (i) Operating cash flow

(ii) Financing cash flow

(iii) Financing cash flow

(iv) Operating cash flow

(v) Operating cash flow

(vi) Investing cash flow

(vii) Financing cash flow

(viii) Financing cash flow

16C

		\$	\$
DR	Accounts receivable	100 000	
CR	Sales		100 000
DR	COGS	70 000	
CR	Inventory		70 000

16D Opening balance + Credit sales – Cash received from customers = Closing balance

\$100 000 + \$300 000 – Cash = \$180 000

Cash = \$220 000

16E Opening inventory + Purchases – COGS = Closing inventory

250 000 + P – 600 000 = 290 000

P = 640 000

\$130 000 + \$640 000 – amount paid to suppliers = \$190 000

Amount paid to suppliers = \$580 000

16F \$24 000 + Cash – \$69 000 = \$27 000

Cash = \$72 000

16G \$50 000 + \$200 000 – Cash = \$75 000

Cash = \$175 000

16H

		\$	\$
DR	Cash	80 000	
DR	Loss on sale	20 000	
DR	Accumulated depreciation	150 000	
CR	Equipment		250 000

16I \$31 000 + \$10 000 – \$2000 – \$15 000 + \$7000 – \$8000 = \$23 000.

16J

	Operating	Investing	Financing
(i)	Increase	No effect	No effect
(ii)	Increase	No effect	No effect
(iii)	Decrease	No effect	No effect
(iv)	No effect	Increase	No effect

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

1 The direct method

Cash received from customers	=	Sales + Decrease in debtors
	=	13 000 + 2000
	=	15 000
Cash paid to suppliers	=	COGS + Increase in inventory + Decrease in accounts payable
	=	6000 + 1800 + 3100
	=	10 900
Cash paid for operating expenses	=	2200
Income taxes paid	=	Income tax expense – Increase in income tax payable
	=	1100 – 600
	=	500

**JKL LIMITED
STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30 JUNE 2022**

	\$
Cash flows from operating activities	
Receipts from customers	
Payments to suppliers	(10 900)
Income tax paid	(500)
Operating expenses	<u>(2 200)</u>
Net cash provided by operating activities	1 400

2 The indirect method

Operating profit after tax	2 300
+ Non cash expenses (depreciation)	1 400
+ Decrease in accounts receivable	2 000
– Increase in inventory	(1 800)
– Decrease accounts payable and accrued expenses	(3 100)
+ Increase in taxes payable	600
= Cash flows from operating activities	1 400

PRACTICE PROBLEM B

1	Cash payments for purchases	=	COGS + Increase in inventory – Increase in accounts payable
		=	2 300 000 + 310 000 – 95 000
		=	2 515 000
2	Cash paid for income tax	=	Income tax expenses – Increase in taxes payable
		=	48 000 – 5500
		=	42 500
3	Cash receipts from customers	=	Sales – Increase in accounts receivable
		=	7 640 000 – 870 000
		=	6 770 000

>>

<<	4	Cash paid for wages	= Wages expense + Decrease in wages payable
			= 2 350 000 + 490 000
			= 2 840 000

PRACTICE PROBLEM C

TUT LTD
STATEMENT OF CASH FLOWS FOR YEAR ENDED 30 JUNE 2022

	\$000
Cash from operating activities	
Cash received from customers	522
Cash paid to suppliers and employees (210 + 45 + 132)	(387)
Income tax paid	<u>(70)</u>
Net cash flow from operating activities	<u>65</u>
Cash from investing activities	
Sale of motor vehicles	55
Purchase of motor vehicles	(110)
Purchase of equipment	<u>(130)</u>
Net cash flow from investing activities	<u>(185)</u>
Cash from financing activities	
Repayment of borrowings	(20)
Final dividend paid	(60)
Proceeds from share issue	<u>170</u>
Net cash flow from financing activities	<u>90</u>
Net cash outflow	<u>(30)</u>
Cash opening balance	<u>20</u>
Cash closing balance (i.e. overdraft under current liabilities)	<u>(10)</u>

Reconciliation of net cash provided by operating activities to operating profit after income tax:

	\$000
Operating profit after income tax	56
Depreciation expense (38 + 50)	88
Loss on sale of motor vehicles	25
Change in assets and liabilities:	
Increase in accounts receivable	(38)
Decrease in inventory	20
Decrease in accounts payable	(60)
Decrease in income tax payable	<u>(26)</u>
Net cash provided by operating activities	65

Workings:

Accounts receivable			
Bal	105	Cash*	522
Sales	<u>560</u>		
Bal	143		
Inventory			
Bal	220	COGS	170
Purchases*	<u>150</u>		
	370		
Prepaid insurance			
Bal	10	Insurance expense	45
Cash*	<u>45</u>		
	10		
Accounts payable			
Cash*	210	Bal	265
		Purchases	<u>150</u>
		Bal	205
Equipment			
Bal	450		
Borrowings	60		
Cash*	<u>130</u>		
	640		
Accum. depn - equipment			
		Bal	150
		Depreciation expense	<u>50</u>
			200
Motor vehicles			
Bal	520	Disposal	145
Cash*	<u>110</u>		
Bal	485		
Accum. depn - motor vehicles			
Disposal	65	Bal	210
		Depreciation expense	<u>38</u>
		Bal	183

Borrowings		
Cash*	20	Bal
		Equipment
		<u>60</u>
		Bal
		470
Asset revaluation reserve		
		Bal
		Land
		<u>80</u>
		210

*Balancing figures

Measuring and managing organisational performance

17



ON COMPLETION OF THIS CHAPTER, YOU SHOULD BE ABLE TO:

- LO1** describe the purpose of performance management (17.1)
- LO2** explain the DuPont system of ratio analysis (17.2)
- LO3** apply integrative financial ratio analysis to analyse and evaluate an organisation's financial performance (17.3)
- LO4** describe the role of non-financial performance measures and the types of information they capture (17.4)
- LO5** identify the key features of performance measures (17.5)
- LO6** describe the purpose of the balanced scorecard (BSC) framework and its components (17.6)
- LO7** explain how the BSC framework can be adapted for use in for-purpose and public-sector enterprises, and in sustainability performance management (17.6)
- LO8** identify factors to effectively implement the BSC framework (17.6)
- LO9** describe an analytics mindset and how it can inform organisational performance management (17.7)
- LO10** explain how financial and non-financial performance measures can be used to motivate managers (17.8)

CHAPTER OVERVIEW

With your understanding of the financial statements, you are now ready to consider how the financial ratios analysed based on these statements connect together. This chapter begins by introducing you to integrative financial ratio analysis, which will enable you to tell the story of the organisation that these financial statements communicate by linking the ratios together.

The chapter then focuses on how we combine financial performance measures with non-financial performance measures to manage organisational performance. Non-financial performance measures contribute to the organisation's narrative by providing information on how the organisation is delivering its strategy. Here we use the balanced scorecard framework to connect strategy with organisational performance. Bringing together financial and non-financial performance information enables future organisational performance to be managed.

Accounting professionals with expertise in measuring and reporting information are well-equipped to play a vital role here. This point was made in Chapter 9 as we considered the financial and non-financial measures of environmental, social and governance performance presented in sustainability reports. Importantly, in the

current chapter, the ‘big picture’ understanding of the organisation that accounting professionals develop from measuring and reporting financial and non-financial information enables them to play a valuable role in organisational decision making.

We conclude the chapter by looking at the role of data analytics in performance management. Specifically, we consider the analytics mindset that can be adopted by accounting professionals to access the business problem-solving insights this analytic approach offers.

17.1 What is performance management?

Performance management is the process of measuring, monitoring and evaluating whether the behaviours and activities of an organisation are successfully delivering its strategic goals and objectives, as evidenced by the outcomes achieved. If these outcomes are not being achieved, performance management involves re-aligning employees, resources and systems to deliver this strategy. Accounting professionals and managers select and measure indicators known as performance measures to enable progress towards the strategic goals and objectives established for the organisation to be managed. Performance measures can provide both financial and non-financial performance information.

LO1

The financial statements provide information on historical financial performance, but how does this financial information link together to tell shareholders the story of the organisation and its performance? Various financial profitability ratios considered in Chapter 6 connect the balance sheet and the income statement to explain the organisation's financial performance. We consider this aspect of financial performance management in more detail next.

Non-financial performance is also measured to provide a more detailed narrative of the organisation that explains how future financial performance is expected to be achieved. Organisations are part of a business system. Non-financial performance information captures the organisation's interactions with customers, suppliers, employees and other key stakeholders. In doing so, you will begin to develop an understanding of how the organisation is performing within this business system.

It is important to ensure that the financial and non-financial performance measures being monitored are aligned with the strategy of the organisation. This strategy is what distinguishes the organisation from its competitors, enabling it to obtain a sustainable competitive advantage in the business system. Ensuring this alignment between business strategy and performance measures enables the effective monitoring and management of organisational performance.

17.2 Integrative financial ratio analysis

LO2

With information about an organisation and knowledge of the purpose of its financial analysis, the long list of ratios introduced in Chapter 6 can be used to reveal many things about an organisation. Yet it may not be obvious how to pull all the information together to form an overall picture of the organisation's performance. It is likely clear to you whether the organisation is performing better this year than in the prior year, but how might we fit the ratios together systematically to understand the key financial components of this improvement? We use the fact that the ratios are all calculated based on the same financial statement figures and connect them to each other. We started to do this in Chapter 6 by showing the link between ROA and ROE, as well as the components of ROA.

Here we introduce a system that is used to connect these ratios together and conduct integrative financial ratio analysis. This is known as the DuPont system. The name is used because DuPont was the first company to formally integrate the system into its organisational and control system back in the 1920s.

The DuPont system uses the idea of leverage. This is an important objective and consequence of borrowing money, which can then be used to generate returns. Leverage, also called trading on the equity, financial leverage and gearing, works like this:

- 1 Audrey Hughes wants to invest \$15 000 in a real-estate project
- 2 Hughes has \$5000 available in personal funds
- 3 Hughes borrows \$10 000 from the bank at 11 per cent interest
- 4 Hughes invests the total \$15 000 in the project and receives an annual return of \$2100
- 5 the project's return is 14 per cent before tax (\$2100/\$15 000)

- 6 out of that, Hughes pays the bank interest (11 per cent of \$10 000 = \$1100)
- 7 Hughes keeps the remainder (\$2100 – \$1100 = \$1000)
- 8 Hughes' before-tax return on the equity invested is 20 per cent (\$1000/\$5000).

Not bad! The project returns 14 per cent, but Hughes gets 20 per cent on the equity invested. The reason is that Hughes has borrowed at 11 per cent but has used the borrowed funds to earn 14 per cent. The extra 3 per cent return on the borrowed funds is Hughes' to keep in return for taking the risk of investing in the project:

- overall return = 14 per cent on \$15 000 = \$2100
- paid to the bank = 11 per cent on \$10 000 = \$1100
- kept by Hughes: 14 per cent on \$5000 own funds + 3 per cent on \$10 000 borrowed funds
- Hughes' return = the 14 per cent (\$700) + the 3 per cent (\$300) = \$1000, which is 20 per cent of the \$5000.

Hughes has benefited from leverage: borrowing money to earn money.

Leverage is a good way to increase your return, as long as you can ensure that the project's total rate of return is greater than your borrowing cost. It is a double-edged sword, though, because leverage can hit you hard if returns are low or negative.

Suppose Hughes' real estate project returns only 7 per cent. Then look what happens:

- overall return = 7 per cent on \$15 000 = \$1050
- paid to the bank = 11 per cent on \$10 000 = \$1100
- kept by Hughes: 7 per cent on own funds minus 4 per cent on \$10 000 borrowed funds
- Hughes' return = 7 per cent (\$350) – 4 per cent (\$400) = -\$50, which is -1 per cent of \$5000.

Hughes has been hurt by leverage.

In this case, Hughes loses on every dollar borrowed, because the project returns less than the cost of borrowing. It's not such a great deal any more! Hughes is losing 1 per cent on the equity invested, but if just that equity had been invested, with no borrowing, Hughes would have made 7 per cent, the project's return. Leverage is now hurting, not helping.

Now that you have this basic understanding of leverage, we will return to the DuPont system. The relationships among the various ratios and how they connect to the financial statements are shown in Figure 17.1. Note that for any money borrowed, if the interest expense is less than the return on the money borrowed (revenues – expenses other than interest) the profit after tax goes up. In this case, the more that is borrowed, the higher ROE goes.

Central to the DuPont system is the relationship you first encountered in Chapter 6 between the ROE ratio and its two component ratios, ROA and leverage. This relationship can be seen in the following equation:

$$\begin{array}{rcl} \text{ROE} & = & \text{ROA} \times \text{Leverage} \\ \frac{\text{Operating profit after tax}}{\text{Shareholders' equity}} & = & \frac{\text{Operating profit after tax}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Shareholders' equity}} \end{array}$$

Notice that, for the relationship described, the measure of profit used in the return on assets (ROA) formula is operating profit after tax. This is used because it is consistent with the profit measure used for ROE. The equation shows that ROE can be explained by two factors: ROA and leverage. Both these factors can, in turn, be explained by the factors to the right of them in Figure 17.1. When analysing changes in ROE, these changes can be explained by looking at the changes in either ROA and/or changes in leverage. To delve further in the analysis, if there is a change in ROA, this can be the result of a change in profit margin and/or asset turnover.

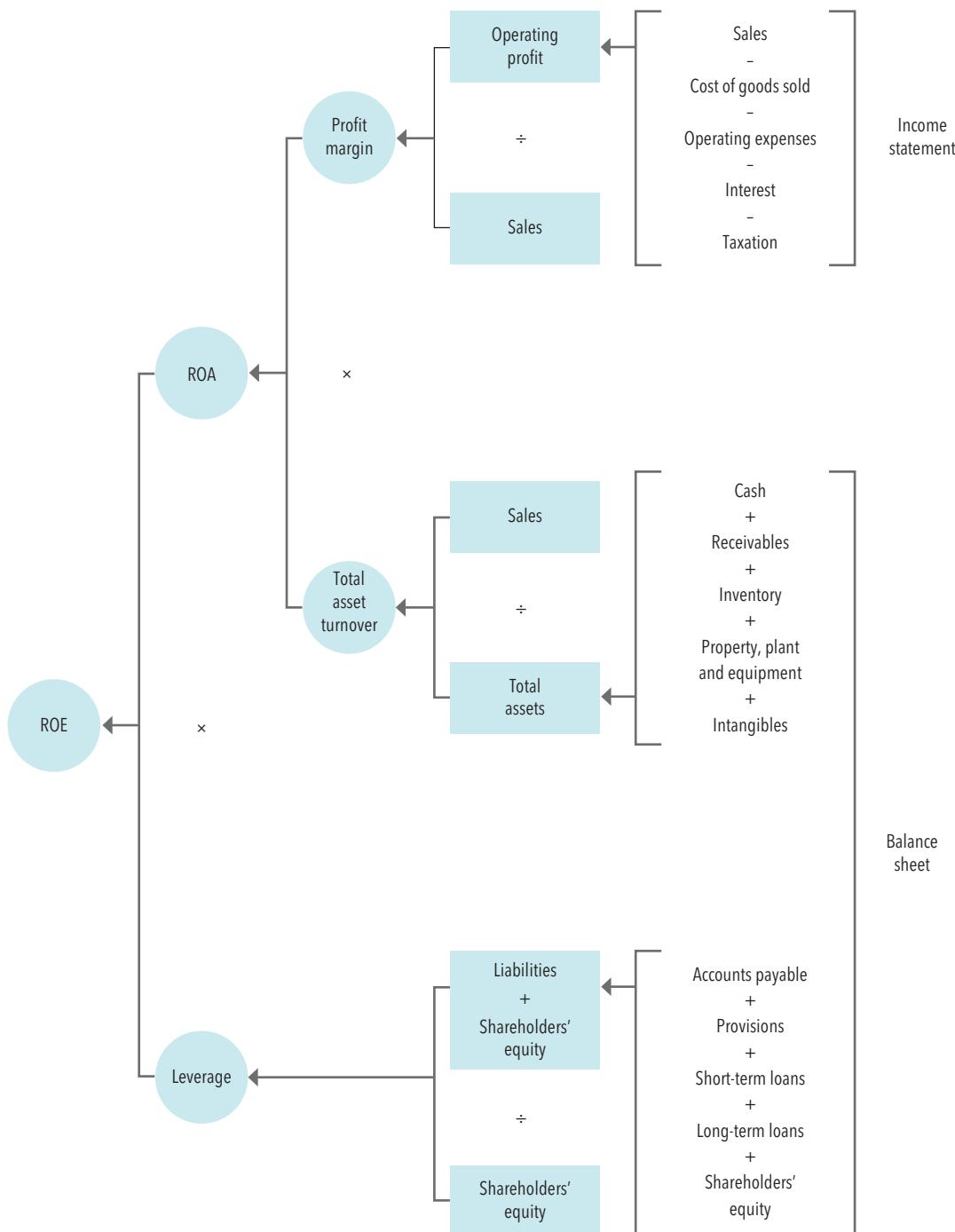


FIGURE 17.1 DuPont system of ratio analysis

17.3 Harvey Norman Holdings Limited: an example company

To help you see how integrative financial ratio analysis works, we will now illustrate this using the financial statements of Harvey Norman Holdings Limited (hereafter, Harvey Norman). This is an organisation with which Australians and New Zealanders will be familiar. You will find that with the accounting knowledge you

LO3

already have and the techniques outlined in this book, you can understand a lot about an organisation such as Harvey Norman.

Harvey Norman is an integrated retail, franchise and property organisation. Its operations are primarily based in Australia, but also extend across eight countries globally. As shown in Note 2.2 of the annual report (Segment Disclosures from Continuing Operations), in addition to other operating segments and various support functions, it has three main operating groups:

- retail – offshore company-operated retail stores in New Zealand, Ireland and Northern Ireland, Singapore, Malaysia, Slovenia and Croatia
- franchise – franchises granted to proprietors across Australia, under the brand names of Harvey Norman, Domayne and Joyce Mayne
- property – retail property, comprising both freehold and leasehold property portfolios.

The company closes its books on 30 June each year. In this section, we will be looking at Harvey Norman's 2021 and 2020 results. As such, before you go further, please go to the company's website (<https://www.harveynormanholdings.com.au/s/Annual-Report-to-Shareholders-2021.pdf>) and locate the complete Annual Report 2021, then read its latest Chairman and CEO's Report. This will give you some background to the company and some insights into how management presented the performance of the company to shareholders in 2021. Within the 2021 financial statements, find:

- the 2021 net profit number (called profit after tax, \$846.845 million)
- the 30 June 2021 retained earnings (\$2879.511 million)
- cash flow from operating activities for 2021 (\$543.869 million)
- the 30 June 2021 total assets (\$6672.934 million), total liabilities (\$2779.915 million) and shareholders' equity (\$3893.019 million).

As you familiarise yourself with the general content and format of the financial statements, here are a few things to keep in mind:

- The financial statements are consolidated because Harvey Norman is really a group of companies.
- Harvey Norman provides figures for the prior year, 2020. We'll make extensive use of the prior-year figures to help you understand the 2021 figures.
- In the auditors' report, the auditors state their opinion that the financial statements, notes and additional disclosures give a true and fair view of the financial position as at 30 June 2021 and the profit and performance for the year ended 30 June 2021.

Financial statement ratio analysis for Harvey Norman

Let's turn now to consider how we use ratios to analyse the financial statements. The various kinds of ratios that can be used to analyse a company's financial performance and position are outlined in the following pages. (There are more ratios that could be calculated, but this is a meaningful set to start with for most types of companies. Often other ratios that could be calculated are industry-specific and you should research those if you are focused on analysing a particular industry.) Each ratio is illustrated by showing how it is calculated from Harvey Norman's 2021 financial statements. Some interpretive and comparative comments are made as illustrations, but the main purpose is to see how we use integrative financial ratio analysis to connect these ratios.

Take a few minutes to revise the calculations of key ratios outlined in Chapter 6. Exhibit 6.1 provided a summary of the ratios and the calculations we will use here. You will recall, the ratios are categorised as profitability ratios, activity ratios, liquidity ratios and financial structure ratios. Most figures in the following analysis are given in \$000, as they are in Harvey Norman's financial statements. The ratios are calculated here to two decimal places. They could be done to more decimal places, but that would be false accuracy, because the ratios depend on all sorts of judgements and estimates made in assembling the financial statements and, therefore, should not be thought of as precise quantities, but rather as indicators.

For many of the illustrative examples, we will calculate the ratios using both the profit/loss for the period from continuing operations and total profit/loss for the period (which includes the discontinued operations). The difference is that the former focuses on the organisation's core operations, whereas the latter reflects all its operations, including those that are discontinued. Discontinued operations refers to the parts of the organisation's core business that have been divested or shut down. To aid comparability where possible, our comments will be on comparing the ratios based on continuing operations.

Profitability ratios

Profitability ratios analyse the performance of the organisation by comparing various measures of profit (for example, earnings before interest and tax, or profit after tax) in the numerator with some base (for example, total shareholders' equity, total assets or total sales) in the denominator. These ratios allow you to evaluate the organisation's ability to generate profit relative to the particular base.

RETURN ON EQUITY (ROE)

For Harvey Norman, using profit after tax for the period, ROE (based on year-end equity) for the last two years has been:

$$\begin{aligned}\$846\ 845/\$3\ 893\ 019 &= 21.75\% \text{ (for 2021)} \\ \$486\ 023/\$3\ 477\ 325 &= 13.98\% \text{ (for 2020)}\end{aligned}$$

You can see that there has been a large increase in ROE from 13.98 to 21.75 per cent. Over the past decade, Harvey Norman has had an average ROE of 12.36%, which would be considered pretty strong for many other Australian companies. You can further understand the change in the ratio by looking at its components. The numerator has increased from \$486.023 million to \$846.845 million. The denominator has also increased at a significant rate from \$3477.325 million to \$3893.019 million, as per the last line in the balance sheet (total equity) of Harvey Norman. The main change in total equity is the increase in retained earnings between 2020 and 2021. Recall that retained earnings comprises all profits made by the organisation in previous years, less dividends declared to shareholders.

RETURN ON ASSETS (ROA)

For Harvey Norman, using profit after tax for the period and year-end total assets, ROA for the last two years has been:

$$\begin{aligned}\$846\ 845/\$6\ 672\ 934 &= 12.69\% \text{ (for 2021)} \\ \$486\ 023/\$5\ 828\ 602 &= 8.34\% \text{ (for 2020)}\end{aligned}$$

For Harvey Norman, alternative ROA is also calculated using earnings before interest and tax (EBIT) and year-end total assets. Alternative ROA for the last two years has been:

$$\begin{aligned}\$1\ 232\ 742/\$6\ 672\ 934 &= 18.47\% \text{ (for 2021)} \\ \$721\ 082/\$5\ 828\ 602 &= 12.37\% \text{ (for 2020)}\end{aligned}$$

Note that both the ROA and the alternative ROA ratios have increased from 2020 to 2021, indicating that the company is earning a higher return on the assets under its control.

Now, let's recall the DuPont formula from section 17.2:

$$\text{ROE} = \text{ROA} \times \text{Leverage}$$

Here, leverage provides the link between changes in ROE and changes in ROA from 2020 to 2021 for Harvey Norman. For Harvey Norman, using year-end total assets and year-end equity, the leverage for the last two years has been:

$$\begin{aligned}\$6\ 672\ 934/\$3\ 893\ 019 &= 1.71 \text{ times (for 2021)} \\ \$5\ 828\ 602/\$3\ 477\ 325 &= 1.68 \text{ times (for 2020)}\end{aligned}$$

As per the ratios calculated for Harvey Norman, the relationship is as follows for 2020 and 2021 (using profit after tax):

	ROE	=	ROA	×	Leverage
2021	21.75	=	12.69	×	1.71
2020	13.98	=	8.34	×	1.68

Note: Rounding errors will occur.

In this case, there has been a large increase in ROA and leverage has increased by a small amount, with the overall impact being a significant increase in ROE.

PROFIT MARGIN

For Harvey Norman, the profit margins for 2021 and 2020 can be calculated as shown. Revenue from the sale of products to customers is provided in the income statement.

$$\begin{aligned}\$846\ 845/\$2\ 768\ 328 &= 30.59\% \text{ (for 2021)} \\ \$486\ 023/\$2\ 294\ 913 &= 21.18\% \text{ (for 2020)}\end{aligned}$$

An alternative version of profit margin can be calculated by dividing EBIT by sales revenue. For Harvey Norman, this would result in the following ratios:

$$\begin{aligned}\$1\ 232\ 742/\$2\ 768\ 328 &= 44.53\% \text{ (for 2021)} \\ \$721\ 082/\$2\ 294\ 913 &= 31.42\% \text{ (for 2020)}\end{aligned}$$

The various versions of the discussed ratios all indicate that profit margin has improved from 2020 to 2021. The use of EBIT/sales is common in practice as both the numerator and denominator are under management's control. For Harvey Norman, an increase from 31.42 per cent to 44.53 per cent is substantial. It is important to note that revenue from the sale of products to customers has been used in the denominator. Given the substantial revenues received from franchisees, it is also meaningful to calculate this ratio including those revenues in the denominator, wherein the profit margin improvement remains significant.

GROSS MARGIN

For Harvey Norman, gross margin is calculated as follows:

$$\begin{aligned}\$929\ 963/\$2\ 768\ 328 &= 33.59\% \text{ (for 2021)} \\ \$739\ 642/\$2\ 294\ 913 &= 32.23\% \text{ (for 2020)}\end{aligned}$$

Gross margin ratios will depend on the difference between the price at which goods are sold and the cost of the goods being sold. Gross margin has increased from 2020 to 2021. This partly explains the improvement in the profit margin; that is, an increase in a profit margin is either due to a better gross margin ratio or a fall in expenses as a percentage of total sales. In the case of Harvey Norman, both factors have contributed to their substantial profit margin improvement.

EARNINGS PER SHARE

For Harvey Norman, the earnings per share is shown on the income statements for 2021 and 2020 as 67.53 cents per share and 39.19 cents per share, respectively. The calculation of earnings per share is shown in note 6 of Harvey Norman's financial report.

PRICE-TO-EARNINGS RATIO

For Harvey Norman, the ordinary shares had a closing price on the Australian Securities Exchange of \$5.48 in the year ended 30 June 2021 and \$3.54 in the year ended 30 June 2020. The closing PE ratio was therefore 8.11 times for 2021 (\$5.48 divided by \$0.6753) and 9.03 times for 2020 (\$3.54 divided by \$0.3919). Because

PE changes as share prices change, with each announcement of an EPS number, it can be monitored regularly to track changes in the market's expectations, particularly changes relative to other companies' PEs.

DIVIDEND PAYOUT RATIO

For Harvey Norman, the income statement indicates that dividends were \$0.35 per share in 2021 and EPS was \$0.6753, so the dividend payout ratio for 2021 was 51.83 per cent (0.35 divided by 0.6753); that is, Harvey Norman paid out about 52 per cent of its profit in dividends to its shareholders in 2021. This is slightly lower than the 61.24% ratio in 2020.

Activity (turnover) ratios

Activity ratios analyse the efficiency of the organisation's operations, with regard to its use of available resources. Asset turnover should be considered in combination with the profit margin ratio to understand what is driving return on asset performance, as you will see for Harvey Norman.

You can also consider these activity ratios in combination to evaluate how efficiently the organisation is managing its working capital. For example, if the organisation has days in inventory of 60, days in debtors of 40 and it pays its accounts payable in 20 days, then it will incur a working capital financing cost, whereby it pays interest on working capital for 80 days (that is, $60 + 40 - 20$).

TOTAL ASSET TURNOVER

Harvey Norman's total asset turnover ratio was 0.41 times in 2021 (\$2768.328 million divided by \$6672.934 million) and 0.39 times in 2020 (\$2294.913 million divided by \$5828.602 million). Turnover increased in 2021 because sales to customers increased relatively more than total assets. Therefore, the company is getting more sales out of each dollar of assets.

As we know from Chapter 6, the asset turnover ratio should be considered together with the profit margin ratio and the return on assets ratio, that is:

$$\begin{aligned} \text{ROE} &= \text{Profit margin} \times \text{Asset turnover} \\ \frac{\text{Net profit}}{\text{Total orders}} &= \frac{\text{Net profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} \end{aligned}$$

The calculations for Harvey Norman using profit after tax are as follows.

	Return on assets	=	Profit margin	×	Asset turnover
2021	846 845	=	846 845	×	2 768 328
	6 672 934	=	2 768 328	×	6 672 934
2020	12.69%	=	30.59%	×	0.41 times
	486 023	=	486 023	×	2 294 913
	5 828 602	=	2 294 913	×	5 828 602
	8.34%	=	21.18%	×	0.39 times

Note: Rounding errors will occur.

This shows that the increase in both asset turnover (0.39 to 0.41) and profit margin (21.18 to 30.59) has led to the increase in ROA. Similarly, we could do the previous analysis using the alternative ROA and alternative profit margin (which uses EBIT rather than OPAT in the calculations).

INVENTORY TURNOVER

For Harvey Norman, inventories were \$479.093 million for 2021, and \$391.984 million for 2020. These result in turnovers relative to COGS of 3.84 times for 2021 (\$1838.365 million divided by \$479.093 million) and 3.97 times for 2020 (\$1555.271 million divided by \$391.984 million).

For Harvey Norman, converting the inventory turnover ratios to measure how long, in days, inventory is held on average gives us 95.05 days (365 divided by 3.84) and 91.94 days (365 divided by 3.97) for 2021 and 2020, respectively. This small increase in days in inventory indicates Harvey Norman turned over the inventory at a slightly slower rate in 2021 than 2020. That is, inventory is staying in the stores for more time. We note here that Harvey Norman has supported franchisees in increasing inventory reserves during the pandemic to address supply chain disruptions experienced during this period. It also increased inventory levels in company-operated stores to satisfy strong sales growth there.

DEBTORS TURNOVER

As we do not know the percentage of Harvey Norman's sales that are on credit, calculation of the accounts receivable turnover ratio will be rather uninformative. Not all ratios are important for all companies. For example, as Harvey Norman is mainly a durable household goods retailer selling furniture, bedding, small and major appliances and information technology products to consumers, a large percentage of sales are cash sales (or sales made on credit card where cash is likely to be received very quickly for a large company). While consumer credit financing is available to consumers, Harvey Norman generates a return on this particular form of sale.

Liquidity ratios

Liquidity ratios analyse the short-term financial position of the organisation by comparing its assets that can be converted into cash with its immediate obligations requiring payment in the ordinary course of business. These ratios enable you to evaluate the organisation's ability to meet its current debt obligations.

CURRENT RATIO

Harvey Norman's current ratio was 1.51 times at the end of 2021 (\$1726.576 million divided by \$1145.061 million) and 1.65 times at the end of 2020 (\$1298.331 million divided by \$785.444 million). As can be seen here, current assets is greater than current liabilities, enabling Harvey Norman to cover its liabilities over the short-term.

QUICK RATIO

The quick ratio for Harvey Norman would be \$1195.008 million, divided by \$1145.061 million = 1.04 times. While this ratio is particularly useful for companies that cannot convert inventory into cash quickly if necessary, this is not normally the case for retail companies. As a result, the quick ratio normally has little significance for retailers such as Harvey Norman.

INTEREST COVERAGE RATIO

For Harvey Norman, net interest expense (financing costs) is shown in note 2. The interest coverage ratio, calculated by dividing earnings before interest and tax by net interest expense is a very healthy 24.55 times in 2021 (\$1232.742 million divided by \$50.213 million) and 12.06 times in 2020 (\$721.082 million divided by \$59.794 million).

Financial structure ratios

Financial structure ratios analyse the relative proportion of debt and equity that the organisation uses to finance its operations. These ratios equip you to evaluate the strength of the organisation's financial structure.

DEBT-TO-EQUITY RATIO

Harvey Norman's balance sheet makes this calculation straightforward, by totalling both liabilities and shareholders' equity. Thus, the ratio for 2021 is 0.71 times (\$2779.915 million divided by \$3893.019 million) and for 2020 is 0.68 times (\$2351.277 million divided by \$3477.325 million). These ratios show that the company relies on equity more than on debt, but that its relative reliance on debt increased during 2021.

The 2021 annual report tells us that this change primarily occurred to finance the purchase and refurbishment of Australian freehold investment properties during this period, as shown on the balance sheet.

DEBT-TO-ASSETS RATIO

For Harvey Norman, this ratio equals 41.66 per cent (\$2779.915 million divided by \$6672.934 million) for 2021 and 40.34 per cent (\$2351.277 million divided by \$5828.602 million) for 2020. Consistent with the debt-to-equity ratio, this ratio again shows assets are financed more by equity than debt.

LEVERAGE RATIO

For Harvey Norman, the leverage ratio was 1.71 times (\$6672.934 million divided by \$3893.019 million) in 2021 and 1.68 times (\$5828.602 million divided by \$3477.325 million) in 2020. Again, this shows a small increase in the relative reliance on debt during 2021.

You should note that these three financial structure ratios will be highly correlated, as they all use two components from the Balance Sheet equation: Assets + Liabilities = Shareholders' equity. The ratios are all used in practice, depending on the need of the user, but generally it is only necessary to calculate one of these to gain the financial structure insights you need.

SUMMARY

These ratios provide a quick method of analysing the performance of Harvey Norman over this two-year time period. Primarily, Harvey Norman's 2021 results are driven by strong sales growth. At the same time, there have been some cost efficiencies achieved, and an improvement in gross margin. The combination of strong sales growth and supply chain disruptions due to the COVID-19 pandemic has resulted in increased asset levels, particularly for inventory and property, plant and equipment. The latter, in particular has required a slight increase in Harvey Norman's use of debt financing. This is reflected in small changes in their financial structure ratios.

Finally, Harvey Norman also includes measures in their annual report relating to the performance of franchisees; for example, aggregated headline franchisee sales revenue of \$6.952 billion. This is useful information for investors, given that the revenue Harvey Norman receives from franchisees forms a significant component of total revenue. It is important to note though, that franchisees' own sales do not form part of the consolidated financial statements of Harvey Norman.



HOW'S YOUR UNDERSTANDING?

17A How well did Harvey Norman perform in 2021 compared with 2020?

17B With which companies might Harvey Norman compare its financial performance?

17.4 What about non-financial performance measures?

To this point, we have focused on an organisation's financial statements and the analysis we conduct using the financial information provided. As you have seen with Harvey Norman, financial information tells us about an organisation's performance after the fact, that is, its historical performance. For an organisation to successfully implement and deliver its strategy, most organisations use a broader set of performance measures that include both financial and non-financial performance measures. Non-financial performance measures express

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performance in quantifiable units other than dollars. They are sometimes referred to as operational measures, as they enable managers to monitor *how* the organisation is delivering its strategy by measuring the performance of its operational activities.

Non-financial performance measures are vital for managing the performance of both business units within an organisation and the individual managers of those business units. Without this information, we can only monitor whether the organisation is achieving its planned outcomes. Whereas with non-financial performance information, we can monitor how managers are behaving and the activities in which the organisation is engaged. For example, if revenue has fallen for the year, it may not be clear from the financial statements what has caused the decline. Measures such as customer satisfaction, perceived product quality, on-time deliveries, change in market share, and number of new customers help to understand whether we are failing to acquire new customers or losing current customers, and whether the decline is due to limited product availability, dissatisfied customers purchasing less of a poor-quality product or other factors. As you can see, non-financial performance measures help us to understand why a financial outcome has (or has not) been achieved, that is, what is causing a change in financial performance. They also provide guidance for the future on how to improve or maintain performance.

So what types of non-financial performance measures might an organisation report internally? Assume the organisation wants to measure the quality of its products or services. This may be directly measured within the organisation using metrics, such as percentage defect rate for a manufacturer, customer service lead time for a service provider, or on-time departures for an airline. This can also be measured externally, based on the perceptions of an organisation's customers obtained from customer survey ratings, customer satisfaction scores or net promoter scores. Non-financial performance measures can also capture the innovation and improvement activities of an organisation, such as the rate at which new technologies are implemented or average number of days training provided to employees. They can also include measures of organisational culture, stability and progress, such as employee satisfaction and wellbeing, workplace safety incidents, employee retention rates and workplace demographic profiles. As you saw in Chapter 9, Qantas reports a set of financial and non-financial metrics on its website. Exhibit 9.2 showed their non-financial performance metrics relating to the environment. In Exhibit 17.1 you can see some of the other categories of performance metrics that Qantas reports publicly.

EXHIBIT 17.1**QANTAS GROUP PERFORMANCE METRICS****CUSTOMER**

Metric	Unit	FY21	FY20	FY19
On-time performance	%	85.5	76.6	79.2
Brand preference	%	68	71	71
Domestic Net Promotor Score – Gap over major competitor	Score	N/A	N/A	14.9

SAFETY

Metric	Unit	FY21	FY20	FY19
Total Recordable Injury Frequency Rate	TRIFR	20.9	21.8	24.4
Lost Work Case Frequency Rate	LWCFR	6.5	8.8	9.3
Fatalities	#	0	0	0



COMMUNITY				
Metric	Unit	FY21	FY20	FY19
Total supplier spend	\$M	4 227	9 790	12 571
Australian supplier spend	\$M	2 782	5 820	7 800
Aboriginal and Torres Strait Islander spend	\$M	3	3	2.2
Total community partnerships investment	\$M	0.2	4.4	3.1
Proportion of Aboriginal and Torres Strait Islander investment	%	31.2	19.1	35.0
Total Change for Good UNICEF donations	\$M	0.1	1.2	1.9
Total StarKids World Vision donations	\$M	0.3	0.8	1.0
PEOPLE				
Metric	Unit	FY21	FY20	FY19
Number of full-time equivalent employees	#	20 640	28 957	29 055
Percentage of employees under a collective bargaining agreement	%	85.8	83.3	79.8
Voluntary employee turnover	%	11.2	4.3	5.5
Percentage of women	%	43.6	42.5	42.0
Percentage of women in senior positions	%	38.1	37.0	35.9
Percentage of women on the Qantas Board	%	40.0	40.0	36.4
Number of women on the Qantas Board	#	4	4	4
Percentage of women recruited into the graduate program	%	N/A	47.5	34.4
Number of Aboriginal and Torres Strait Island employees	#	198	329	408

Qantas Group, Excerpt from Financial and Non-financial Metrics © Qantas Airways Limited.

It is important for organisations to measure and manage a set of performance measures that comprises both financial and non-financial information. As we have considered here, non-financial performance measures allow us to monitor how we are delivering the organisation's strategy, but we then need financial performance measures to tell us whether (or not) the organisation is succeeding in delivery its strategy as evidenced by the financial outcomes achieved.



HOW'S YOUR UNDERSTANDING?

- 17C** Select a company with which you are familiar, such as Transurban or one of the big four banks (ANZ, Commonwealth Bank, NAB, Westpac) and review the front section of its annual report. What financial and non-financial performance measures are disclosed in this section of the report?

17.5 Key features of performance measures

In contrast to the regulations (both company law and accounting standards) governing the disclosure of financial information, non-financial performance information is determined simply by the organisation reporting. This gives the organisation discretion as to what they measure internally and whether (or not) this is reported externally. However, this discretion can reduce the comparability of information between organisations.

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Without regulatory guidance applying to both financial and non-financial information, it is important to consider the features of effective performance measures when deciding what to measure and report internally. These include the following:

- *Clear and simple:* A performance measure should be easy to understand and interpret. As we indicated in Chapter 1, accounting has been described as the language of business. Extending this metaphor to performance measures, when we refer to a measure in the organisation, everyone should understand what we mean.
- *Controllable:* We use performance measures to monitor the performance of a business unit or organisation, and in turn to evaluate the performance of the manager/s responsible for that business unit or organisation. If a manager is operating a profit centre, then it is reasonable to evaluate their performance based on both revenue and expense management. If a manager is running a cost centre that does not generate revenue, then controlling revenue is outside their remit and so revenue-related metrics should not be used to evaluate their performance. Similarly, in many organisations, managers will have limited control over the financing of their business unit activities, with this being managed centrally by the CFO and finance team. Where this is the case, ratios like debt-to-equity may not be meaningful to evaluate their performance.
- *Timely:* While the income statement presents revenue for the full year, organisations measure this more frequently and can likewise report it more often. For all performance measures, it is pertinent to ensure they are reported on a timely basis. This is especially important if a change in strategy or operational procedures has occurred, where we don't want to wait longer than necessary to assess the impact of this change.
- *Strategically linked:* With advanced enterprise resource planning (ERP) systems and strong data analytic capabilities (more on this in section 17.7), organisations often have a wealth of performance information that can be measured and monitored. So how do you decide on which set of measures to focus? Given this challenge, the final key feature of performance measures is that they should be strategically linked. In the next section, we will consider the most widely used strategically linked performance management system: the balanced scorecard framework.

17.6 The balanced scorecard framework

LO6 As we have considered both in this chapter and previously in Chapter 6, an organisation's performance needs to be considered within the context of its strategy and the industry in which it operates. This applies when analysing both financial and non-financial performance information. For this reason, many organisations adopt a strategic approach to performance management using the balanced scorecard framework (hereafter, BSC framework).

The BSC framework translates an organisation's strategies into performance measures. It enables managers to evaluate strategic performance by bringing together financial measures that show the outcomes of actions taken, with non-financial measures that reflect the drivers of future financial performance. The framework was developed based on best practice in a number of US-based organisations and introduced by Robert Kaplan and David Norton (1992, 1996). Today it is one of the most popular contemporary performance management systems used globally (Rigby and Bilodeau 2018).

The BSC framework originated as a relatively simple way to guide an organisation's maximisation of long-term firm value. Financial performance measures tend to promote a short-term decision-making focus, particularly when reinforced by pressure from stock market analysts to meet quarterly financial targets. When organisations make decisions to improve short-term financial performance, this can damage the long-term strategy and growth of the organisation. For example, when an organisation is under financial pressure, often discretionary expenditures such as travel and training are minimised to reduce costs and increase profit. Over the long term though, it is these investments in travel and training that can equip the organisation to compete effectively in the future.

So, how does the BSC framework overcome this challenge? It combines financial and non-financial performance measures together, and does so using a four-perspective structure that makes the links between long-term investments and short-term financial performance clear and transparent. Figure 17.2 shows the components of the BSC framework and this four-perspective structure. We will introduce each of these elements next.

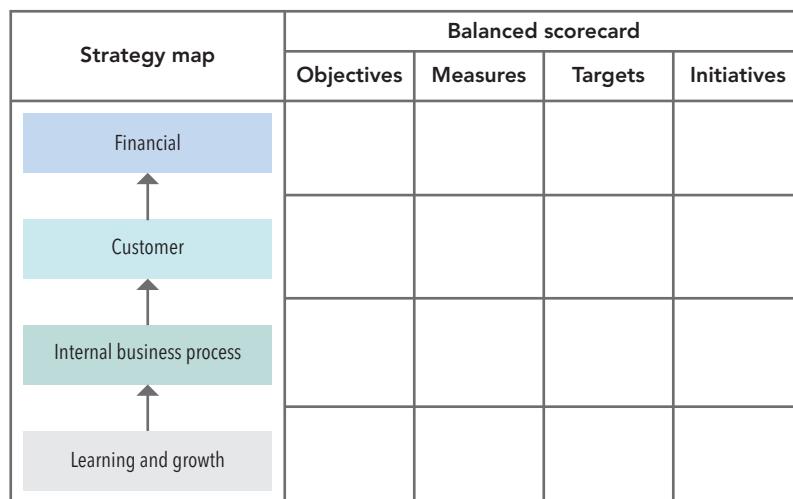


FIGURE 17.2 The BSC framework

Adapted from Kaplan and Norton (1992)

Four-perspective structure

The BSC framework is designed around four perspectives that each address a key question:

- 1 *Financial perspective*: How has the organisation done by its shareholders? This considers how shareholders measure the success of the organisation. Performance measures may include the profitability ratios considered earlier, such as ROE, ROA, gross margin and profit margin, as well as financial measures such as sales and operating profit. The specific financial measures selected should reflect the strategic priorities of the organisation.
- 2 *Customer perspective*: How do customers see the organisation? This captures the ways in which the organisation creates value for its customers and how they perceive this. Performance measures may include customer satisfaction, market share, net promoter score, price comparisons (with competitors), customer retention rate and on-time delivery rates.
- 3 *Internal business process perspective*: At what must the organisation excel? This looks at the range of internal functions required to deliver better products, services and processes. Performance measures may include product quality (vs defect) rates, change in lead time, product retention (vs return) rates, number of products or service features being developed and released, average staff productivity and percentage compliance with quality standards.
- 4 *Learning and growth perspective*: How can the organisation continue to improve and create value? This measures the capabilities that employees and the organisation are developing to improve their critical processes, as well as investments in technology, knowledge sharing and the culture of the organisation. Performance measures may include percentage of employees trained, training expense, employee retention rates and skill levels, technology implementation rate, percentage improvement in data accessibility, and employee satisfaction and wellbeing.

It is vital that the performance measures selected in each perspective are not simply what a competitor monitors, rather they are a translation of the organisation's own unique strategy. By answering these four questions from the bottom to the top (4, 3, 2, 1), these measures can tell the story of the organisation and how its strategy will enable it to create value for the future, initially for its customers and ultimately for its shareholders.

At this point, it is important to note that unlike various disclosures of financial and non-financial performance information in annual reports, organisations rarely publicly disclose the performance information presented using the BSC framework. This reflects the strategic insights it provides. By showing us how the organisation creates and delivers value for its key stakeholders and ultimately its shareholders, the BSC framework succinctly communicates an organisation's 'secret sauce' – that is, how it competes distinctively within its industry. For this reason, the BSC framework is an internal performance report, part of the organisation's management accounting function.

Strategy map

Kaplan and Norton (2004) designed the strategy map to clearly communicate an organisation's strategy. Without this component of the framework, organisations may select a large suite of performance measures to align with lengthy strategic planning documents. A strategy map offers a succinct way of summarising this information by presenting the key strategic themes for the organisation and showing how the individual strategic objectives within these themes link together to achieve the organisation's ultimate goal. Just as integrative financial ratio analysis enables us to tell the story of an organisation's financial performance, a strategy map enables the organisation to communicate its strategic narrative.

A strategy map visually represents the causal relationships among the strategic objectives across the four BSC perspectives. It enables organisational business units and supporting functions to see how their work comes together to deliver the organisation's overall strategy. In this way, it helps the organisation's management and employees develop a shared mental model of how the organisation is working to achieve its ultimate goal.

The example BSC framework, including strategy map, in Figure 17.3 is for a software developer. Here you can see the flow from investments in software feature development and training in the Learning and growth perspective leads to enhanced software release rates and more efficient customer support, respectively, in the Internal business process perspective. The enhanced release rates attract more customers in the Customer perspective leading to revenue growth in the Financial perspective. More efficient customer support increases satisfaction in the Customer perspective leading to revenue growth in the Financial perspective, as well as a direct effect on profit margins.

You can see in this example, there are two strategic themes running from the Learning and growth perspective through to the Financial perspective. The first theme results in revenue growth; while the second theme results in improved profit margins. As you saw in the DuPont system of ratio analysis earlier in this chapter, financial performance can be enhanced within an organisation's operations by growing revenue and/or improving productivity through higher profit margin or asset turnover. For most organisations, a strategy map will contain a revenue growth-focused strategic theme. The other strategic theme then differs depending on the nature of the organisation. For manufacturing and highly asset-intensive organisations, improving productivity is likely to focus on enhanced asset efficiency, which can be captured using a metric like total asset turnover. For service and low asset-intensive organisations, improving productivity is more likely to focus on reducing expenses to increase profit margin, which is consistent with the second strategic theme in the strategy map of the software developer shown in Figure 17.3.

Organisations often use a strategy map as a strategy communication tool. Its clear layout showing the links between strategic objectives enables a strategic narrative to be concisely communicated throughout the organisation. Its primary purpose though is to inform the identification of performance measures captured in the balanced scorecard component of the BSC framework. More on this next.

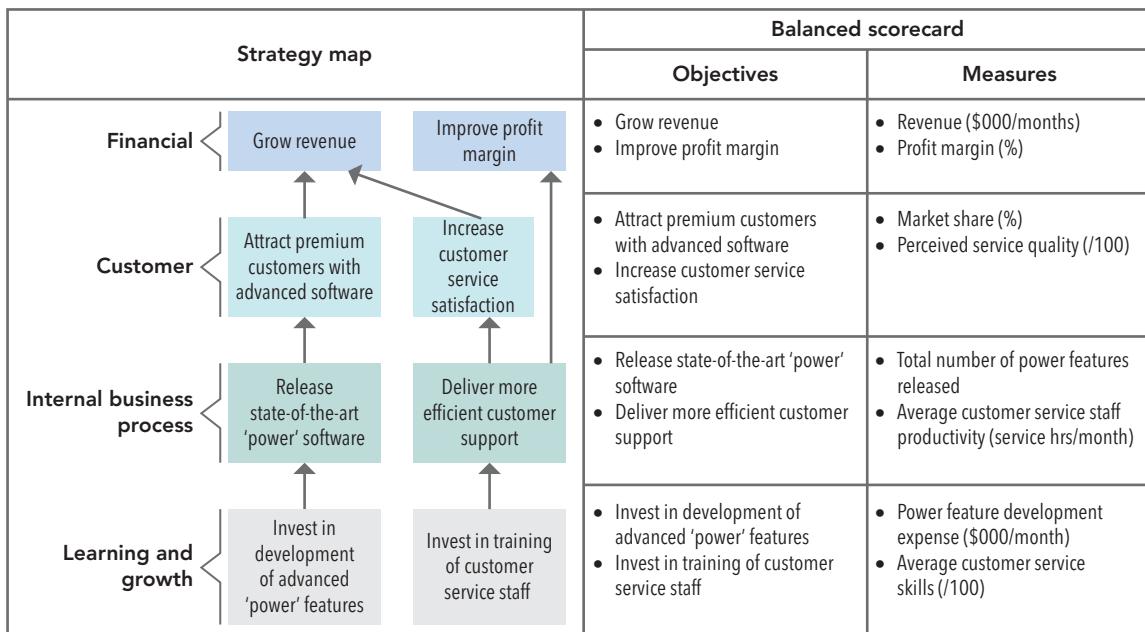


FIGURE 17.3 A simple BSC framework for a software developer

Adapted from Humphreys, Gary and Trotman (2016)

The balanced scorecard

The balanced scorecard itself is where the strategic objectives represented in a strategy map are translated into performance measures, with a target established for each measure and initiatives designed to achieve the strategy objective identified. These columns can be seen in the balanced scorecard component of the BSC framework in Figure 17.2. It is important to note that each strategic objective should be translated into at least one performance measure, and each performance measure should have a target established for it.

The set of performance measures in a balanced scorecard are a combination of financial measures (in the Financial perspective and often in the Learning and growth perspective, where investments are being made) and non-financial measures (mainly in the Customer and Internal business process perspectives, as well as the Learning and growth perspective). For example, in Figure 17.3, financial measures include Revenue and Power feature development expense, while non-financial measures include Perceived service quality and Average customer service staff productivity.

'Balance' in the scorecard is also achieved with a combination of leading and lagging performance measures within each of the four perspectives. Leading performance measures provide information about the factors that drive future performance, whereas lagging performance measures provide information about the outcomes of actions already taken. For example, in the Learning and growth perspective, if an organisation has a strategic objective to enhance employee skills through advanced technical training, a leading measure may be the time spent developing or completing these training programs, while a lagging measure may be the employee skill level achieved after completing the training programs. In Figure 17.3, you can see a leading measure in Power feature development expense (Learning and growth perspective), which tells us what the software developer is expending to develop new power features; while Total number of power features released (Internal business process perspective) is a lagging measure that shows you the outcome of this expenditure.

Setting targets for each performance measure involves analyses of benchmark performance information. An organisation can benchmark its performance on a particular measure against itself over time (e.g., what was the actual performance level in the prior period), internally against other business units, or externally against competitors within its industry or those operating at best-practice standards across industries.

Recall though, an organisation's BSC framework is rarely disseminated publicly. This means that financial ratios that can be calculated from publicly available annual reports are more readily able to be benchmarked, whereas access to non-financial information to benchmark competitor performance will depend on disclosure levels in the industry in which the organisation operates. External competitor and best practice benchmark information may be available in industry analyst reports, and in the organisation's own sustainability reports, and its financial and non-financial performance disclosures (such as Exhibit 17.1 for Qantas).

Applying the BSC framework in for-purpose and public sector enterprises

The BSC framework can be, and has been, applied to various types of organisations. These include profit-focused organisations, as well as for-purpose (not-for-profit) and public sector enterprises. For the latter organisations, the design changes somewhat to reflect the fact that financial value creation for shareholders is not the ultimate goal of the organisation.

For these organisations, success is measured based on how efficiently and effectively they provide benefits to their constituents. Kaplan and Norton (2001) suggest that the strategic objectives in the Financial and Customer perspectives are presented at the same level (rather than in a hierarchy from Customer to Financial). This means that Internal business process perspective objectives link directly to objectives in the Financial perspective, as well as those in the Customer perspective. In addition, the focus of the Financial perspective is on financial donors and how they view the success of the organisation; consequently, performance measures may be operating expense ratios and the percentage of funds used for service delivery. The Customer perspective then instead focuses on the recipients of services and how provision of services to them is evaluated. As this objective is often the priority for financial donors too, measures in this perspective tend to be a focal point of the BSC framework for these organisations.

Applying the BSC framework for sustainability objectives

As we discussed in Chapter 9, organisations today are expected to provide shareholders and other key stakeholders with information on sustainability performance. To manage their sustainability performance on which they are then reporting, this means that consideration is now being given to how these objectives may be included in the BSC framework.

In the past, organisations have considered adding a fifth perspective to cover sustainability-related factors. However, clearly establishing links from this perspective to one of the other four perspectives can be challenging. Another approach that can be used here is to expand the set of strategic outcomes captured in the uppermost perspective: the Financial perspective. That is, it may capture not only financial (aka: economic) outcomes, but also social and environmental outcomes for the organisation. This revised structure requires considering a broader range of stakeholders in the Customer perspective than is the case currently. Here, objectives relating to stakeholder groups including the community, investors, customers and government may be included.

The key benefits of including a broader range of outcomes and stakeholders in the BSC framework are that it encourages strategic goals to be established and monitored in these sustainability-focused areas, and it recognises the long-term focus required to achieve such goals. The key challenge is that this takes a clear framework designed to link short- and long-term performance in a simple causal chain and makes it significantly more complex to develop and use. Given this, it will depend on the objectives of each organisation as to whether including this information within the BSC framework – as opposed to a separate report – is a valuable monitoring and management approach.

Using the BSC framework effectively

A final note on factors to consider when implementing and maintaining a BSC framework effectively over time. First, strong leadership support is essential. The content represented in the strategy map drives the content of the balanced scorecard and, as outlined, this tells the strategic narrative of the organisation. If the

senior leadership team tells a different story, then the value of the scorecard in developing a shared understanding and managing towards common goals is unlikely to be realised.

Second, the scorecard can be implemented at various levels within the organisation from corporate head office through to an individual employee. Beginning with the highest level in the organisation that has a strategy in place and cascading this through the organisation, so that the connections between the BSC framework for different business units and functions can be seen is critical.

Third, strategy needs to remain dynamic for an organisation to successfully compete in an ever-changing external environment. For this reason, a strategy map and balanced scorecard should change and adapt over time. The causal linkages in a strategy map also enable the organisation to test the hypotheses reflected in them. As such, if data does not support a particular link between one strategic objective and the next over time, updates are required. With the growth in ERP systems and data analytic capability mentioned earlier, testing of these causal linkages over time is now much easier for organisations to complete. This information should inform BSC framework updates. Big data and enhanced data analytic capabilities also mean that some organisations can now develop more complete models of their strategy; for example, quantifying the time delays between achieving one strategic objective and the next. This information has been shown in research to enhance decision making and organisation performance (Humphreys, Gary and Trotman 2016).



FOR YOUR INTEREST

An experimental research study by Humphreys, Gary and Trotman (2016) found evidence that managers allocating resources in a business who had access to a strategy map, including causal linkages, developed more accurate mental models of the business and generated greater long-term profit compared with those viewing the same strategic objectives without causal linkages. When the managers also viewed the time delays between achieving one strategic objective and the next, they were found to learn over time too.



HOW'S YOUR UNDERSTANDING?

17D Here are four performance measures for an airline: Profit growth, Investment in ground crew training, On-time departure % and Customer satisfaction rating. To which perspective of the BSC framework does each performance measure relate?

17.7 Performance management and an analytics mindset

You have seen with financial performance information, how DuPont analysis can be used to understand relationships between these data. Similarly, in the BSC framework, the causal linkages between strategic objectives in a strategy map can be used to test the relationships between the financial and non-financial performance information presented. Data analytics now provides the technology and analytic capability to enable these forms of analysis and testing to be completed using the big data sets that many organisations possess.

Big data is described as 'data sets whose size or type is beyond the ability of traditional relational databases to capture, manage and process the data with low latency' (IBM 2021). Much of the data are generated in real time and at a very large scale. It is produced by sensors, devices, video/audio, networks, log files, transactional applications, the internet and social media. While accounting professionals have always

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analysed financial and non-financial performance information to support management decision making, big data varies in its volume (quantity of data available), velocity (speed of data creation), variety (different forms of data from emails to data from remote sensors and GPS), veracity (appropriateness of data based on its relevance and accuracy), variability (how often the structure and meaning of data is changing), and value (ability to generate revenue and/or achieve better results through data). These factors are known as the 6 Vs.

Consequently, organisations increasingly have their own data analysts to conduct data analytics within the business. Data analytics is the process of analysing raw data to obtain insights that inform our understanding of a business problem. This understanding enables faster and more effective business decision making. It can be used to forecast revenue, increase customer retention, enhance supply chain efficiency, mitigate against fraud and develop new products or services.

Data analysts first work with business stakeholders to scope out business problems. They identify relevant data and are involved in the collection of new data (e.g., collecting customer, employee or online user satisfaction surveys). They manage and implement analytical projects including organising data from various sources, building, designing and testing code and maintaining data quality processes. Data analytics identifies patterns in the data, including insights from customers and employees. To do this, statistical techniques such as regression analysis, cluster analysis and time series analysis are employed.

For example, in the financial statement ratio analysis for Harvey Norman in section 17.3, we observed that the organisation had significantly increased sales in 2021 compared with 2020. This increase occurred despite various government-mandated closures in the countries in which Harvey Norman stores operate. Instead, other external factors have been attributed to this increase in sales, including strong housing prices, booming home renovations and low interest rates. In addition, Harvey Norman was able to continue trading because of its multi-channel sales model, where customers are able to purchase in-store or online, using either its delivery or 'click & collect' options. If Harvey Norman wants to understand the impact of different types of mandated closures on the drivers of their sales increases (that is, housing prices, interest rates, and/or home renovations), the organisation can use data analytics. Data analytics will also enable Harvey Norman to analyse its sales trends over time by category, country, product and so on, and examine correlations between these sales patterns and the various external factors that led to the sales increases. These sales trends can be further analysed with respect to the various sales channels through which they occurred. This analysis will enable Harvey Norman to understand the most significant driving forces behind their sales increases, which can help with revenue forecasting moving forward. It will also enable it to understand which sales channels have experienced the most significant growth in their various locations and target promotions toward these moving forward, as well as using this information to maintain and manage inventory more effectively by channel and location. For the online sales channel, data will be available on customers' viewing and purchasing behaviours. This can be used by the marketing team to target ad placement or the technology team to enhance customers' shopping experience.

Data analysts then report on the results of this analysis using data visualisation software. Data visualisation is the graphical representation of data in such forms as charts, infographics, statistical graphs, heat maps and geographic maps. Data visualisation tools used for this purpose include Tableau, Zoho Reports, Google Charts, Datawrapper and Microsoft Power BI. The aim of data visualisation is to make complex data more understandable, enabling the story it tells to be communicated.

In previous chapters, we have considered the expertise of accountants in measuring, reporting and assuring information. You can see how this expertise plays a vital role in a data analytic environment. Increasingly, accountants are developing their own data analytic capabilities to conduct this form of analysis directly, but for all accountants it is valuable to adopt what the Ernst & Young Foundation (2021) describes as an 'analytics mindset'. This is the ability to ask the right questions, obtain relevant data, apply appropriate data analytics techniques, and effectively interpret and share the results with stakeholders. Accountants may not complete all these processes directly, but it is valuable to understand what is required in order to contribute to and/or manage these processes and work effectively with data analysts.

17.8 Motivating managers and organisational performance

The latest annual reports of organisations such as Harvey Norman, Commonwealth Bank, Qantas and Woolworths show that the variable pay structures available to their executives comprise a combination of financial and non-financial measures. For Harvey Norman, non-financial performance measures considered in short-term incentive payments include productivity improvements, digital innovations, customer experience in Australia and New Zealand, franchisee learning, development and growth and company-operated store expansion strategy (Harvey Norman, *Annual Report 2021*). In 2021, non-financial performance measures comprise 20 per cent of short-term incentives, but are also considered in financial penalty provisions that can reduce the overall short-term incentive by 30 per cent.

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For the Commonwealth Bank, non-financial performance measures are considered in short-term variable remuneration, which is based on a scorecard comprising 70 per cent non-financial performance measures, as well as a risk scorecard and values assessment (Commonwealth Bank, *Annual Report 2021*).

For Qantas, their short-term incentive plan for executives is based on a group-balanced scorecard comprising 70 per cent non-financial performance measures (Qantas, *Annual Report 2021*). These measures relate to customers, domestic market recovery and workplace and operational safety.

For Woolworths, short-term incentives are based on a scorecard that includes 40 per cent weighting on non-financial metrics (Woolworths, *Annual Report 2021*). These measures relate to customer satisfaction, including both a net promoter score and overall customer satisfaction score, and safety, including improvements in customer claims, team member injuries and hours lost due to workplace injuries.

The importance of including non-financial performance measures in variable incentives paid to executives was highlighted by the *Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry*. The final report of this Commission (Hayne, 2019) recommends the guidance from the *Sedgwick Retail Banking Remuneration Review* report (2017) be applied consistently. That is, that all variable remuneration to individuals in the sector be based on a broad balanced scorecard defining good performance and behaviour for individuals, not merely financial-focused measures. The report suggests that financial performance measures form no more than 33 per cent of the basis for awarding variable remuneration, and non-financial performance measures should be genuinely non-financial in character. It is suggested that non-financial measures be included to capture 'how' outcomes are achieved.

Across all industries, variable incentives awarded to managers based on the achievement of performance targets are designed to motivate them to perform at a higher level. The inclusion of a significant portion of non-financial performance measures helps to communicate how the organisation believes these performance outcomes should be achieved. The organisation can signal what behaviours it considers important to display in achieving strong performance. This approach enables the organisation to demonstrate not only its commitment to generating financial value for its shareholders, but also its purpose and role as a good corporate citizen. For managers, these forms of variable pay structure should help to direct their behaviour by providing guidance on how outcomes are to be achieved, and also motivating their performance with the knowledge that the measures on which their variable remuneration is based will enable the organisation to both 'do well' and 'do good'.

PRACTICE PROBLEMS

Solutions to practice problems can be found at the end of the chapter. These problems are intended to facilitate self-study and additional practice: *don't look at the solution for any of these without giving the problem a serious try first*, because once you have seen the solution it always looks easier than it is.

PRACTICE PROBLEM A

Integrating ratios

TMC Ltd, a large producer of telecommunications equipment, retails its products through suburban outlets. The calculations of some of its key ratios for 2021 and 2020 are shown.

	2021	2020
Return on equity (ROE)	13%	12%
Return on total assets (ROA)	8%	9%
Profit margin	20%	18%
Asset turnover	0.40 times	0.50 times
Days in inventory	72 days	55 days
Days in debtors	42 days	42 days
Current ratio	1.6 times	1.5 times
Quick ratio	0.7 times	1.1 times
Debt-to-equity ratio	1.4 times	1.0 times

- 1 Comment on TMC's profitability, activity (turnover), liquidity/solvency and financial structure.
- 2 Why can ROE and ROA move in different directions?
- 3 What caused the fall in ROA?
- 4 What caused the fall in asset turnover?
- 5 What caused the increase in the current ratio?

PRACTICE PROBLEM B

- 1 What is the purpose of the balanced scorecard framework?
- 2 Why do organisations use both financial and non-financial performance information to manage performance?
- 3 Why might accounting professionals adopt an analytics mindset to help in managing organisational performance?

HOMEWORK AND DISCUSSION TO DEVELOP UNDERSTANDING

This section starts with simpler discussion questions that revise some of the basic concepts, which are then followed by a set of problems.

DISCUSSION QUESTIONS

- 1 What do we learn about an organisation from completing financial statement ratio analysis?
- 2 Explain the benefits of applying the DuPont system of ratio analysis.
- 3 Do you think financial statement ratio analysis provides all the information that managers and investors require?
- 4 What do we learn from non-financial performance measures?

- 5 Outline the reasons for and against disclosing non-financial performance information in a company's annual report.
- 6 The balanced scorecard (BSC) framework enables managers to evaluate strategic performance. Explain why this is necessary. What are some of the benefits of this form of performance reporting?
- 7 What are the four perspectives communicated used in the BSC framework? Provide two examples of performance measures for each category.
- 8 What skills do accountants have that are important in the development of a balanced scorecard (BSC)?
- 9 Why do organisations prepare a strategy map, in addition to their BSC? In your response, consider how a strategy map may be used in practice.
- 10 What challenges might exist in applying the BSC framework to an organisation?
- 11 Why might improved performance on non-financial measures not result in improved financial performance?
- 12 An investor in the Australian stock market asks you, 'Why doesn't everyone prepare a balanced scorecard and report it to the markets? It makes the company's financial information easier to interpret, and helps to understand differences in the financial performance of different companies in their industry.' Comment on the investor's statement.
- 13 Explain what are big data and data analytics. Why is data analytics required?
- 14 What is an analytics mindset? List the four key elements of this mindset.
- 15 A senior member of a large public company's management team complained, 'Why do our accounting and finance professionals need training to adopt an analytics mindset? We have data analysts, can't they just provide us with all the data insights we need for the company?' Comment on the manager's complaint.

PROBLEMS

PROBLEM 17.1

Financial performance measures

For each of the following organisations, identify two financial ratios that are likely to be particularly important.

- 1 A mining company that has been investing heavily in acquiring new mine sites and equipment, as part of its debt-financed expansion plans.
- 2 A consulting company that has stopped leasing CBD office space, as its employees move to a fully remote working model.
- 3 A technology service delivery company that is investing in customer service training programs for its technical support staff to improve the quality of their customer support experience.
- 4 A consumer goods retailer that has been investing heavily in advanced supply chain and logistics technology to enable fast delivery of inventory from its suppliers through to its stores, and directly to its online customers.

PROBLEM 17.2

Non-financial performance measures

Identify two non-financial performance measures to manage the performance of the following organisations.

- 1 A food delivery business that is focused on retaining its drivers to ensure a better quality, more consistent delivery experience for its customers.
- 2 A boutique winery that is hiring newly qualified viticulturists to access the latest techniques for growing and producing high quality organic wines.
- 3 A technology service delivery company that is investing in customer service training programs for its technical support staff to improve the quality of their customer support experience.
- 4 A high-end fashion retailer that is rationalising its boutique stores to maintain a smaller scale luxury customer in-store experience, while investing extensively in website development and online logistics to offer an enhanced online customer purchasing experience.

PROBLEM 17.3

Strategy map

The award-winning Kamaroi restaurant delivers a premium dining experience using Indigenous produce, and is now planning to open a chain of Indigenous-food-based casual dining restaurants across the state under the name *Thawuma-li*. It would like to develop a strategy map to manage the performance of *Thawuma-li* moving forward.

Thawuma-li aims to develop and grow its customer base by recruiting an experienced marketing team to develop an innovative advertising campaign that focuses on the Indigenous-food-based casual dining experience on offer. At the same time, they plan to provide training to all waitstaff to equip them to serve customers efficiently and expertly in the new casual dining restaurants.

Identify two strategic themes reflected in the strategy of *Thawuma-li* and use these to prepare a simple strategy map. Be sure to include causal linkages between the strategic objectives presented in the strategy map.

PROBLEM 17.4

Balanced scorecard

Identify two example performance measures, one leading and one lagging, for each of the following strategic objectives.

- 1 Improve specialist sales staff skills
- 2 Enhance employee wellbeing
- 3 Increase customer satisfaction
- 4 Enhance customers' in-store experience
- 5 Develop innovative new products
- 6 Invest in team scheduling system

PROBLEM 17.5

Analytics mindset

An Australian motorcycle courier delivery service DeliverSafe introduced a wellbeing strategy for its Sydney-based employees. The strategy comprised a series of wellbeing initiatives including:

- 1 encouraging couriers to regularly take annual leave
- 2 providing an additional five days wellbeing leave per year
- 3 providing an additional five-day training allowance to complete a mindfulness training program.

One year after implementing its wellbeing strategy, DeliverSafe found that workplace safety performance had declined; specifically, the number of work-related motorcycle accidents resulting in minor injuries has increased by 20 per cent.

You have just read about the key elements of an analytics mindset. Using this mindset, suggest how data analytics may be applied at DeliverSafe to better understand whether and why the new wellbeing strategy has impaired workplace safety performance.

CASES

CASE 17A

Woolworths Limited

Throughout the book we have considered Woolworths Limited in detail. Until recently, Woolworths comprised five main operating groups – Australian food (including Woolworths supermarkets), New Zealand food (including Countdown supermarkets), Endeavour drinks (including BWS and Dan Murphy's liquor), Big W and Hotels. In 2020, Woolworths merged two of these groups (Endeavour drinks and Hotels) to form the Endeavour Group, then Woolworths completed a separation of the Endeavour Group via demerger in 2021.

Refer to the extracts of the annual report of Woolworths in this book's appendix. All questions relate to the consolidated accounts.

- 1 Review the Consolidated Statement of Profit or Loss and calculate:

- a profit margin (using profit (loss) for the period)
- b gross margin.

Based on these two ratios, assess whether Woolworths' profitability has improved from 2020 to 2021.

- 2 Review the Consolidated Statement of Financial Position.

- a Identify the two line items that vary most significantly from 2021 to 2020, and consider why these changes have occurred (you may need to refer to the notes to the financial statements).
- b Identify any financial ratios that include these line items, and assess whether it is meaningful to compare these ratios from 2020 to 2021.
- c Would you recommend we conduct integrative financial ratio analysis using the DuPont system to compare Woolworths' performance in 2021 with 2020?

CASE 17B

Coles Group Limited

Woolworths Limited has a reputation of being a defensive stock with better than average profit growth and steadily increasing returns to investors. The supermarket retail industry in Australia is dominated by Woolworths and its key competitor, Coles Supermarkets (which is part of Coles Group Limited). In the last few years Coles Supermarkets has emerged as a reinvigorated competitor to Woolworths, with investment in new stores and a strong branding campaign.

- 1 Obtain the Coles Group annual report for 2021. Read some background about the company (the Managing Director and CEO's report is a good place to begin) and identify the operating divisions of the Coles Group. How are they similar to Woolworths and how are they different from Woolworths?
- 2 Find the income statement and balance sheet. Using this information, calculate the following ratios for the Coles Group: ROE, ROA, alternative ROA, profit margin, alternative profit margin and gross profit.
- 3 Compare the profitability of the Coles Group from 2020 to 2021, and use the DuPont formula to help explain any changes observed.

CASE 17C

Integrated financial ratio analysis

As a senior investment analyst, you have been analysing financial results of Cretail Ltd for the last few years. The following table comprises a summary of the financial results for Cretail Ltd.

CRETAIL LTD

	2022	2021	2020
Income statement			
Sales	34 212.0	33 018.0	32 266.8
Other income	91.8	71.9	0.0
COGS	(26 160.8)	(25 305.3)	(24 059.5)
Gross profit	8 143.0	7 784.6	8 207.3
EBIT	850.9	1 027.2	888.1
Interest expense	(98.9)	(55.2)	(13.5)
NPBT	752.0	972.0	874.6
Tax expense	(215.6)	(285.9)	(258.1)
NPAT continuing operations	536.4	686.1	616.5
Profit from discontinued operations	627.2	(48.2)	0.0
NPAT attributable to shareholders	1 163.6	637.9	616.5
Pro forma NPAT	786.6	692.0	576.0
Sales growth	3.62%	2.33%	19.43%

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Gross profit growth	4.60%	25.15%	10.94%
Gross margin	23.53%	23.36%	25.44%
Net profit margin	1.57%	2.08%	1.91%
DuPont analysis			
Net profit margin	1.57%	2.08%	1.91%
Asset turnover	3.75 times	3.58 times	3.57 times
Leverage	2.54 times	2.70 times	2.21 times
ROE	14.91%	20.09%	15.10%

- 1 Comment on the sales growth of Cretail Ltd for the last three years. Discuss any issues of concern.
- 2 Consider the gross profit growth and gross margin for Cretail Ltd in 2021. Discuss any issues of concern.
- 3 If you were part of the Cretail management in 2022 facing a takeover offer, how would you persuade shareholders to reject the takeover offer and continue to give you – the management – the chance to improve the company's performance? You may wish to refer to the DuPont analysis in your answer.

CASE 17D Non-financial performance measures at Woolworths

In earlier chapters, we reviewed the Woolworths Annual Report 2021 (Chapter 6) and their 2021 Sustainability Report and Sustainability Report Appendix (Chapter 9). These reports are also the main sources of Woolworths' publicly available non-financial performance information.

- 1 Obtain the 2021 Sustainability Report Appendix. What are the two major categories of performance metrics presented by Woolworths? Consider where these financial and non-financial performance measures may be presented within a BSC framework for Woolworths.
- 2 Obtain the 2021 annual report and review the section on 'Delivering on our strategic priorities'. Here Woolworths presents six key strategic priorities for the Group. For each strategic priority:
 - a discuss whether it focuses mainly on revenue growth, better cost management or enhanced asset utilisation
 - b identify one lead and one lag performance measure.

CASE 17E Commonwealth Bank Limited

Review the front section of the Commonwealth Bank's Annual Report. For each strategic priority presented, which of the four BSC perspectives will it impact?

HOW'S YOUR UNDERSTANDING? SOLUTIONS

- 17A** Hint: you should assess Harvey Norman's performance by examining changes for each group of ratios as a basis for forming your overall conclusion. Also, consider here the DuPont system conclusions outlined in the summary of section 17.3.
- 17B** Harvey Norman should compare its financial performance with companies that operate in the same industry; for example, Greenlit Brands and IKEA in the furniture retailing industry, and JB Hi-Fi and Bing Lee in the computer and software retailing and domestic appliance retailing industries. You may also consider Harvey Norman's international peers.
- 17C** For the company you select, you should see a variety of performance measures. There will likely be a set of financial measures (including ratios) that summarise the company's overall financial performance. There will also likely be various non-financial measures; here it is useful to consider which of these appear to be tailored to the company or industry in which it operates.

17D Profit growth should appear in the Financial perspective of the BSC framework. Investment in ground crew training should appear in the Learning and growth perspective (hint: while this is a financial performance measure, it is focused on investing for the future, rather than outcomes of past performance). On-time departure % should appear in the Internal business process perspective. Customer satisfaction rating should appear in the Customer perspective.

Now consider the flow from one performance measure to the next, as we move from the Learning and growth perspective up to the Financial perspective. Would you expect Investment in ground crew training to lead to an improved On-time departure %, and so on?

PRACTICE PROBLEM SOLUTIONS

PRACTICE PROBLEM A

- 1 a *Profitability*: ROE has increased from 12 per cent to 13 per cent while ROA has fallen from 9 per cent to 8 per cent. As shown in point 3 below, the fall in ROA is due to the fall in asset turnover.
- b *Activity (turnover)*: the average time to collect debtors has stayed constant. However, the days in inventory has increased from 55 days to 72 days, meaning that, on average, it is taking much longer to sell inventory. These extra days need to be financed by the company. The reasons for the build-up in inventory should be investigated (e.g. stocking up for some large orders, as opposed to lack of demand for the product, require very different actions).
- c *Liquidity/solvency*: the current ratio has increased (mainly because of the build-up in inventory, as discussed) while the quick ratio has dropped below 1 to 0.7 indicating the company may have problems paying their bills in the short term.
- d *Financial structure*: the level of gearing has increased substantially from 1 to 1.4. The ability of the company to pay its interest bill needs to be considered, particularly given the decrease in profitability as indicated by the lower ROA. It would be useful to calculate the interest cover ratio.
- 2 While ROA has decreased, ROE has increased because of the increase in gearing. Provided the extra funds borrowed earn a return higher than the cost of the debt, shareholders will benefit and the ROE will increase.
- 3 Recall in the DuPont system that $ROA = \text{Profit Margin} \times \text{Asset Turnover}$ (e.g. $20\text{ per cent} \times 0.40\text{ times} = 8\text{ per cent}$ for 2021). Overall, ROA has fallen from 9 per cent to 8 per cent. While profit margin has increased from 18 per cent in 2020 to 20 per cent in 2021, asset turnover has decreased more substantially from 0.50 times to 0.40 times during the same period; thus the fall in ROA from 9 per cent to 8 per cent is attributable to the decline in asset turnover.
- 4 One likely reason for the fall in asset turnover is the fall in inventory turnover.
- 5 The current ratio was increased because of the build-up in inventory. This can be seen because the quick ratio (which is the same as the current ratio, except it excludes inventory) has declined, but the current ratio has increased.

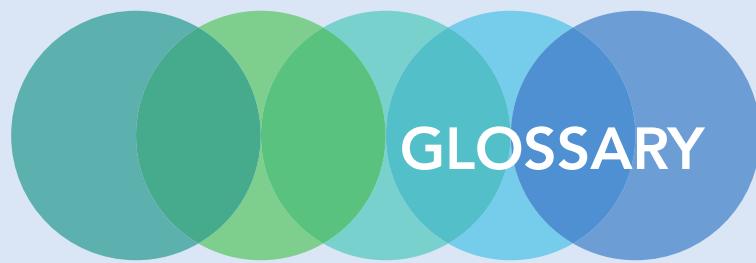
PRACTICE PROBLEM B

- 1 The balanced scorecard framework translates the strategies of an organisation into performance measures, in order to guide the organisation in maximising long-term firm value.
- 2 Financial performance measures provide information on historic financial performance showing the outcomes of decisions taken previously. This enables managers to assess whether past management approaches have been successful, and adapt these for the future if required. Non-financial performance measures provide information on how the organisation is delivering its strategy currently by measuring the performance of its operational activities. This provides leading information on future financial outcomes that equips managers to adapt their current management approaches to enable future financial outcomes to be achieved.

- 3 An analytics mindset offers the ability to ask the right questions and obtain data-informed insights to enhance understanding of a business problem. Traditionally, accounting professionals have played a key role here as they measure and report the performance information used to make business decisions. In a big data environment, it is therefore critical for accounting professionals to develop an analytics mindset to enable them to continue to play this vital role in adding value to business decision making.

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This glossary provides definitions for many terms in financial accounting. Terms are cross-referenced to other terms where helpful. For additional help in finding things, consult the index at the end of this book.

A

Accelerated depreciation (amortisation)

a depreciation method, such as reducing balance, that records more depreciation in the earlier years of an asset's life, and less in later years, than does the straight-line method.

Account

a summary record of an asset, liability, shareholders' equity, revenue or expense, in which the effects of transactions, accruals and adjustments are indicated in dollars.

Accounting

the record-keeping and reporting of an enterprise's performance and position in monetary terms. Accounting provides the reports that summarise the economic results of management's decisions for internal use and for transmission to external interested parties (such as investors, creditors and regulatory agencies).

Accounting entity

the enterprise for which the accounting is being done. The entity may be a single legal company or other organisation, an economic unit without legal standing (such as a proprietorship) or a group of companies with connected ownership for which consolidated financial statements are prepared.

Accounting equation

the double-entry arithmetic by which Assets = Liabilities + Shareholders' equity.

Accounting policy

the specific principles, bases, conventions, rules and practices chosen by an entity in preparing and presenting financial statements. For examples, see the notes immediately following the financial statements of any company.

Accounting policy choice

a decision between acceptable accounting policies is often needed because more than one acceptable policy exists in many areas.

Accounting principles

see **Generally accepted accounting principles (GAAP)**.

Accounting standards

the mandating of particular accounting methods or policies by an authoritative body. In Australia, this is done by the Australian Accounting Standards Board, and in the United States by the Financial Accounting Standards Board.

Accounts payable

liabilities representing amounts owed to short-term trade creditors. Often called 'trade creditors'.

Accounts receivable

amounts owing by debtors (customers), usually arising from sales of goods or services. Often called 'trade debtors'.

Accrual accounting

the method of making an economically meaningful and comprehensive measurement of performance and position by recognising economic events regardless of when cash transactions happen, as opposed to the simpler cash basis of accounting. Under this method, revenues and expenses (and related assets and liabilities) are reflected in the accounts in the period to which they relate.

Accrual profit

the result of subtracting expenses from revenue(s), when both kinds of accounts are calculated by accrual accounting.

Accrued expense

an expense recognised in the accounts before paying for it.

Accumulated depreciation (amortisation)

a balance sheet account that accumulates total depreciation (amortisation) expense over a number of years. The account balance is a credit, so it is opposite to the debit balance asset cost account. The difference between cost and accumulated depreciation is the book value of the asset. Accumulated depreciation relates to tangible assets and accumulated amortisation relates to intangible assets.

Acid test ratio

cash, temporary investments and accounts receivable divided by current liabilities. Also called the **Quick ratio**.

Adjusted trial balance

the list of accounts that are prepared after all the accrual accounting adjustments and corrections have been made, so representing the final account balances used in preparing the financial statements.

Adjusting (journal) entry

a journal entry to implement accrual accounting by recognising, in the accounts, economic events that are not yet adequately accounted for by the routine transactional accounting system. For example, if there is no transaction to reveal the gradual wear and tear of a fixed asset, an adjusting entry must be made to recognise this depreciation.

Adjustment(s)

see **Adjusting (journal) entry**.

Ageing of accounts receivable

the process of classifying accounts receivable by the time that has passed since the account came into existence. This classification is used as an aid to estimating the required allowance for doubtful debts for the estimated amount of uncollectable accounts receivable.

Agency theory

is concerned with relationships between people in which one or more of them (the agents, such as managers, auditors and lawyers) is entrusted with acting on behalf of one or more others (the principals, such as owners, creditors and defendants). Agency theory tends to focus on the stewardship role of accounting information (in monitoring and controlling the stewardship of the agent on behalf of the principal). Principals and agents can demand whatever information their specific relationship requires.

Agent

a person who is a party to a contract between him- or herself and another, called the principal. The agent's role is to carry out the wishes of the principal, as specified in the contract. Some examples of agents are managers, auditors and lawyers, who are entrusted with acting on behalf of one or more others (the principals, such as owners, creditors and defendants). Agents have a stewardship responsibility to the principal.

Allowance for doubtful debts

the estimated amount of accounts receivable that will not be collected (which are 'doubtful'). The account, which is a contra account to accounts receivable, is used in order to recognise the bad debts expense related to such doubtful accounts, but without removing those accounts from the books, because the firm will still try to collect the amounts owing.

Amortisation

allocation of the cost of an intangible asset to an expense account over several accounting periods to recognise the 'consumption' of the asset's economic value as it helps to earn revenue over those periods.

Annual report

the document provided annually to shareholders by the officers of a company. It includes the financial statements, the notes to the financial statements, the auditor's report, supplementary financial information, such as multi-year

summaries, and reports from the company's board of directors and management.

Asset valuation

see **Balance sheet valuation**.

Asset(s)

a present economic resource controlled by the entity as a result of past events. An economic resource is a right that has the potential to produce economic benefits.

Associated company

a company, which is not a subsidiary of an investor company, over which the investor has significant influence (generally 20–50 per cent ownership) but not control.

Audit

a service where the auditor's objective is to provide a reasonable level of assurance by issuing a positive expression of opinion that enhances the credibility of an assertion about an accountability matter.

Audit committee

a subcommittee of the board of directors, generally comprising non-executive directors who liaise with the external and internal auditors.

Audit report

the auditor's report on the truth and fairness of the set of financial statements.

Auditor's report

the document accompanying the financial statements that expresses the auditor's opinion on the fairness of the financial statements.

Australian Accounting Standards Board (AASB)

the Australian body that sets financial accounting standards to be followed in the preparation of financial statements.

Authoritative standards

written rules and guidelines established by official accounting standard-setters such as the Australian Accounting Standards Board in Australia and the Financial Accounting Standards Board in the United States.

Available cost

the total dollar amount represented by the sum of beginning inventory and purchases during the period, therefore representing the total dollar cost of inventory available for sale or use during the period.

Average cost (AVGE)

an inventory cost flow assumption by which the cost of an individual unit of inventory is the weighted average cost of the beginning inventory and subsequent purchases.

B

Bad debts expense

an expense account that results from the reduction in carrying value of those accounts receivable that have been projected to be uncollectable or doubtful.

Balance sheet

the list of assets, liabilities and owners' equity that constitutes the formal statement of a company's financial position at a specified date, summarising, by category, the assets, liabilities and shareholders' equity.

Balance sheet valuation

the assignment of numerical values to the balance sheet's assets, liabilities and shareholders' equity accounts.

Bank overdraft

a negative bank account balance (withdrawals exceeding deposits), which banks may allow as a de facto loan as long as it is temporary.

Bank reconciliation

the reconciliation of a bank statement with the figures in a company's cash at bank ledger account.

Basic earnings per share (EPS)

calculated by dividing the profit of a company by the weighted average number of ordinary shares outstanding during the year.

Betterment

an expenditure to improve an asset's value to the business, which commonly extends the asset's functionality and/or useful life (more than just repairs and maintenance), and is added to the value of the asset (capitalised), not expensed.

Big bath

a way of manipulating reported profit to show even poorer results in a poor year in order to enhance later years' results.

Board of directors

the senior level of management, representing and directly responsible to the owners (shareholders). Normally elected annually by the shareholders.

Bond

an instrument of debt issued by an enterprise in return for cash, in which a promise is made to repay the debt (usually at a particular date or on a specified schedule) plus interest.

Bond market

capital markets in which debt instruments (bonds and similar items), rather than shares, are traded.

Bonus issue

the issue of additional shares to existing shareholders with no cost incurred by them. For example, a two-for-one bonus issue would involve the issue of two additional shares for every share held.

Book value

the amount shown in the accounts for any asset, liability or shareholders' equity item, after deducting any related contra account (for example, the book value of a truck is the recorded cost minus accumulated depreciation). The term is also commonly used to refer to the net amount of total assets less total liabilities (the recorded value of the shareholders'

residual interest, which equals total equity: Assets = Liabilities + Equity).

Book value per share

total shareholders' equity divided by the number of shares issued.

Books of original entry

the journals in which transactions are first recorded.

Bottom line

a colloquialism referring to the net profit (the 'bottom line' on the income statement).

C**Capital**

the owners' contribution to or interest in a business (the equity). Often used specifically to refer to the equity of unincorporated businesses (proprietorships and partnerships).

Capital maintenance

the concept that the owners' equity of a business should be sustained before distributions are paid out of the company to owners.

Capital market theory

deals with the behaviour of aggregate markets (such as share markets) and with the role of information in the operation of such markets.

Capital markets

markets in which financial instruments, such as shares and bonds, are traded.

Capitalisation, capitalise

the recognition of an expenditure that may benefit a future period as an asset rather than as an expense of the period of its occurrence. Expenditures are capitalised if they are likely to lead to future benefits and, thus, meet the criterion to be an asset.

Carrying value

the amount shown on the balance sheet for a particular asset or liability.

Cash basis

recognising the effects of transactions and other events when cash, or its equivalent, is received or paid, rather than when the transactions or other events occur.

Cash disbursements

cash payouts, by cheque, currency or direct deductions from the bank account.

Cash flow

the inflows of cash (cash receipts) and outflows of cash (cash disbursements) over a period. Information about cash flow is presented in the statement of cash flows.

Cash flow cycle

the time from the payment of goods purchased for manufacture or resale to receipt of cash for final product or sale.

Cash flow from financing

Cash inflows or outflows from financing activities, including share issues and borrowings.

Cash flow from operations

cash generated by day-to-day business activities and highlighted as the first section in the statement of cash flows.

Cash flow statement

see **Statement of cash flows**.

Cash flow to total assets

the ratio of cash from operations divided by total assets.

Cash payments

payments by currency, cheque or other bank withdrawal.

Cash profit

cash receipts minus cash disbursements. Roughly equivalent to the cash from operations figure.

Cash receipts

cash inflows, by currency, other people's cheques or direct bank deposits.

Cash receipts journal

the record of customers' cheques and other cash received.

See **Books of original entry**.

Cash transaction

the simplest kind of economic exchange routinely recorded by financial accounting, and an important starting point for the financial statements.

Chart of accounts

an organised list of the accounts used in the accounting system. This can be contrasted with the trial balance, which displays all the accounts and their debit or credit balances.

Classification

the choice of where in the financial statements to place an account, such as whether an investment asset should be shown as a current asset or a noncurrent asset.

Close, closing

the transfer of the temporary accounts (revenues, expenses and dividends declared) to retained earnings at the end of the fiscal period.

Closing entries

journal entries that are recorded at year-end to transfer the balances in temporary accounts (revenues, expenses and dividends) to the balance sheet's account of retained profits, and set those balances to zero in preparation for entering the next year's transactions.

COGS

see **Cost of goods sold**.

Common size financial statements

a technique used for analysing financial statements that involves income statement figures being expressed in percentages of revenue, and balance sheet accounts being expressed in percentages of total assets.

Comparability

information that enables users to identify similarities in and differences between two sets of economic phenomena, such as two different years of a company's financial statements.

Compound, compounded, compounding

terms that refer to the frequency by which interest calculated on a loan or other debt is periodically added to the principal, therefore attracting future interest itself.

Conservative accounting policies

opposite to aggressive accounting policies.

Consolidated financial statements, consolidation

a method of preparing financial statements for a group of companies linked by ownership as if they were a single company. Consolidated financial statements recognise that the separate legal entities are components of one economic unit.

Consolidated goodwill

a form of goodwill arising only when companies' financial statements are combined in consolidation.

Contra accounts

accounts established to accumulate certain deductions from an asset, liability or owners' equity item.

Contra asset

an account that normally has a credit balance, but is located in the asset part of the balance sheet, and deducted from the asset to give a net balance. Examples include accumulated depreciation and allowance for doubtful debts.

Control

the power to govern the financial and operating policies of an entity in order to obtain benefits from that entity's activities.

Control account

a general ledger account for which there is detailed analysis provided in the subsidiary ledger.

Corporate governance

the system by which companies are directed and managed. It influences how the objectives of the company are set and achieved, how risk is monitored and assessed, and how performance is optimised.

Corporate group

a group of companies linked by common or mutual ownership.

Cost basis

a term usually used to account for a noncurrent intercorporate investment when a company does not have control over another company. The investment is carried at cost, and any receipt of dividends is recorded as revenue for the period.

Cost flow assumption

an assumption made about the order in which units of inventory move into and out of an enterprise, used to

compute inventory asset value and cost of goods sold expense in cases where the order of flow is not or cannot be identified. Possible assumptions include FIFO, LIFO and weighted average.

Cost of capital

the cost of raising debt or equity funds; for example, the cost of borrowed funds is mostly the interest to be paid to the lender.

Cost of goods sold (COGS)

an expense account that reflects the cost of goods that generated the revenue (also called cost of sales).

Credit transaction

an economic exchange by which at least one party makes a promise to pay cash or other consideration later. This kind of transaction is recognised by most financial accounting systems, especially if it is a routine way of doing business.

Creditor

one who extends credit; that is, gives someone the right to buy or borrow now in consideration of a promise to pay at a later date.

Current assets

cash and other assets, such as temporary investments, inventory, receivables and current prepayments, that are realisable or will be consumed within the normal operating cycle of an enterprise (usually one year).

Current liabilities

liabilities that are expected to be paid within the normal operating cycle of an enterprise (usually one year).

Current market value

the estimated sale value of an asset, settlement value of a debt or trading value of an equity share.

Current ratio

current assets divided by current liabilities.

Current value accounting

a proposed accounting method that uses current or market values to value assets and liabilities and to calculate profit.

D

Days' sales in receivables (Days in debtors)

the ratio of accounts receivable to the daily sales, expressed in number of days' sales represented by accounts receivable.

Debenture

a form of security taken by a creditor on a loan or bond, by which the creditor has a general ability to influence or direct management decisions if the debt payments are not made on schedule; not a claim on a specific asset, as a mortgage is.

Debt-to-assets ratio

total liabilities divided by total assets.

Deferral

part of accrual accounting, but often used as the opposite to an accrual. A deferral involves keeping a past cash receipt or

payment on the balance sheet – in other words, putting it on the income statement as revenue or expense at a later time. An example is recognising a deferred revenue liability resulting from a recent cash receipt, such as for a magazine subscription to be delivered later. (By contrast, accruals involve recording a revenue or expense before the cash receipt or payment occurs.)

Depreciation

allocation of the cost of a noncurrent asset to expense over several accounting periods to recognise the consumption of the asset's economic value as it helps to earn revenue over those periods. The term 'depreciation' is used with respect to tangible assets, while 'amortisation' is used with respect to intangible assets.

Direct energy and emission sources

energy consumption or production undertaken at, and greenhouse emissions arising from, operations over which the business has the authority to introduce and implement operating, environmental and health and safety policies.

Direct method of cash flow analysis

a method of preparing the statement of cash flows, especially the cash from operations section, using records of cash receipts and disbursements instead of the adjustments to net income used in the more traditional Indirect method of cash flow analysis.

Direct write-off

the transfer of the cost of an asset to an expense or loss account by removing the amount entirely from the asset account. Used in cases where there is no prior allowance for the expense or loss, so used when there is no contra account such as allowance for doubtful debts.

Disclosure

principle of providing sufficient disclosure in accounting reports to enable users to make necessary decisions.

Discontinued operations

portions of the business that the enterprise has decided to not keep going and/or to sell to others.

Discounted cash flow

present value analysis of future cash flows by removing their presumed interest components.

Dividend payout ratio

the ratio of dividends declared to net profit.

Dividends

distributions of a portion of net profit to shareholders in the company.

Double-entry accounting

the practice of recording two aspects of each transaction or event: the resource effect and the source effect. Though much expanded since its invention several hundred years ago, it is still the basis of bookkeeping and financial accounting.

E

Earnings before interest and tax (EBIT)

a measure of profit based on the operating profit before interest and taxes are deducted.

Earnings before interest, tax, depreciation and amortisation (EBITDA)

a measure of profit based on the operating profit before deducting interest, tax, depreciation and amortisation.

Earnings per share (EPS)

the ratio of net profit to the average number of ordinary (voting) shares outstanding; used to allow the owner of the shares to relate the company's earning power to the size of his or her investment.

e-commerce

the conduct of financial transactions, and much of the business transactions behind them, over electronic media such as telecommunication lines or the World Wide Web.

Economic entity

the financial accounting definition of an enterprise, used to determine what is to be included in transactions and in the financial statements. Also used to refer to a group of companies considered to be under the same control, so constituting a larger economic group.

Efficient capital market

a theoretical description of a capital market whose prices respond quickly and appropriately to information.

Efficient market hypothesis

the proposal that capital markets actually are efficient, responding quickly, smoothly and appropriately to information. Some seem to be efficient; some do not.

Electronic funds transfer (EFT)

the transfer of money between a buyer's bank account and the seller's bank account without the need to write cheques or make deposits. EFT is what happens if a customer uses a bank card to pay for groceries in the supermarket and the amount is automatically deducted from the customer's bank account.

Employee deductions

amounts that are deducted from an employee's gross salary before the net amount is paid to him or her. These deductions include income tax, superannuation, union fees and health insurance.

Equity

is the residual interest in the assets of an entity after deducting all its liabilities (Assets – Liabilities = Equity).

Equity method

a method of accounting for intercorporate investments, usually used when a company owns between 20 per cent and 50 per cent of another company. The investment is carried at cost, and any profit or loss, multiplied by the percentage ownership of the owned company, is added to or deducted

from the investment. Any dividends received are deducted from the investment.

Expense

decreases in assets, or increases in liabilities, that result in decreases in equity, other than those relating to distributions to holders of equity claims.

Expense recognition

the incorporation of measures of expenses incurred into the measurement of profit by entering into the accounts the amount of expense determined, according to the firm's accounting policies, to be attributable to the current period.

External audit

the audit conducted by an external auditor.

F

Fair value

the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's-length transaction.

Faithful representation

the financial statements should report the economic substance of events happening to the company, and the numbers should measure the events neutrally, neither overstating nor understating their impact.

FIFO

See **First in, first out**.

Financial accounting

the reporting in financial statements of the financial position and performance of an enterprise to users external to the enterprise on a regular, periodic basis.

Financial Accounting Standards Board (FASB)

the US body responsible for setting the standards that financial reporting must follow.

Financial performance

the enterprise's ability to generate new resources from day-to-day operations over a period of time, via dealing with customers, employees and suppliers. Measured by the net profit figure in the income statement.

Financial position

the enterprise's set of assets, liabilities and owners' equity at a point in time. Measured by the balance sheet.

Financial reporting

use of financial statements and disclosure to report to people outside the enterprise on its financial performance and financial position.

Financial statements

the reports for people who are external to the enterprise (although they are also of interest to management) referred to in the definition of accounting, which generally comprise a balance sheet, an income statement, a statement of cash flows and the notes to these statements.

Financing activities

part of the statement of cash flows for those activities that relate to the changing size and composition of the financial structure of the entity.

First in, first out

an inventory cost flow assumption by which cost of goods sold is determined from the cost of the beginning inventory and the cost of the oldest purchases; thus the acronym FIFO, which stands for 'first in, first out'. It follows, therefore, that under FIFO ending inventory cost is determined from the cost of the most recent purchases.

Fixed assets

tangible, noncurrent physical assets that are not expected to be used up in one operating cycle, but are expected to be used in generating revenue for many periods (e.g. machines, buildings and land).

Foreign currency translation reserve

an account arising as a consequence of the method used to convert foreign operations' accounting figures into Australian dollars for the purpose of combining them with the figures for Australian operations. Because income statement accounts are generally converted at average foreign exchange rates and balance sheet accounts are generally converted at year-end or historical rates, converted accounts do not quite balance. The difference is put into equity as a separate item, because it does not seem to fit anywhere else, and it is part of the (converted) residual equity of the owners.

Future value

the amount to which presently held financial assets or liabilities will build up as interest is added to the principal amount invested or borrowed. Often contrasted with present value, which is the future cash flows discounted back to present-day dollars.

Future warranty costs

warranty costs expected to be paid in future years based on the expected warranty expenses related to sales already made.

G**GAAP**

see **Generally accepted accounting principles**.

Gain on sale

gain that occurs when a company receives a larger amount of proceeds for the sale of an asset than its book value.

Gains

a class of income representing other items that meet the definition of income but need not relate to the ordinary activities of an entity.

General journal

an accounting record used mainly to record accrual adjustments (journal entries) not provided for in separate specialised journals.

General ledger

a collection of individual accounts that summarises the entire financial accounting system of an enterprise.

General purpose financial reports

financial reports that are prepared in order to meet the information needs of a range of users who are unable to command information designed for their individual, specific needs.

General reserve

amount of shareholders' funds transferred from retained profits. By transferring to the general reserve account, the company is indicating to shareholders that this amount is not intended to be distributed to shareholders in dividends.

Generally accepted accounting principles (GAAP)

principles and methods of accounting that have the general support of standard-setting bodies, general practice, texts and other sources.

Going concern

a fundamental assumption in financial accounting that a firm will continue to be financially viable. If a firm is not a going concern, normal accounting principles do not apply.

Goods and services tax

the Australian federal sales tax on goods and services (with some exceptions, such as fresh food) that a business collects as a percentage of its own revenue, and remits to the government after deducting any GST the business paid on its own purchases.

Gross profit

sales revenue minus cost of goods sold. Also called gross margin.

GST (goods and services tax)

See **Goods and services tax**.

H**Hedging**

actions that are taken to avoid or minimise the possible adverse effects of changes in exchange rates and market prices (e.g. the price of oil).

Historical cost

the dollar value of a transaction on the date it happens, normally maintained in the accounting records from then on because of accounting's reliance on transactions as the basis for recording events. The cost, or historical cost, of an asset is therefore the dollar amount paid for it or promised to be paid as of the date the asset was acquired.

I**Impairment loss**

the amount by which the carrying amount of an asset exceeds its recoverable amount.

Income

increases in assets, or decreases in liabilities, that result in increases in equity, other than those relating to contributions from holders of equity claims.

Income (profit) smoothing

the manipulation of the announced results for net profit so that the year-to-year variations in reported profit are reduced.

Income statement

a financial statement that summarises the revenues and expenses of a business for a stated period of time and computes the net profit (revenues minus expenses). Sometimes referred to as a profit and loss statement.

Income tax

tax assessed on the profit of a business enterprise or the salary or wage of an individual, according to income tax laws.

Income tax expense

an estimate of the current and future (deferred) income tax arising from the profit, as computed on the income statement and matched to the revenues and expenses shown on the statement.

Income tax payable

the liability for the amount of income tax due on the year's profit, calculated according to the income tax law, whether or not it matches the Income tax expense.

Indirect energy and emission sources

energy consumption or production undertaken at, and greenhouse emissions arising from, operations over which another business has the authority to introduce and implement operating, environmental and health and safety policies.

Indirect method of cash flow analysis

the method of deriving the cash flow from operations section of the statement of cash flows by adjusting net profit for non-cash items.

Information system

an organised and systematic way of providing information to decision-makers. Accounting is an information system.

Intangible assets

non-physical noncurrent assets such as copyrights, patents, trademarks, import and export licences, other rights that give a firm an exclusive or preferred position in the marketplace, and goodwill.

Integrated reporting

brings together material information about an organisation's strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates. It provides a clear and concise representation of how an organisation demonstrates stewardship and how it creates and sustains value.

Intercorporate investments

investments by one company in other companies.

Interest

the amount charged by a lender for the use of borrowed money.

Interest coverage ratio

usually calculated as (profit before interest expense and income tax) ÷ interest expense.

Internal control

A process, brought about by an entity's board of directors, management and other personnel, that is designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

- effectiveness and efficiency of operations
- reliability of financial reporting
- compliance with applicable laws and regulations.

Internal transactions

transactions recorded by the entity that do not result from transacting with a third party but are book entries only; for example, depreciation entries and using up supplies.

International Accounting Standards Board (IASB)

the committee that sets international accounting standards; made up of representatives from more than 50 countries.

Inventory(ies)

goods that are purchased or manufactured by a company for sale, resale or further use in operations, including finished goods, goods in process, raw materials and supplies.

Inventory costing

comprises various methods of determining the cost of inventory for balance sheet valuation purposes and valuing cost of goods sold. The more common methods are FIFO, LIFO and weighted average.

Inventory turnover

cost of goods sold expense ÷ average inventory assets.

Investments

assets, such as shares or bonds, that are held for their financial return (e.g. interest or dividends) rather than for their use in the enterprise's operations.

Investors

people who own investments and who, because of their interest in the value of those shares or bonds, are interested in information about the enterprises issuing such shares and bonds.

J

Journal entry

a record of a transaction or accrual adjustment that lists the accounts affected, and in which the total of the debits equals the total of the credits.

Journals

chronological or primary records in which accounting transactions of a similar nature are permanently recorded.

L

Last in, first out

a cost-flow assumption that is the opposite of FIFO. Last in, first out assumes that the units sold are from the most recent purchases. It therefore bases the cost of goods sold on the most recent purchases and ending inventory on the oldest purchases.

Lease

a contract requiring the user of an asset to pay the owner of the asset a predetermined fee for the use of the asset.

Ledger

any book or electronic record that summarises the transactions from the books of original entry in the form of accounts.

Leverage

the increased rate of return on owners' equity when assets earn a return larger than the interest rate paid for the debt financing of them. Also refers to a measure of the amount of debt issued compared to shareholders' equity. The greater the proportion of debt, the higher the leverage.

Leverage ratio

the ratio of total assets divided by shareholders' equity.

Liability

a present obligation of the entity to transfer an economic resource as a result of past events.

LIFO

See [Last in, first out](#).

Line of credit

advance approval from a bank to borrow money under agreed conditions. A line of credit usually means that the borrower can get the money as needed (e.g. when the bank account is overdrawn), without further approval.

Listed (shares)

a listed company (corporation) is one whose shares are available for trading on a stock exchange.

Long service leave

in Australia, leave granted to an employee who stays with the same employer for a minimum number of years (often 10 years).

Loss, losses

usually refers to the case of a negative return (proceeds being less than book value) obtained from the disposition of assets (or liabilities) not normally disposed of in the daily course of business, such as from selling land, buildings or other noncurrent assets, or from refinancing debt.

Loss on sale

the deficit that occurs when the asset's book value is more than the proceeds received from the sale of the asset.

Lower of cost or market value

a method of valuing items of inventory where inventory is valued at the lower of original cost or market value (that is, net realisable value).

M

Management accounting

accounting information that is designed to aid management in its operation and control of the firm and in its general decision-making. Different from financial accounting, which is aimed primarily at users who are external to the firm.

Manipulation

the accusation that management, in choosing its accounting and disclosure policies, attempts to make the performance and position measures suit its wishes.

Market capitalisation

an estimate of the value of a listed public company which is made by multiplying the current share price by the number of shares issued and outstanding.

Market value

the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's-length transaction.

Marketable securities

investments that have a ready market for resale and are held as a way of earning a return from temporarily unneeded cash. Typically they are debentures, shares, options or bonds that can be easily sold in the short term.

Matching

the concept of recognising expenses in the same accounting period in which the related revenues are recognised.

Materiality, material

the magnitude of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that a reasonable person relying on the information would have had their judgement changed or influenced by the omission or misstatement. A decision not to disclose certain information may be made because the amounts involved are too small to make a difference (it is not material).

Measurement, measuring

the attachment of dollar figures to assets, liabilities, revenues and expenses in order to produce the figures (values) on the balance sheet and to enable the computation of profit (revenues minus expenses) and equity (assets minus liabilities).

Minority interest

the portion of a subsidiary company that is included in consolidated financial statements and is not owned by the controlling (majority) owners of the parent company.

Moving average cost

see [Average cost](#).

N

Net book value

the cost of an asset minus any accumulated depreciation, amortisation, allowance for doubtful debts and so on.

Net loss

negative net profit.

Net-of-tax analysis

a method of determining the impact of management decisions or accounting changes by which the effects of income tax are included to produce the net after-tax effect of the decision or change.

Net present value

for a project or object, the present value of future cash inflows minus the present value of future cash outflows.

Net profit

the residual after deduction of expenses from revenues.

Net realisable value

the fair market value that an asset will bring if it is sold through the usual product market minus any completion or disposal costs.

Noncurrent assets

assets expected to bring benefit for more than one fiscal year.

Noncurrent liabilities

liabilities expected to be repaid or otherwise removed more than one year in the future.

Notes payable

accounts payable that are supported by signed contracts or other agreements and usually carry interest. Often employed to describe financing that is obtained from banks, and other financial institutions, and drawn on to provide operating funds (or funds for construction before completion of projects) and obtain more secured financing, such as a mortgage.

Notes receivable

accounts receivable supported by signed contracts or other agreements specifying repayment terms, the interest rate and other conditions.

Notes to the financial statements

notes appended to the statements, providing information about the accounting policies chosen and other supplementary information helpful to interpreting the figures.

O

Objectivity

the notion that the information in financial statements must be as free from bias as possible so that all user groups can have confidence in it. An accountant attempts to record and report data that are based on objective sources to make the data more acceptable to outside parties.

Off balance sheet financing

methods of obtaining financing that avoid having to record the sources as liabilities or equity.

Operating activities

the part of a statement of cash flows that relates to the provision of goods and services.

Ordinary shares

the basic voting ownership interests in a company.

Overdraft

a negative bank account balance (withdrawals exceeding deposits), which banks may allow as a de facto loan as long as it is temporary.

Overhead cost

the costs of manufacturing inventories or constructing other assets that are incurred indirectly, such as heat, power and supervisors' salaries.

Owner's capital

the owner's equity of the proprietor of an unincorporated business.

P

Parent

an entity that controls another entity, the name of which is usually used in the consolidated financial statements.

PE ratio (P/E ratio)

the price-to-earnings ratio is calculated as the current price of a share in the company divided by its earnings per share.

Percentage of completion

a method of allocating revenue (and associated expenses) over several fiscal periods during which the revenue is earned. Used for long-term construction contracts, franchise revenue and similar multi-period revenues.

Petty cash

a fund set up to make small cash payments.

Posting

the transfer of journal entries to ledger accounts, thereby making them permanent. The only way to fix a mistake is to use an adjusting or correcting entry and post that.

Preference shares

ownership shares that have special rights in addition to (or instead of) those accompanying ordinary shares.

Preparers

managers and accountants who produce financial statements.

Prepayments (prepaid expenses)

expenses that have been paid but not yet incurred; an expenditure recorded as a current asset because the benefit will be obtained in the near future (e.g. insurance coverage good for the next year).

Present value

future cash inflows or outflows reduced to their present amount by removing from them the interest that could have been earned or paid had the money been on hand for investment today.

Present value analysis

analysis of future cash flows by removing the presumed interest components of those flows.

Price-level-adjusted historical cost

a rarely used asset valuation method by which the historical cost of each asset is revalued for inflation.

Price-to-earnings ratio (P/E ratio)

see PE ratio.

Principal-agent theory

see Agency theory.

Profit

the excess of revenues over expenses. The (net) profit of a business is the residual after deduction of expenses from revenues. Also referred to as income or earnings.

Profit before (income) tax

an amount equal to revenue minus all other ordinary expenses except income tax. Some non-taxed or special items, such as extraordinary items, are placed after income tax has been deducted, and are therefore not part of profit before income tax.

Profit margin

the percentage of sales revenue that ends up as profit; hence it is the average profit for each dollar of sales.

Property, plant and equipment

noncurrent assets that are tangible, and are used in the operating activity of an entity.

Prospectus

a formal document, which includes detailed financial information, that is required by law when a company invites the public to subscribe to its securities.

Provision

a liability of uncertain timing or amount.

Provision for employee entitlements

a liability for future economic benefits to be paid to employees that employees accumulate as a result of the rendering of their services to an employer up to the reporting date. They include, but are not limited to, wages and salaries (including fringe benefits and nonmonetary benefits), annual leave, sick leave, long service leave, superannuation and other post-employment benefits.

Purchase order

a document used when a formal request to buy products or services is made.

Q**Quick ratio**

cash, temporary investments and accounts receivable divided by current liabilities. Also called the acid test ratio.

R**Ratios, ratio analysis**

numbers produced by dividing one financial statement figure by another figure; for example, the working capital ratio is

the total current assets figure divided by the total current liabilities figure. Standard ratios are used to assess aspects of a firm – particularly profitability, solvency and liquidity.

Realised

used in this book as a synonym for 'received' or 'collected'. Revenue is recognised when it is earned, but that is usually before it is collected, or realised.

Reclassification (entry)

a journal entry or the repositioning of an account that changes the location of the account within the balance sheet or within the income statement but does not affect profit.

Recognition

The process of giving effect, in the accounts, to revenue believed to be earned, or expenses believed to be incurred, before (or after) the cash is collected or paid.

Reconcile, reconciliation

the analysis technique of comparing two sets of information that relate to the same account or activity and identifying differences that indicate errors in either or both records.

See Bank reconciliation.

Record-keeping

the bookkeeping methods and other methods used to create the underlying records on which accounting information is based.

Reducing balance depreciation

an accelerated depreciation method by which the annual depreciation expense is calculated as a fixed percentage of the book value of the asset, which declines over time as depreciation is deducted.

Relevance

the capacity of information to make a difference in a decision by helping users to form predictions about the outcomes of past, present and future events or to confirm or correct prior expectations.

Replacement cost

the price that will have to be paid in order to replace an existing asset with a similar asset. This amount is likely to be different from fair market value or net realisable value.

Retail inventory method

the provision of internal control and the deducing of inventory amounts for financial statements by using ratios of cost to selling price; for example, deducing the cost of goods sold from sales revenue minus the mark-up on cost. Ending inventory cost can be determined by measuring inventory at retail prices minus mark-up.

Retained profits (retained earnings)

profits not yet distributed to owners; the sum of net profits earned over the life of a company, less distributions (dividends declared) to owners.

Return on assets (ROA)

net profit, before deducting interest expense and tax, divided by total assets. This measures the operating return before the cost of financing.

Return on equity (ROE)

net profit divided by owners' equity. The most frequently used ratio for measuring the business's return to owners.

Return on investment (ROI)

a general term for measures of return related to the investment needed to earn the return.

Revaluation

the act of recognising a reassessment of the values of noncurrent assets, as at a particular date.

Revaluation decrement

the amount by which the revalued carrying amount of noncurrent assets, as at the revaluation date, is less than its previous carrying amount.

Revaluation increment

the amount by which the revalued carrying amount of a noncurrent asset, as at the revaluation date, exceeds its previous carrying amount.

Revenue

a class of income relating, typically, to the ordinary activities of an entity.

Revenue received in advance

a liability account used for customer deposits or other cash receipts before the completion of the sale (e.g. before delivery).

Revenue recognition

the entry into the accounts of the amount of revenue determined, according to the firm's accounting policies, to be attributable to the current period.

Risk

the probable variability in possible future outcomes above and below the expected level of outcomes (e.g. returns), but especially below. Risk and return go hand in hand, because a high risk should mean a higher potential return, and vice versa.

S

Sales invoice

a document containing the details of a sale.

Sales journal

a record of sales made, used to produce the revenue data in the accounts.

Scope 1 emissions

all direct emissions; that is, all emissions over which a company has direct control.

Scope 2 emissions

a particular type of indirect emission; that is, emissions over which a company has only indirect control arising from the generation of purchased electricity, heat or steam.

Scope 3 emissions

all other indirect emissions; that is, all emissions over which a company has only indirect control arising from any emissions source other than electricity, heat or steam purchased by that company.

Securities

shares, bonds and other financial instruments issued by companies and governments, and usually traded on capital markets.

Segregation of duties

an internal control technique whereby tasks that involve sensitive assets, such as cash, accounts receivable or inventories, are divided up so one person does not both handle the asset and keep the records of the asset.

Share buyback

a process by which a company buys its own shares at market value on the stock exchange, then cancels them to reduce the total number of shares on issue. Allowed under certain conditions as specified in the Corporations Law.

Share capital

the portion of a company's equity obtained by issuing shares in return for cash or other considerations.

Share dividend

a dividend that is paid by issuing more shares to present shareholders rather than paying them cash.

Share split

the reissue of shares in which the number of new shares is some multiple of the previous number. For example, a two-for-one split results in a shareholder owning twice as many shares as before. Because there has only been a change in the number of shares, not in the underlying value of the company, the share price should fall in accordance with the split (therefore, the new shares should have a share price that is about half the previous price).

Share (stock) market

a capital market in which equity shares are traded. Often used as a generic term for capital markets.

Shareholders

the holders of a company's share capital; therefore, the owners of the company.

Shareholders' equity

the sum of shareholders' direct investment (share capital) and indirect investment (retained profits and reserves).

Shares (stock)

units of share capital, evidenced by certificates and, for public companies, traded on capital markets with other securities.

Significant influence

a company, which is not a subsidiary of an investor company, over which the investor has significant influence (generally 20–50 per cent ownership) but not control.

Stakeholder engagement

the identification of an organisation's stakeholders and the prioritising of this list of stakeholders.

Statement of cash flows (cash flow statement)

a statement that explains the changes in cash equivalent balances during a fiscal period.

Statement of financial position

see **Balance sheet**. From 2001 to 2004 this was called a statement of financial position in published Australian financial statements.

Statement of retained profits

a financial statement or note that summarises the changes in retained profits for the year.

Stewardship

the concept that some persons (such as management) are responsible for looking after the assets and interests of other persons (such as shareholders), and that reports should be prepared that will be suitable to allow the stewards to be held accountable for the actions taken on behalf of the principals.

Stock exchange

a place where shares and other securities are traded.

Stockholder

an alternative term for shareholder; used particularly in the United States.

Straight-line depreciation (amortisation)

a method of computing depreciation (amortisation) simply by dividing the difference between the asset's cost and its expected salvage value by the number of years the asset is expected to be used. The depreciation expense is distributed evenly over the periods that comprise the expected useful life of the asset. The most common depreciation method used in Australia.

Subsidiary ledger

a set of ledger accounts that collectively provide a detailed analysis of one control account in the general ledger.

Sustainability management

concerned with the maintenance and long-term enhancement of different types of capital (including human and social capital) that reflect an organisation's overall impact and wealth.

Sustainability reporting

a broad term to describe an organisation's reporting on its environmental, social and economic performance.

T**Time value of money**

money can earn interest, so money received in the future is worth less in present value terms because the lower amount can be invested to grow to the future amount. Money has a time value because interest accrues over time.

Timeliness

timely information is usable because it relates to current decision needs. Information that is received too late may not be usable because the time for making the decision has already passed by.

Trade discount

a reduction in the selling prices granted to customers.

Trade receivables

Accounts receivable that arise in the normal course of business with customers.

Trial balance

a list of all the general ledger accounts and their balances. The sum of the accounts with debit balances should equal the sum of those with credit balances.

Triple bottom line reporting

the reporting of an organisation's different types of capital related to environmental, social and economic performance. More commonly referred to now as sustainability reporting.

U**Understandability**

one of the concepts underlying the preparation of financial statements is that they should be able to be understood by users who are willing to exercise diligence in examining the reports and who possess the skills and ability to comprehend accounting practices.

Unearned revenue

a liability account used for deposits or other cash receipts before the completion of the sale (e.g. before delivery). Also called deferred revenue and revenue received in advance.

Units-of-production depreciation

a depreciation method where the annual depreciation expense varies directly with the year's production volume.

Useful life

the period over which an asset is expected to be available for use by an entity, or the number of production units, or similar units, expected to be obtained from the asset by an entity.

Users

people who use financial statements to help them decide whether to invest in an enterprise, lend it money or take other action involving financial information.

V**Valuation**

the determination of the amounts at which assets, liabilities and equity should be shown in the balance sheet.

Value in use

the present value of future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life.

W

Wages payable

amounts owing to employees in the form of wages at the end of the pay period.

'What if' (effects) analysis

analysis of the effects on financial statements of economic or accounting policy changes.

Working capital

the difference between current assets and current liabilities.

Working capital ratio

current assets divided by current liabilities.

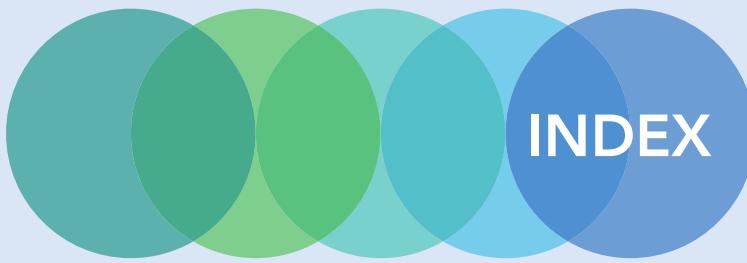
Write-off

refers to the elimination of an asset from the balance sheet. If there is a contra account against the asset already, the write-off is made against the contra, so expense and profit are not affected. If there is no contra account, the write-off (a direct write-off) is made to an expense or loss account, and profit is reduced.

Y

Yield

the effective interest rate earned by a financial instrument such as a bond, given the amount of money received when it was issued.



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