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FINANCIAL MANAGEMENT

Principles and Applications



8th EDITION

FINANCIAL MANAGEMENT

Principles and Applications

To my parents, wife (Meg), and sons (Trevor, Elliot, and Gordon)

SHERIDAN TITMAN

To my son, Josh, and to my friends in the Downtown Investment Club,
from whom I have learned so much about empirical investing over the past 25 years

TONY MARTIN

Barb, Emily, and Artie

ARTHUR J. KEOWN

To the Martin women (my wife Sally and daughter-in-law Mel),
men (sons David and Jess), and boys (grandsons Luke and Burke)

JOHN D. MARTIN



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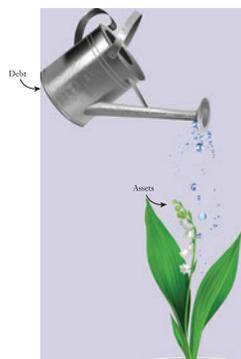
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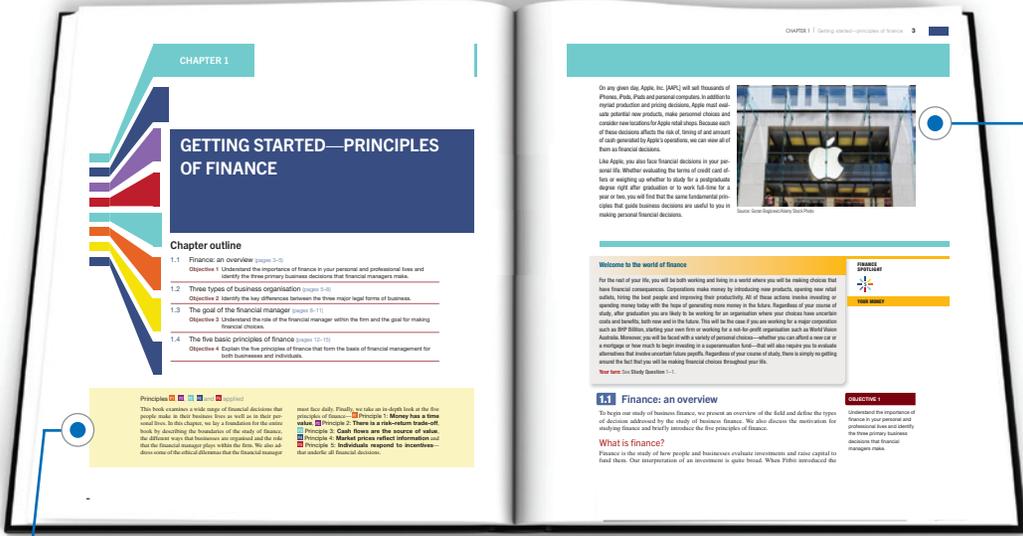
As a final word, I express my sincere thanks to those who are using *Financial Management: Principles and Applications* in the classroom. Thank you for making this eighth edition a part of your teaching/learning experience. Please feel free to contact me, Tony Martin, should you have questions or needs. You can email me at t.martin@latrobe.edu.au or contact me via Pearson Australia.

TONY MARTIN

Logic of Finance

The five principles of finance

Many finance books show students only the mechanics of finance problem solving, but students learn better when given the intuition behind complex concepts. *Financial Management* shows students the reasoning behind financial decisions and connects all topics in the book to five key principles—the **five principles of finance**.



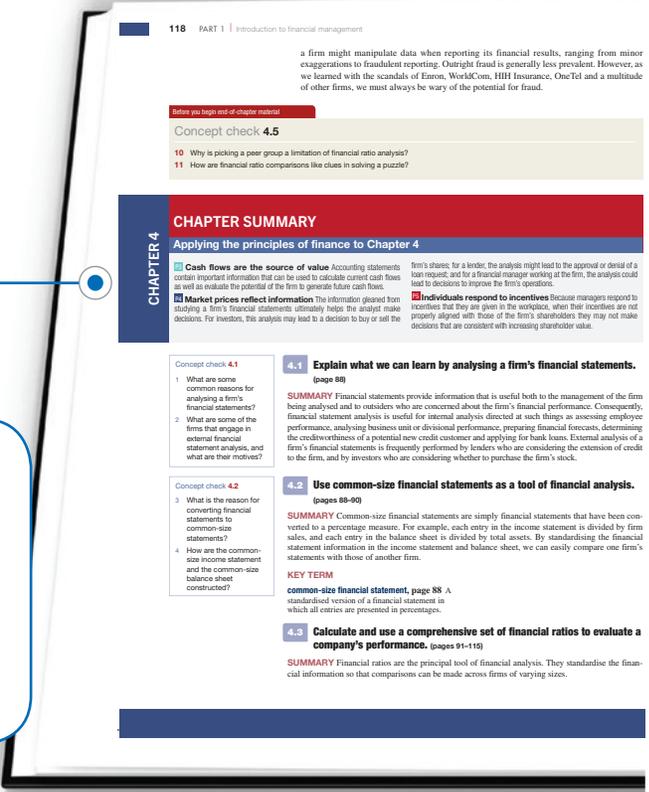
The chapter-opening vignette provides a **real-world example** of the principles of finance applied in the chapter, many times reinforcing them by showing how 'forgetting' a principle might lead to financial troubles.

Each chapter opens with a helpful preview of those **principles of finance** that are illustrated in the coming chapter, so that students can see the underlying and connecting themes and learn to recognise patterns. Principles are colour-coded for quick recognition.

The **summaries** that conclude each chapter review the principles of finance in context, promoting deeper understanding and greater retention of chapter concepts.

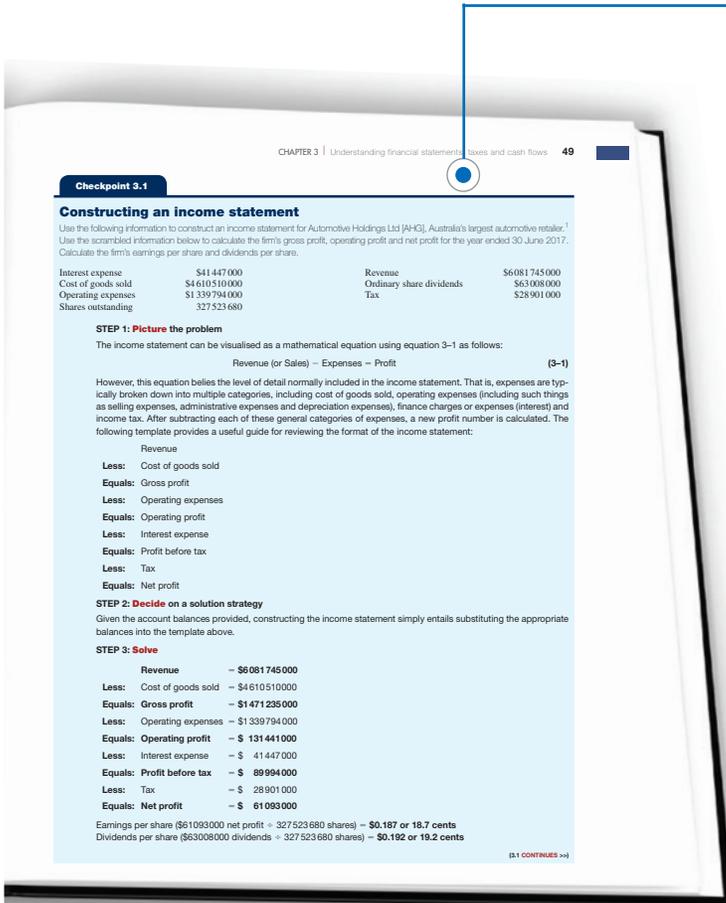
Within the chapter, the authors draw on the five principles of finance to illustrate concepts and explain the rationale behind financial decision making. Look for **P1**, **P2**, **P3**, **P4** and **P5**.

- P1** PRINCIPLE 1: Money has a time value
- P2** PRINCIPLE 2: There is a risk–return trade-off
- P3** PRINCIPLE 3: Cash flows are the source of value
- P4** PRINCIPLE 4: Market prices reflect information
- P5** PRINCIPLE 5: Individuals respond to incentives



Tools for developing study skills

To be successful, finance students need hands-on opportunities to apply what they have learned in ways that go beyond rote memorisation of formulae. By focusing on basic principles of finance, students develop the skills needed to extend their understanding of finance tools beyond formulae and canned answers. The authors' objective is to equip students, no matter what their major or business responsibility might be, to contribute to an analysis of the financial implications of practical business decisions.



Checkpoints provide a consistent problem-solving technique that walks through each problem in five steps, including an analysis of the solution reached. Each Checkpoint concludes with an additional practice problem (and its solution) on the same topic so that students can test their mastery of the problem-solving approach. Then students can put their knowledge to the test by completing the linked end-of-chapter study problem(s).

'Tools of financial analysis' feature boxes provide students with a quick reference source for the decision tools used in financial analysis. This feature appears throughout the book and names each calculation or formula, displays it in equation form, and summarises what it tells you.





PREFACE

The eighth edition of *Financial Management: Principles and Applications* updates our material and further refines our pedagogical approach in ways that make the material much more engaging to all undergraduate students, regardless of their major.

Our approach to financial management

First-time students of finance will find that financial management builds on both economics and accounting. Economics provides much of the theory that underlies our techniques, whereas accounting provides the input or data on which decision making is based. Unfortunately, it is all too easy for students to lose sight of the logic that drives finance and to focus instead on memorising formulae and procedures. As a result, they have a difficult time understanding how the various topics covered in an introductory course tie together, and they do not appreciate how the financial insights might be useful for them personally. More importantly, later in life when students encounter problems that do not fit neatly into the textbook presentation, they may not be able to apply what they have learned.

Our book is designed to overcome these problems. The opening chapter presents five basic principles of finance which are woven throughout the book, creating a text that is tightly bound around these guiding principles. In essence, students are presented with a cohesive, inter-related subject that they can use when approaching future, as yet unknown, problems. We also recognise that most students taking introductory financial management are not majoring in finance, and we include two features that help keep them engaged. At the beginning of each chapter, we include a 'Finance Spotlight' feature box which explains why the issues raised in the chapter are relevant to those students who are not majoring in finance. In addition, throughout the book we have additional 'Finance Spotlight – Your Money' feature boxes that address issues like how to construct a personal investment plan and illustrate how students will be using the tools of financial analysis for personal decisions throughout their lives.

Teaching an introductory finance class while faced with an ever-expanding discipline puts additional pressures on the instructor. What to cover, what to omit, and how to make these decisions while maintaining a cohesive presentation are inescapable questions. In dealing with these questions, we have attempted to present the chapters in a stand-alone fashion so that they can easily be rearranged to fit almost any desired course structure and course length. Because the principles are woven into every chapter, the presentation of the text remains tight, regardless of whether or not the chapters are rearranged. Again, our goal is to provide an enduring understanding of the basic tools and fundamental principles on which finance is based. This foundation will give students beginning their studies in finance a strong base on which to build future studies, and will give students who take only one finance subject a lasting understanding of the basics of finance.

Although historical developments, like the 2008 financial crisis, influence the topics that are included in an introductory finance class, the underlying principles that guide financial analysis remain the same. These principles are presented in an intuitively appealing manner in Chapter 1 and thereafter are tied to all that follows. With a focus on these principles, we provide an introduction to financial decision making that is rooted in financial theory. This focus can be seen in a number of ways, perhaps the most obvious being the attention paid both to valuation and to the capital

markets as well as their influence on corporate financial decisions. What results is an introductory treatment of a discipline rather than the treatment of a series of isolated finance problems. Our goal is to go beyond teaching the tools of financial analysis and help students gain a complete understanding of the subject so that they will be able to apply what they have learned to new and unforeseen problems—in short, to educate students in finance.

For this eighth edition, Tony Martin has carefully updated and refined the seventh edition, which was the original adaptation of the US version of the Titman textbook for Australian students. The local adaptation retains the basic structure and pedagogical approach of the US text but uses recent Australian research and cites real-life Australian examples throughout, drawing on Australian content from previous local editions of this book, and revising the content as needed to reflect an evolving Australian legal and business context.

New to this edition

The eighth edition includes the following key updates:

- updated 'Finance Spotlight' feature boxes that analyse the text discussion of financial management using real-world examples
- updated end-of-chapter study problem sets
- examples that use actual Australian companies and reflect current conditions
- expanded coverage of the impact of changes in exchange rates
- a new chapter on the analysis and impact of leverage, which brings together all of the issues relating to the use of leverage
- data and current event updates throughout

A total learning package

Financial Management is not simply another introductory finance text. It is a total learning package that reflects the vitality of an ever-expanding discipline. Specifically, the eighth edition of *Financial Management: Principles and Applications* was revised to include features with benefits designed to address seven key criteria:

Challenge	Solution
1 Finance books often show the mechanics of finance but do not present the intuition.	<ul style="list-style-type: none"> • The eighth edition utilises five key principles to help students understand financial management so that they can focus on the intuition behind the mechanics of solving problems.
2 Students learn best when they are actively engaged.	<ul style="list-style-type: none"> • A five-step problem-solving technique is used in fully worked-out examples called Checkpoints. These Checkpoints give students an opportunity to pause and test their comprehension of the key quantitative concepts as they are presented. In the fifth step ('Check yourself'), students are given a practice problem similar to the preceding example to attempt on their own.
3 Student understanding and motivation are improved when concepts are applied to topics that have relevance to their lives.	<ul style="list-style-type: none"> • The 'Finance Spotlight – Your Money' feature boxes link important finance concepts to personal finance decisions that will be relevant throughout students' lives. • The opening 'Finance Spotlight' feature boxes in each chapter illustrate that financial decision making often requires a team which includes not only financial analysts but also engineers, operations people, marketing people and accountants. Just as those majoring in finance need to know more than just finance, students pursuing these other disciplines need to know basic financial management to serve effectively on these teams. • The 'Finance Spotlight – International' feature boxes highlight international examples of financial management concepts. • End-of-chapter study questions are linked to these feature boxes to ensure that students have the opportunity to actively engage with the ideas presented.

Challenge	Solution
4 An undergraduate textbook should provide meaningful pedagogical aids to ensure student comprehension and retention.	<ul style="list-style-type: none"> • 'Tools of financial analysis' feature boxes are provided throughout the text; they name the tool being studied, provide its formula and then explain what it tells students. • Each pedagogical feature in the chapter has significance and relevance to the chapter topics, and students are held accountable for the information therein. • Designated end-of-chapter study questions key off the in-chapter feature boxes. • Company scenarios used in chapter-opening vignettes are woven into the chapter body itself. • The end-of-chapter study problems are grouped by major chapter section heads to guide students to the relevant chapter content.
5 Students often struggle with the mathematical rigour of the introductory finance course and need an accessible presentation of the mathematics.	<ul style="list-style-type: none"> • The 'Tools of financial analysis' feature boxes provide students with clearly stated descriptions of what the essential equations or formulae tell them. • We minimise the use of formulae when we can spell things out in plain English. • We use a five-step procedure in our problem examples (called Checkpoints) which begins by visualising the problem graphically, describes a solution methodology, lays out all the necessary steps in the solution, and then interprets the solution by analysing the underlying content of the problem situation. • Financial management is a problem-solving course, so we provide lots of worked examples and have grouped the end-of-chapter materials by major chapter sections to guide students to the relevant segment of the chapter. • Figures are enhanced with notes and 'talking boxes' that step students through the graphs and highlight key points.
6 Instructors find assigning and grading homework too time-consuming.	<ul style="list-style-type: none"> • MyFinanceLab allows instructors to create and assign tests, quizzes or graded assignments with ease. • MyFinanceLab handles the grading.
7 Students often miss the big picture, viewing finance as a presentation of several loosely connected topics.	<ul style="list-style-type: none"> • The opening chapter presents five underlying principles of finance that serve as a springboard for the chapters and topics that follow. In essence, students are presented with a cohesive, inter-related perspective from which future problems can be approached. • The core of finance involves trying to assess the valuation consequences of business decisions in a wide variety of situations. Unfortunately, students often become so enmeshed in the details of a business problem that they have difficulty identifying the valuation consequences of its choices. To give students a context for their analysis, we use five guiding principles that underlie the valuation of any investment. • With a focus on the big picture, we provide an introduction to financial decision making that is rooted in current financial theory and in the current state of world economic conditions. What results is an introductory treatment of a discipline rather than the treatment of a series of isolated problems which face the financial manager. The goal of this text is not merely to teach the tools of a discipline or trade but also to enable students to apply what is learned to new and as yet unforeseen problems—in short, to educate students in finance.

Learning aids in the text

The five principles of finance Together, the five principles—**P1** Money has a time value, **P2** There is a risk–return trade-off, **P3** Cash flows are the source of value, **P4** Market prices reflect information, and **P5** Individuals respond to incentives—represent the economic theory that makes up the foundation of financial decision making and are woven throughout the chapters of the book, providing the basis for focusing students on understanding the economic intuition rather than just the mechanics of solving problems. They are integrated throughout the text in the following ways:

- The five principles are introduced in Chapter 1 using examples that students can relate to personally.

- They are revisited in the chapter openers with reference to their application to each chapter's content.
- Specific reference is made throughout the text where the principles come to bear on the discussion.

A focus on valuation Although many instructors make valuation the central theme of their course, students often lose sight of this focus when reading their text. We have revised this edition to reinforce this focus in the content and organisation of our text in some very concrete ways:

- First, as we mentioned earlier, we have built our discussion around five finance principles which provide the foundation for the valuation of any investment.
- Second, we have introduced new topics in the context of 'What is the value proposition?' and 'How is the value of the enterprise affected?'

Finance Spotlight – Your Money New feature boxes have been introduced to provide students with analysis that is parallel to the text discussion of financial management but uses examples that they are likely to experience in their personal lives. Once again, this pedagogical tool is designed to make the study of finance relevant to all students, regardless of their course.

Real-world examples To enhance the relevance of the topics discussed, we have made extensive use of real-world examples. In addition, stock symbols are provided in square brackets following the names of companies listed on Australian or overseas stock exchanges. This enables students to easily recognise examples that deal with actual listed companies, and to look up stock information themselves if they wish.

NEW! Expanded coverage of the impact of changes in exchange rates A new section titled 'What does a change in the exchange rate mean for business?' examines how exchange rate changes affect imports and exports and the profitability of multinational firms.

NEW! Chapter on the analysis and impact of leverage Content that relates to leverage has been reorganised into a single chapter in order to give a comprehensive analysis of the impact of leverage on a firm.

A multi-step approach to problem solving and analysis As anyone who has taught the core undergraduate finance course knows, students vary across a wide range in terms of their maths comprehension and skills. Students who do not have the maths skills needed to master the subject end up memorising formulae rather than focusing on the analysis of business decisions using maths as a tool. We address this problem in terms of both text content and pedagogy.

- First, we present maths only as a tool to help us analyse problems—and only when necessary. We do not present maths for its own sake.
- Second, finance is an analytical subject and requires that students be able to solve problems. To help with this process, numbered chapter examples called Checkpoints appear throughout the book. Each of these examples follows a very detailed, multi-step approach to problem solving that helps students develop their own problem-solving skills.

Step 1: Picture the problem. For example, if the problem involves a cash flow, we will first sketch the timeline. This step also entails writing down everything we know about the problem, which includes any relationships such as what fraction of the cash flow is to be distributed to each of the parties involved and when it is to be received or paid.

Step 2: Decide on a solution strategy. For example, what is the appropriate formula to apply? How can a calculator or spreadsheet be used to 'crunch the numbers'?

Step 3: Solve. Here we provide a complete, step-by-step worked solution. We first present a description of the solution in prose and then provide a corresponding mathematical implementation.

Step 4: Analyse. We end each solution with an analysis of what the solution means. This emphasises the point that problem solving is about analysis and decision making. Moreover, at this step we emphasise the fact that decisions are often based on incomplete information, which requires the exercise of managerial judgment, a fact of life that is often learned on the job.

Step 5: Check yourself. Immediately following the presentation of each new problem type, we include a practice problem that gives students the opportunity to practise the type of calculation used in the example.

Content-enriched tables and figures Students today are visual learners. They are used to scanning Internet sites to learn at a glance without the need to ferret out the meaning of a printed page. Rather than seeing this as a negative, we instead believe that students (and we) are all the beneficiaries of a media revolution that allows us to learn quickly and easily using graphic design and interactive software. Textbooks have been slow to respond to this new way of absorbing information. In this text, the key elements of each chapter in the book can quite literally be gleaned (reviewed) from the chapter tables, figures and examples. This means that all tables and figures are 'content-enriched'. They are captioned, labelled in detail and carefully linked so as to make them useful as a stand-alone tool for reviewing the chapter content.

Finance Spotlight – Your Money These feature boxes apply the chapter concepts to personal financial problems that students encounter in their daily lives.

Finance Spotlight – International These feature boxes demonstrate how the chapter content applies to international business.

Figure call-outs Many figures include floating call-outs with descriptive annotations designed to highlight key points in the figures and facilitate student learning.

Figure and table captions Detailed captions describe the objective of each figure or table and provide necessary background information so that its content can be easily understood. This allows students to review the chapter content by scanning the figures and tables directly.

Equations Equations are written in plain English with minimal use of acronyms and abbreviations. In addition, 'Tools of financial analysis' feature boxes are used throughout the book to provide a quick review and reference guide for critical equations used to support financial decision making.

Financial spreadsheets and calculators The use of financial spreadsheets and calculators has been integrated throughout the text. Thus, students have access to both methods of problem solving.

Chapter summaries The chapter summaries have been rewritten and are organised around the chapter objectives.

Study questions These end-of-chapter questions review the main concepts in the chapter and are presented in the order in which these concepts were discussed in the chapter, for easy student reference.

NEW! Expanded study problem sets Focusing on chapters with high problem usage, the end-of-chapter study problem sets have been strategically expanded to provide better problem choices for the instructor. As in the previous edition, all study problems are grouped by chapter section so that both instructors and students can readily align text and problem materials. Where actual company examples are used, problems have been updated to reflect current conditions. In most chapters, the problem set concludes with a 'mini-case' which brings together many of the themes covered in the chapter in a single, comprehensive, hypothetical or real-world example.

Content updating

In response to the continued development of financial thought, reviewer comments and the recent economic crisis, changes have been made in the text. The following list highlights some of the important changes that were made in each of the book's 21 chapters.

Chapter 1

GETTING STARTED—PRINCIPLES OF FINANCE

- The discussion of the five principles of finance has been revised, increasing its currency.
- This chapter has been updated and revised to make it as intuitive as possible.
- New Australian examples have been added.

Chapter 2

FIRMS AND THE FINANCIAL MARKET

- This chapter has been revised to reflect the recent changes in interest rates and in the financial markets.
- The discussion of how securities markets bring corporations and investors together has been revised to reflect the current financial markets.
- The study questions have been updated and revised.

Chapter 3

UNDERSTANDING FINANCIAL STATEMENTS, TAXES AND CASH FLOWS

- Checkpoints within the chapter content have been updated to include current data and rewritten to reflect changing financial conditions.
- Company examples used in the problem exercises have been updated to reflect current information.
- The section on company tax has been augmented with a detailed discussion of the calculation of personal income tax and capital gains tax.

Chapter 4

FINANCIAL ANALYSIS: SIZING UP FIRM PERFORMANCE

- Checkpoints within the chapter have been updated to include current data and rewritten to reflect changing conditions.

Chapter 5

THE TIME VALUE OF MONEY—THE BASICS

- The coverage of payday loans and of the equivalent annual return have been updated, reflecting a current example.
- This chapter has been revised with an eye towards making it more accessible to maths-phobic students.
- The study questions have been updated and revised.

Chapter 6

THE TIME VALUE OF MONEY—ANNUITIES AND OTHER TOPICS

- The chapter discussion has been reworked to make it more accessible to those students who are maths-phobic.

Chapter 7

RISK AND RETURN—AN INTRODUCTION: HISTORY OF FINANCIAL MARKET RETURNS

- All tables and figures have been updated to reflect historical rates of return that investors have earned for different types of security investment.

- The discussion of the geometric and arithmetic means has been revised to make the importance of the type of mean used in our analysis of historical returns more transparent.
- Selected study problems have been revised.

Chapter 8

RISK AND RETURN—CAPITAL MARKET THEORY

- The discussion of beta and its estimation from historical return data has been revised. The example company used for this discussion is now Woolworths Ltd [WOW].
- Selected study problems have been revised.

Chapter 9

DEBT VALUATION AND INTEREST RATES

- The examples have been updated and revised to reflect the current level of interest rates with new examples of borrowing.
- This chapter has been revised to incorporate the very low interest rate levels in the financial markets.
- The discussion of the bond valuation relationship has been revised.

Chapter 10

SHARE VALUATION

- The discussion of the stock market, which is covered in Chapter 2, has been dropped due to its redundancy.
- The study questions have been updated and revised.

Chapter 11

INVESTMENT DECISION CRITERIA

- The modified internal rate of return (MIRR) discussion has been revised to focus on the origins of the situations in which the analyst will find the MIRR helpful in making an investment decision.
- The study problem set has been substantially revised.

Chapter 12

ANALYSING PROJECT CASH FLOWS

- The 'Quick Reference' tool for free cash flow has been replaced with an expanded 'Tools of financial analysis' feature box.
- The study problem set has been substantially revised.

Chapter 13

RISK ANALYSIS AND PROJECT EVALUATION

- The study problem set has been substantially revised.

Chapter 14

THE COST OF CAPITAL

- The study problem set has been substantially revised.

Chapter 15

ANALYSIS AND IMPACT OF LEVERAGE

- This new chapter reorganises all content relating to leverage to give a comprehensive overview of the impact of leverage on a firm.

Chapter 16

CAPITAL-STRUCTURE POLICY

- The study problem set has been substantially revised.

Chapter 17

DIVIDEND AND SHARE-BUYBACK POLICY

- Figure 17.1, which looks at corporate earnings, cash dividends and share buybacks for a broad cross-section of Australian firms, has been updated and now covers the period between 2009 and 2015.
- A number of the chapter's study problems have been revised.

Chapter 18

FINANCIAL FORECASTING AND PLANNING

- The study problem set has been substantially revised.

Chapter 19

WORKING CAPITAL MANAGEMENT

- The study problem set has been substantially revised.

Chapter 20

INTERNATIONAL BUSINESS FINANCE

- This chapter has been revised and updated to reflect dramatic changes in exchange rates and in the global financial markets in general.
- A new section titled 'What does a change in the exchange rate mean for business?' has been added.

Chapter 21

CORPORATE RISK MANAGEMENT

- This chapter has been revised to reflect changes in the area of corporate risk management and to allow for a more intuitive presentation.

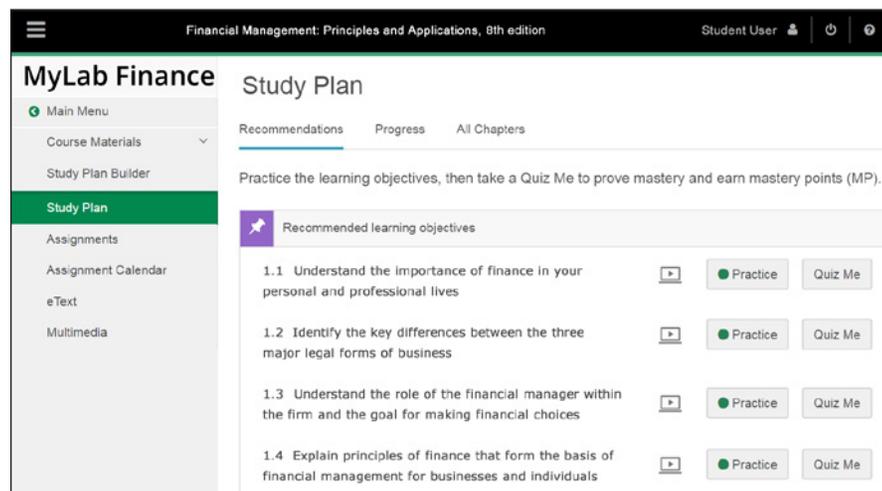
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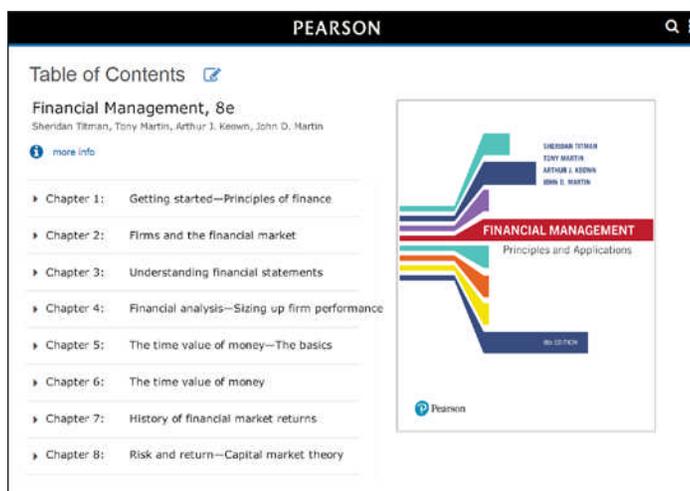


The screenshot shows the MyLab Finance interface for the course 'Financial Management: Principles and Applications, 8th edition'. The 'Study Plan' section is active, displaying 'Recommended learning objectives' with four items. Each item includes a description, a 'Practice' button, and a 'Quiz Me' button. The objectives are:

- 1.1 Understand the importance of finance in your personal and professional lives
- 1.2 Identify the key differences between the three major legal forms of business
- 1.3 Understand the role of the financial manager within the firm and the goal for making financial choices
- 1.4 Explain principles of finance that form the basis of financial management for businesses and individuals

Study Plan

A Study Plan is generated from each student's results on a pre-test. Students can clearly see which topics they have mastered and, more importantly, which they need to work on.



The screenshot shows the Pearson Table of Contents for 'Financial Management, 8e' by Sheridan Titman, Tony Martin, Arthur J. Keown, and John D. Martin. The table lists eight chapters:

- Chapter 1: Getting started—Principles of finance
- Chapter 2: Firms and the financial market
- Chapter 3: Understanding financial statements
- Chapter 4: Financial analysis—Sizing up firm performance
- Chapter 5: The time value of money—The basics
- Chapter 6: The time value of money
- Chapter 7: History of financial market returns
- Chapter 8: Risk and return—Capital market theory

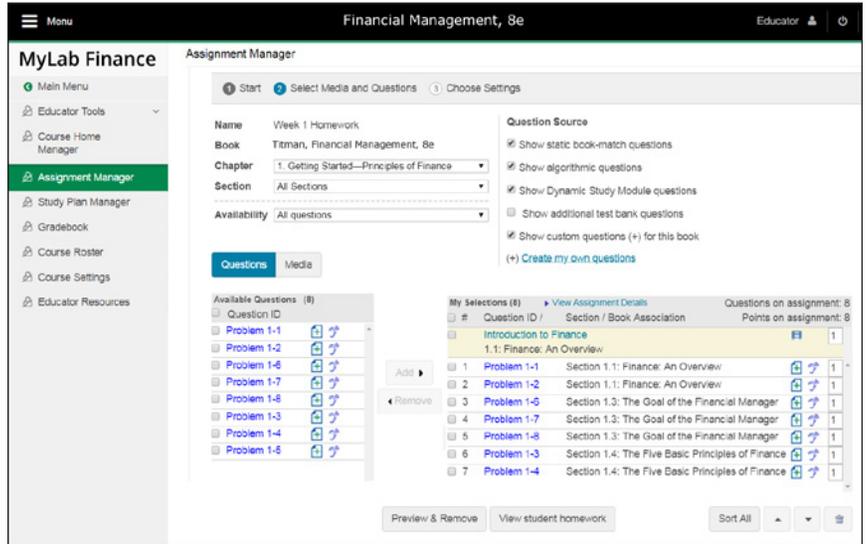
Learning resources

To further reinforce understanding, Study Plan and Homework problems link to the following learning resources:

- the relevant section of the eText, so students can review key concepts
- Help Me Solve This, which walks students through the problem with step-by-step help and feedback without giving away the answer.

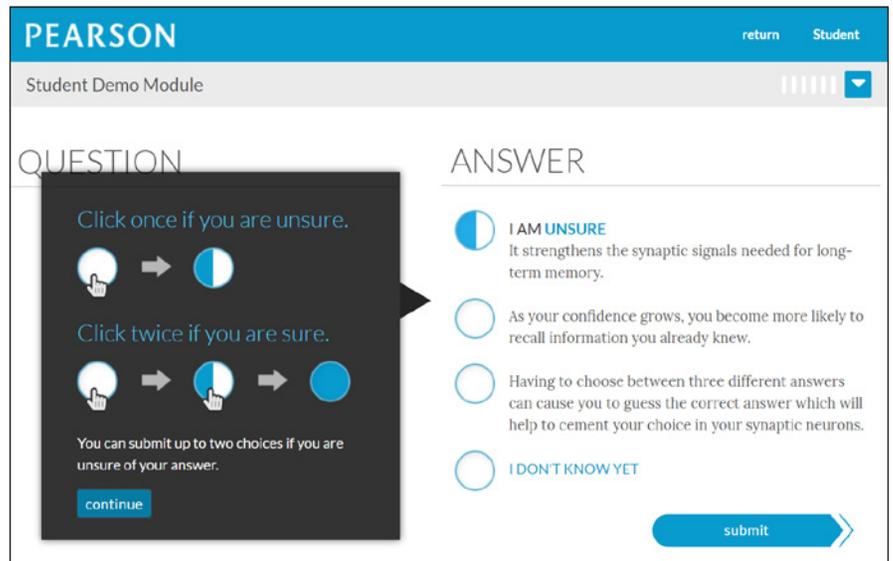
Assignable content

Educators can select content from the Study Plan and/or Test Bank and assign to students as homework or quizzes.



Dynamic Study Modules

Using a highly-personalised process, Dynamic Study Modules continuously assess students' performance and provide additional practice in the areas where they struggle the most. Students can then review material and retest themselves until they 'master' the information. Each Dynamic Study Module, accessed by computer, smartphone or tablet, promotes fast learning and long-term retention.



Learning aids supplemental to the text

Financial Management integrates the most advanced technology available to assist students and instructors. Not only does this make Financial Management come alive with the most current information, but it also fosters total understanding of all the tools and concepts necessary to master the course. Financial Management's complete support package for students and instructors includes the following essentials.

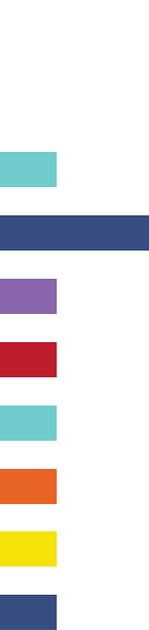
Solutions Manual The Solutions Manual provides educators with detailed, accuracy-verified solutions to in-chapter and end-of-chapter problems in the book.

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Questions can be integrated into Blackboard, Canvas or Moodle Learning Management Systems.

Lecture slides A comprehensive set of PowerPoint slides can be used by educators for class presentations or by students for lecture preview or review. They include key figures and tables, as well as a summary of key concepts and examples from the course content.

Digital image PowerPoints These slides include all the diagrams and tables from the course content for lecturer use.



Part 1

Introduction to financial management

CHAPTER 1

GETTING STARTED—PRINCIPLES OF FINANCE

Chapter outline

- 1.1 Finance: an overview (pages 3–5)
Objective 1 Understand the importance of finance in your personal and professional lives and identify the three primary business decisions that financial managers make.

- 1.2 Three types of business organisation (pages 5–8)
Objective 2 Identify the key differences between the three major legal forms of business.

- 1.3 The goal of the financial manager (pages 8–11)
Objective 3 Understand the role of the financial manager within the firm and the goal for making financial choices.

- 1.4 The five basic principles of finance (pages 12–15)
Objective 4 Explain the five principles of finance that form the basis of financial management for both businesses and individuals.

Principles P1, P2, P3, P4 and P5 applied

This book examines a wide range of financial decisions that people make in their business lives as well as in their personal lives. In this chapter, we lay a foundation for the entire book by describing the boundaries of the study of finance, the different ways that businesses are organised and the role that the financial manager plays within the firm. We also address some of the ethical dilemmas that the financial manager

must face daily. Finally, we take an in-depth look at the five principles of finance—**P1** Principle 1: **Money has a time value**, **P2** Principle 2: **There is a risk–return trade-off**, **P3** Principle 3: **Cash flows are the source of value**, **P4** Principle 4: **Market prices reflect information** and **P5** Principle 5: **Individuals respond to incentives**—that underlie all financial decisions.

On any given day, Apple, Inc. [AAPL] will sell thousands of iPhones, iPods, iPads and personal computers. In addition to myriad production and pricing decisions, Apple must evaluate potential new products, make personnel choices and consider new locations for Apple retail shops. Because each of these decisions affects the risk of, timing of and amount of cash generated by Apple's operations, we can view all of them as financial decisions.

Like Apple, you also face financial decisions in your personal life. Whether evaluating the terms of credit card offers or weighing up whether to study for a postgraduate degree right after graduation or to work full-time for a year or two, you will find that the same fundamental principles that guide business decisions are useful to you in making personal financial decisions.



Source: Goran Bogicevic/Alamy Stock Photo

Welcome to the world of finance

For the rest of your life, you will be both working and living in a world where you will be making choices that have financial consequences. Corporations make money by introducing new products, opening new retail outlets, hiring the best people and improving their productivity. All of these actions involve investing or spending money today with the hope of generating more money in the future. Regardless of your course of study, after graduation you are likely to be working for an organisation where your choices have uncertain costs and benefits, both now and in the future. This will be the case if you are working for a major corporation such as BHP Billiton, starting your own firm or working for a not-for-profit organisation such as World Vision Australia. Moreover, you will be faced with a variety of personal choices—whether you can afford a new car or a mortgage or how much to begin investing in a superannuation fund—that will also require you to evaluate alternatives that involve uncertain future payoffs. Regardless of your course of study, there is simply no getting around the fact that you will be making financial choices throughout your life.

Your turn: See **Study Question 1–1**.

FINANCE SPOTLIGHT



YOUR MONEY

1.1 Finance: an overview

To begin our study of business finance, we present an overview of the field and define the types of decision addressed by the study of business finance. We also discuss the motivation for studying finance and briefly introduce the five principles of finance.

What is finance?

Finance is the study of how people and businesses evaluate investments and raise capital to fund them. Our interpretation of an investment is quite broad. When Fitbit introduced the

OBJECTIVE 1

Understand the importance of finance in your personal and professional lives and identify the three primary business decisions that financial managers make.

Fitbit Blaze, an activity-focused smartwatch, in 2016 it was clearly making a long-term investment. The firm had to devote considerable expense to designing, producing and marketing the smartwatch in the hope that it would eventually capture a sufficient amount of market share from the Apple Watch and the Android Wear smartwatch to make the investment worthwhile. But Fitbit also makes an investment decision whenever it hires a new graduate, knowing that it will be paying a salary for at least six months before this employee will have much to contribute.

Thus, three basic questions are addressed by the study of finance:

- 1 **What long-term investments should the firm undertake?** This area of finance is generally referred to as **capital budgeting**.
- 2 **How should the firm raise money to fund these investments?** The firm's funding choices are generally referred to as **capital structure** decisions.
- 3 **How can the firm best manage its cash flows as they arise in its day-to-day operations?** This area of finance is generally referred to as **working capital management**.

We will be looking at each of these three areas of business finance—capital budgeting, capital structure and working capital management—in the chapters ahead.

Why study finance?

Even if you are not planning a career in finance, a working knowledge of finance will take you far in both your personal and professional lives.

Those interested in management will need to study such topics as strategic planning, personnel, organisational behaviour and human relations, all of which involve spending money today in the hope of generating more money in the future. For example, in 2016 General Motors [GM] made a strategic decision to invest US\$500 million in the ride-hailing start-up Lyft. GM and Lyft have joined together to develop a network of self-driving cars that riders can call up on demand; in the short run, GM will provide cars to Lyft drivers through short-term rentals in key US cities. This was, to say the least, a major strategic decision that will impact on both GM and Lyft for many years.

Similarly, marketing graduates need to understand and decide how aggressively to price products and how much to spend on advertising those products. Because aggressive marketing costs money today but generates rewards in the future, it should be viewed as an investment that the firm needs to finance. Production and operations management graduates need to understand how best to manage a firm's production and control its inventory and supply chain. These are all topics that involve risky choices that relate to the management of money over time, which is the central focus of finance.

Although finance is primarily about the management of money, a key component of finance is the management and interpretation of information. Indeed, if you pursue a career in management information systems or accounting, finance managers are likely to be your most important clients.

For the student with entrepreneurial aspirations, an understanding of finance is essential—after all, if you can't manage your finances you won't be in business very long.

Finally, an understanding of finance is important to you as an individual. The fact that you are reading this book indicates that you understand the importance of investing in yourself. By obtaining a university degree, you are clearly making sacrifices in the hope of making yourself more employable and improving your chances of having a rewarding and challenging career. Some of you are relying on your own earnings and the earnings of your parents to finance your education, whereas others are raising money or borrowing it from the **financial markets**, institutions that facilitate financial transactions.

Financial decisions are everywhere, both in your personal life and in your career. Although the primary focus of this book is on developing the corporate finance tools and techniques that are used in the business world, you will find that much of the logic and many of the tools we develop and explore along the way will also apply to decisions you will be making in your own personal life. In the future, both your business and personal lives will be spent in the world of

finance—and because you are going to be living in that world, it's time to learn about its basic principles.

We will take an in-depth look at these principles at the end of this chapter. As you will see, you do not need an extensive knowledge of finance to understand these principles, and, once you know and understand them, they will help you understand the rest of the concepts presented in this book. When you are looking at more-complex financial concepts, think of these principles as taking you back to the roots of finance.

Before you move on to 1.2

Concept check 1.1

- 1 What are the three basic types of issue that arise in business that are addressed by the study of business finance?
- 2 List three non-finance careers to which the study of finance applies.

1.2 Three types of business organisation

Although numerous and diverse, the legal forms of business organisation fall into three categories: the sole proprietorship, the partnership and the corporation. Table 1.1 (overleaf) provides a quick reference guide for organisational forms.

OBJECTIVE 2

Identify the key differences between the three major legal forms of business.

Sole proprietorship

The **sole proprietorship** is a business owned by a single individual who is entitled to all of the firm's profits and is also responsible for all of the firm's **debt** (what the firm owes). In effect, there is no separation between the business and the owner when it comes to debts or being sued. If sole proprietors are sued, they can lose not only all they invested in the proprietorship but also all of their personal assets. Sole proprietorships are often used in the initial stages of a firm's life. This is, in part, because forming a sole proprietorship is very easy; there is minimal paperwork required and no partners to consult—the founder of the business is the sole owner. However, these organisations typically have limited access to outside sources of financing. The owners of sole proprietorships typically raise money by investing their own funds and by borrowing from banks. However, because there is no difference between the sole proprietor and the business he or she runs, there is no difference between personal borrowing and business borrowing. The owner of the business is personally liable for the debts of that business. In addition to banks, personal loans from friends and family are important sources of financing for sole proprietorships.

Partnership

A **general partnership** is an association of two or more people who come together as co-owners for the purpose of operating a business for profit. In most partnerships the maximum number of partners is 20, although some types of professional partnership have different limits. For example, a partnership can consist of up to 50 actuaries, medical practitioners, patent attorneys, trademark attorneys or stockbrokers, up to 100 architects, pharmacists or veterinary surgeons, up to 400 legal practitioners or up to 1000 accountants! Just as with the sole proprietorship, there is no separation between the general partnership and its owners with respect to debts or being sued. The primary point of distinction from a sole proprietorship is that the **partnership** has more than one owner. Just as is the case with a proprietorship, the profits of the partnership are taxed as personal income. An important advantage of the partnership is that it provides access to **equity** (ownership), as well as financing from multiple owners in return for partnership **shares** (units of ownership).

In a **limited partnership**, there are two classes of partner: general and limited. The **general partner** actually runs the business and faces unlimited liability for the firm's debts, whereas the **limited partner** is liable only up to the amount he or she invested. The life of the partnership, like

Table 1.1 Characteristics of different forms of business

Business form	Number of owners	Are owners liable for the firm's debts?	Do owners manage the firm?	Does an ownership change dissolve the firm?	Access to capital	Taxation
Sole proprietorship	One	Yes	Yes	Yes	Very limited	Personal tax
Partnership	At least two, but generally from 2 to 20; certain kinds of partnership have different limits	Yes; each partner has unlimited liability	Yes	Yes	Very limited	Personal tax
Limited partnership (with general partners (GPs) and limited partners (LPs))	A minimum of two owners with at least one GP, but no limit on LPs	GPs—unlimited liability LPs—limited liability	GPs—manage the firm LPs—no role in management	GPs—yes LPs—no*	Limited	Personal tax
Private company	Maximum of 50 non-employee shareholders	No	Generally, but not necessarily	No	Generally, the greater the size the easier the access	The firm pays tax at the company tax rate, and Australian resident shareholders receive credit for any company tax paid prior to determining their tax liability
Public company	Unlimited	No	No—although managers generally have an ownership stake**	No	Very easy access	

*It is common for partnerships to require approval from the other partners before a partner's ownership can be transferred.

**Owners are not prohibited from managing the company.

that of the sole proprietorship, is tied to the life of the general partner. In addition, it is difficult to transfer ownership of the general partner's interest in the business—this generally requires the formation of a new partnership. However, the limited partner's shares can be transferred to another owner without the need to dissolve the partnership, although finding a buyer may be difficult.

Corporation

If very large sums of money are needed to build a business, then the typical organisational form chosen is the **corporation**. As early as 1819, United States Supreme Court Chief Justice John Marshall set forth the legal definition of a corporation as 'an artificial being, invisible, intangible, and existing only in the contemplation of law'.¹ The corporation legally functions separately and apart from its owners (the **shareholders**). As such, the corporation can individually sue and be sued, purchase, sell or own property, and its personnel are subject to criminal punishment for crimes committed in the name of the corporation.

There are three primary advantages of this separate legal status. First, the owners' liability is confined to the amount of their investment in the company's shares. In other words, if the corporation is liquidated then the owners can only lose their investment in those shares. (In some cases, shares that have been issued to investors are only partially paid for; in this situation the company is entitled to call upon the shareholders to pay the unpaid portion of their shares, but this is the extent of those shareholders' liability.) This limited liability is an extremely important advantage of a corporation. After all, would you be willing to invest in Qantas if you would be

held liable if one of its aircraft crashed? The second advantage of separate legal status for the corporation is that the life of the business is not tied to the status of the investors. The death or withdrawal of an investor does not affect the continuity of the corporation. The management continues to run the corporation when the ownership shares are sold or passed on through inheritance. For example, Peter Degraives founded Cascade Brewery, one of Australia's oldest companies, in 1824. Degraives died in 1852 but the corporation lives on. Finally, these two advantages result in a third advantage: the ease of raising capital. It is much easier to convince investors to put their money into a corporation knowing that the most they can lose is what they invest, and that they can easily sell their shares if they wish to do so.

A corporation is legally owned by its current set of shareholders, or owners, who elect a board of directors. The directors then appoint management who are responsible for determining the firm's direction and policies. Although even very small firms can be organised as corporations, most often larger firms that need to raise large sums of money for investment and expansion use this organisational form. As such, this is the legal form of business that we will be examining most frequently in this book.

A corporation in which the liability of the owners is limited is denoted by the letters 'Ltd' (which is an abbreviation for 'limited') after the company name. (Sometimes, mining companies undertaking risky ventures in order to encourage investors can be set up so that even if shares are partially paid for, shareholders have no further liability to repay the unpaid portion of their shares; these companies are referred to as 'No Liability' companies and are denoted by the letters 'NL' after the company name.)

One of the drawbacks of the corporate form in many countries (such as the United States) is the double taxation of earnings that are paid out in the form of **dividends**. When corporations in those countries earn a profit, they pay tax on that profit (the first taxation of earnings) and pay some of that profit back to the shareholders in the form of dividends. Then the shareholders pay personal income tax on those dividends (the second taxation of earnings). A tax system in which company profits are subject to double taxation is sometimes referred to as a classical tax system.

Australia introduced the dividend imputation system in 1987 to overcome this problem. Under an imputation system, shareholders receive credit for the company tax paid by the company, and therefore effectively pay tax only on dividends received based on the difference between the company tax rate and their personal tax rate. The imputation system will be covered in more detail in Chapter 3.

When entrepreneurs and small-business owners want to expand, they face a trade-off between the benefits of the corporate form and the potential loss of control that accompanies it. For this reason, an attractive alternative to the public corporation (in which the public at large are invited to purchase shares) for such a small business is the **private company** (denoted by the letters 'Pty' before the letters 'Ltd' after the company name, standing for 'proprietary', which means privately owned). A private company combines the control enjoyed by sole proprietorships or partnerships with the limited liability benefit of a corporation.

Table 1.1 describes some major characteristics of the different forms of business. As you can see, the corporation is the business form that provides the easiest access to capital, and as such it is the most common choice for firms that are growing and need to raise money.

How does finance fit into a firm's organisational structure?

Finance is intimately woven into any aspect of a business that involves the payment or receipt of money in the future. For this reason, it is important that everyone in the business has a good working knowledge of the basic principles of finance. However, within a large business organisation the responsibility for managing the firm's financial affairs falls to the firm's Chief Financial Officer (CFO).

Figure 1.1 (overleaf) shows how the finance function fits into a firm's organisational chart. In the typical large corporation, the CFO serves under the corporation's Chief Executive Officer (CEO) and is responsible for overseeing the firm's finance-related activities. Typically, both a Treasurer and a Financial Controller serve under the CFO, although in a small firm the same person may fulfil both roles. The Treasurer generally handles the firm's financing activities. These include managing its cash and credit, exercising control over the firm's major spending

Figure 1.1 How the finance area fits into a corporation

A firm's Chief Financial Officer (CFO) oversees all of the firm's financial activities through the offices of the firm's Treasurer and Financial Controller.



decisions, raising money, developing financial plans and managing any foreign currency the firm receives. The firm's Financial Controller is responsible for managing the firm's accounting duties, which include producing financial statements, paying tax and gathering and monitoring data that the firm's executives need to oversee its financial well-being.

Before you move on to 1.3

Concept check 1.2

- 3 What are the primary differences between a sole proprietorship, a partnership and a corporation?
- 4 Explain why large and growing firms tend to choose the corporate form of organisation.
- 5 What are the duties of a corporate Treasurer?
- 6 What are the duties of a Financial Controller?

OBJECTIVE 3

Understand the role of the financial manager within the firm and the goal for making financial choices.

1.3 The goal of the financial manager

In 2001, Tony Fadell turned to Apple, Inc. to develop his idea for a new MP3 player. Fadell's idea had already been rejected by his previous employer and another company, but the executives at Apple were enthusiastic about the new MP3 player idea. They hired Fadell, and the rest is history. The successful sales of the new iPod MP3 player, coupled with efficient uses of financing and day-to-day funding, raised the firm's share price, and in 2011 Apple became the most valuable company in the world. This exemplifies how a management team appointed by a corporate board made an important investment decision that had a very positive effect on the firm's total value.

As previously mentioned, we can characterise the financial activities of a firm's management in terms of three important functions within the firm:

- 1 Making investment decisions (capital budgeting decisions): the decision by Apple to introduce the iPod.
- 2 Making decisions on how to finance these investments (capital structure decisions): how to finance the development and production of the iPod.
- 3 Managing funding for the company's day-to-day operations (working capital management): Apple's decision regarding how much inventory to hold.

In carrying out these tasks, the financial managers must be aware that they are ultimately working for the firm's shareholders, who are the owners of the firm, and that the choices they make as financial managers will generally have a direct impact on their shareholders' wealth.

Maximising shareholder wealth

The CEO of a public company, such as Woolworths Ltd [WOW], is selected by a board of directors; the members of the board of directors are elected by the shareholders who purchase shares in the company. The shareholders, ranging from individuals who purchase shares for a retirement fund to large financial institutions, have a vested interest in the company. Because the shareholders are their true owners, companies commonly have a principal goal described as *maximising shareholder wealth*, which is achieved by maximising the share price.

We can get some insight into the goals that companies have by looking at their annual reports or websites. Woolworths lists its 'Strategy and objectives' on its website, where it says that its goal is to 'have Customers put us 1st, across all our brands'.² It then lists five priorities:

- 1 Building a customer and store-led culture and team
- 2 Generating sustainable sales momentum in Food
- 3 Evolving our Drinks business to provide even more value and convenience to customers
- 4 Empowering our portfolio businesses to pursue strategies to deliver shareholder value
- 5 Becoming a lean retailer through end-to-end process and systems excellence

This list of priorities is then followed by four sentences explaining how the company will set about achieving them, and 'customers' are referred to in each of those sentences.

Notice that in Woolworths' 'Strategy and objectives', customers are mentioned six times and shareholders only once. Shareholder value is number four on their list of priorities, after references to customers, employees, sales and their food and drinks businesses. Does this mean that there is a potential conflict between competing objectives? Does the company sometimes have to choose between maximising return to shareholders and looking after the interests of its customers?

The answer is no: these various objectives are mutually compatible, and clearly this is Woolworths' view. We (the authors) believe in the same goal that Woolworths does—that maximising the wealth of your shareholders and doing the right thing for other stakeholders in the company can go hand in hand. Think of these other goals not as moving *away* from creating wealth for shareholders, but moving *towards* what will truly increase the value of their shares in the long term. As we explain the concepts in this book, we will assume that businesses do not act out of greed to 'get rich quick'. Instead, we assume that they try to maximise the wealth of their shareholders by making decisions that have long-term positive effects. Very simply, managers cannot afford to ignore the fact that shareholders want to see the value of their investments rise—they will sell their shares if it doesn't. This, in turn, will cause the company's share price to fall, jeopardising the managers' jobs if they are seen to have an excessively short-term focus.

Ethical considerations in corporate finance

Although not one of the five principles of finance, ethics is fundamental to the notion of trust and is therefore essential to doing business. The problem is that in order to cooperate,

business participants have to rely on one another's willingness to treat them fairly. Although businesses frequently try to describe the rights and obligations of their dealings with others using contracts, it is impossible to write a perfect contract. Consequently, business dealings between people and firms ultimately depend on the willingness of the parties to trust one another.

Ethics, or a lack thereof, is a recurring theme in the news. Finance has recently been home to an almost continuous series of ethical lapses. Financial scandals at companies such as Enron Corporation and WorldCom in the United States, and HIH Insurance and OneTel in Australia; Bernie Madoff's Ponzi scheme, which cost investors billions of dollars; and other discreditable behaviour involving some of Australia's largest financial institutions all show that the business world does not forgive ethical lapses. Not only is acting in an ethical manner morally correct, but it is also a necessary ingredient of long-term business and personal success.

You might ask yourself, 'As long as I'm not breaking society's laws, why should I care about ethics?' The answer to this question lies in consequences. Everyone makes errors of judgment in business, which is to be expected in an uncertain world. But ethical errors are different. Even if they do not result in anyone going to jail, they tend to end careers and thereby terminate future opportunities. Why? Because unethical behaviour destroys trust, and businesses cannot function without a certain degree of trust. Throughout this book, we will point out some of the ethical pitfalls that have tripped managers up.

Regulation aimed at making the goal of the firm work

Because of growing concerns about both agency and ethical issues, many governments around the world have strengthened laws in an attempt to prevent a repeat of the corporate collapses and scandals referred to above. In 2002, the United States Congress passed the *Sarbanes-Oxley Act*, or 'SOX' as it is commonly known. One of the primary inspirations for this new law was Enron Corporation, which failed financially in December 2001. Prior to bankruptcy, Enron's board of directors actually voted on two occasions to temporarily suspend its own 'code of ethics' to permit its CFO to engage in risky financial ventures that benefited the CFO personally while exposing the corporation to substantial risk.

SOX holds corporate advisors who have access to or influence over company decisions (such as a firm's accountants, lawyers, company officers and board of directors) legally accountable for any instances of misconduct. The Act very simply and directly identifies its purpose as being 'to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes', and mandates that senior executives take individual responsibility for the accuracy and completeness of the firm's financial reports.

Similar protections have been put into effect in Australia. Following the collapse of HIH Insurance and OneTel in Australia in 2001 (and partially based on the recommendations arising from an investigation into the HIH collapse), the Australian government introduced the *Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act 2004* (generally referred to as CLERP 9). CLERP 9 introduced significant changes to laws affecting corporations, and was designed to promote public confidence in listed companies, their activities and their financial reports. These changes had impacts on financial reporting, auditor independence, disclosure requirements and remuneration reports. For listed companies, CEOs and CFOs must affirm in writing that company financial statements are 'true and fair'. Remuneration reports are now presented to a company's Annual General Meeting (AGM) by the board of directors, providing details regarding remuneration to board members and managers of the firm. If there is a 25% vote against the remuneration report at two consecutive AGMs, shareholders have the right to vote on a motion to declare all positions on the board vacant (also known as a 'spill'), and if this motion is carried then board members must seek re-election to the board.

There has been some debate about the costs and benefits of such legislation. While many are of the view that it has led to increased investor confidence in financial reporting, the additional reporting requirements are quite costly and, as a result, may inhibit firms from listing on the stock exchange.

Ethical considerations arising from Bond issues

Few Australians have risen as high, and fallen so far, as Alan Bond. Best known (at least for a time) as the person who bankrolled Australia's historic yachting victory in the America's Cup in 1983, Bond was awarded the Order of Australia in 1984 and voted Australian of the Year in 1987. He also founded Bond University, Australia's first private university. The son of poor immigrants, Bond built a multi-billion dollar fortune and headed a vast network of businesses. By the late 1980s, it seemed that everything Alan Bond touched turned to gold.



Source: Bettmann/CORBIS

The stock-market crash of 1987 sowed the seeds of the demise of Bond's business empire (along with those of a number of other high-flying entrepreneurs from the 1980s). Business empires based on high-priced—and debt-funded—acquisitions, as was Bond's, were particularly vulnerable when those assets suddenly lost much of their value. Ethics is rarely an issue when everything is going well; it is when times are tough that some people find themselves contemplating courses of action that others might find questionable, unethical or fraudulent.

As a result of the mountain of debt faced by Bond and his companies, he resorted to more and more questionable actions to 'keep the ship afloat', as it were. Much of this activity involved loans from some companies to others within the Bond empire, with inadequate security and on terms that were not in the interests of the lending company (of which Bond was a director), and often via an intermediary to hide the loans from auditors. The Bond group involved over 100 companies with extremely complex and intertwined financial relationships, making it almost impossible for any one group of auditors to see the 'whole picture'—a technique also seen in the subsequent Enron Corporation and HIH Insurance collapses. Some of the transactions instigated by Bond may or may not have been legal, but because they were not on terms that would be reasonable in an 'arm's length' transaction it is clear that they violated the ethical requirement for company directors to act in the interests of the company and its shareholders. Bond gave a number of assurances to shareholders and corporate regulators which were subsequently found to be, at best, misleading.

In 1997, Bond was charged with nine offences; he pled guilty to two charges and the remaining charges were then dropped. He was eventually sentenced to seven years' imprisonment, of which he served four. He became one of the few Australians to be stripped of the Order of Australia. Bond remained a controversial figure until his death in 2015, being considered by some to be a national hero and by others to be a national disgrace. His business career should serve as a salient lesson to high-flying business entrepreneurs the world over, in three important respects: (1) business empires based on debt-funded acquisitions during times of rapidly rising asset prices tend to be highly vulnerable when prices start to fall; (2) it is at times of greatest stress, pressure and desperation that many of us are most at risk of immoral, unethical or even criminal behaviour; and (3) as soon as one feels compelled to hide the truth about a business transaction from colleagues, shareholders and regulators, that should serve as a warning that even tougher times lie ahead.³

FINANCE SPOTLIGHT



YOUR MONEY

Before you move on to 1.4

Concept check 1.3

- 7 What is the goal of a firm?
- 8 Why is ethics relevant to the financial management of a firm?

OBJECTIVE 4

Explain the five principles of finance that form the basis of financial management for both businesses and individuals.

1.4 The five basic principles of finance

At first glance, finance can seem like a collection of unrelated decision rules. Nothing could be further from the truth. The logic behind the financial concepts covered in this book arises from five simple financial principles, each of which is described below.

Principle 1: Money has a time value

A dollar received today is worth more than a dollar received in the future. Conversely, a dollar received in the future is worth less than a dollar received today.

Perhaps the most fundamental principle of finance is that money has a time value. A dollar received today is more valuable than a dollar received one year from now. That is, we can invest the dollar we have today to earn interest so that at the end of one year we will have more than one dollar.

Because we can earn interest on money received today, it is better to receive money sooner rather than later. For example, suppose you have a choice of receiving \$1000 either today or one year from now. If you decide to receive it a year from now, you will have passed up the opportunity to earn a year's interest on the money. Economists would say that you suffered an 'opportunity loss' or an **opportunity cost**.

Principle 2: There is a risk–return trade-off

We will not take on additional risk unless we expect to be compensated with additional return.

Principle 2 is based on the idea that individuals are risk-averse, which means that they prefer to get a certain return on their investment rather than an uncertain return. However, the world is an inherently risky place, so at least some individuals will have to make investments that are risky. How are investors induced to hold these risky investments when there are safer alternative investments? By offering investors a higher *expected* rate of return on the riskier investments.

Notice that we refer to *expected* return rather than *actual* return. As investors, we have expectations about what returns our investments will earn; however, a higher expected rate of return is not always a higher realised rate of return. For example, companies in the materials sector,^a which is dominated by mining companies, are generally seen to be high-risk investments, and you probably would not have been willing to invest in this sector at the beginning of 2016 unless you expected returns to be very high. As it happens, the top seven shares on the Australian Securities Exchange [ASX] in 2016 were in that sector. Those seven shares all increased in price by more than 100%; the best performer—Resolute Mining Limited [RSG]—went up 420%! However, the healthcare sector—also a high-risk sector with high expected returns—does not always achieve those expected returns. The two worst performers on the ASX in 2016 were healthcare companies, falling in price by 53% and 65%, respectively. There can be huge variations in actual returns from year to year. Vitamin manufacturer Blackmores Limited [BKL] went from being the best performer in 2015, gaining 519%, to the third-worst in 2016, falling by 53%.

The risk–return relationship will be a key concept as we value assets and propose new investment projects throughout this book. We will also describe how investors measure risk. Interestingly, much of the work for which the 1990 Nobel Prize for economics was awarded centred on the graph shown in Figure 1.2 and how to measure risk.

Principle 3: Cash flows are the source of value

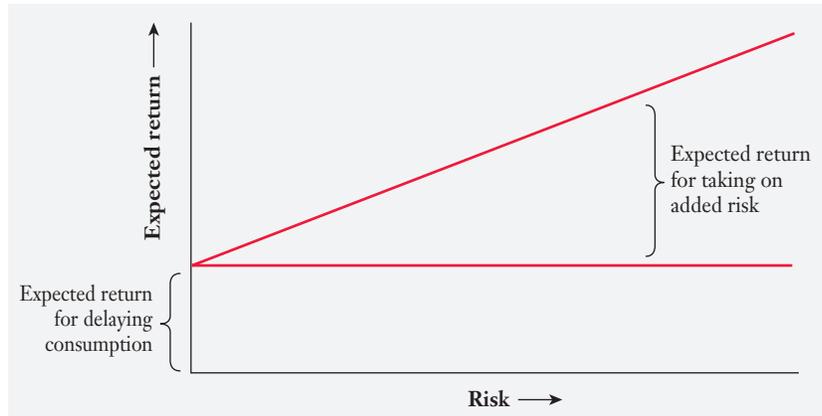
Profit is an accounting concept designed to measure a business's performance over an interval of time. Cash flow is the amount of cash that can actually be taken out of the business, and is therefore a source of value.

You may recall from your accounting studies that a company's profits can differ dramatically from its cash flows. Cash flows represent actual money that can be spent and, as we will discuss later, are what determine an investment's value.

^aCompanies listed on the Australian Securities Exchange (ASX) are broken down into various sectors and industries based on the Global Industry Classification Standard (GICS), and the sector that contains mining companies is called the materials sector.

Figure 1.2 There is a risk–return trade-off

Investors demand a return for delaying their consumption. To convince them to take on added risk, they demand a higher expected return.



Profits are different. To determine a company’s accounting profit, its accountants have to make a judgment about how the business’s costs and revenues are allocated to each time period. Consequently, different judgments result in different profit measurements. In fact, a firm can show a profit on paper even when it is generating no cash at all. This is not to say that accounting profits are unimportant to investors. Investors see accounting profits as an important indicator of a firm’s past—and perhaps its future—ability to produce cash flows for its investors. So, to the extent that profits affect investors’ expectations, they are an important source of information.

There is another important point we need to make about cash flows. Recall from your economics studies that people make the best choices when they look at marginal, or *incremental*, cash flows. That is why, in this book, we focus on the incremental cash flow to the company as a whole that is produced as a consequence of a decision. The incremental cash flow to the company as a whole is the difference between the cash flows the company would produce with the potential new investment it is thinking about making, and the cash flows it would produce without that investment. To understand this concept, let’s think about the incremental cash flow produced by *Star Wars: The Force Awakens*. Not only did Disney make a lot of money on this movie, but also, once Disney finishes ‘Star Wars Land’, the movie will increase the number of people attracted to Disney theme parks, along with resulting increases in sales of all kinds of Star Wars items. Thus, if you were to evaluate *Star Wars: The Force Awakens*, you’d want to include its impact on theme park attendances and sales of Star Wars T-shirts, light-sabres, action figures and all Star-Wars-related items throughout the entire company.

Principle 4: Market prices reflect information

Investors respond to new information by buying and selling; therefore, prices reflect what is known. The speed with which investors act and the way that prices respond reflect the efficiency of the market.

The prices of financial claims traded in the public financial markets respond rapidly to the release of new information. Thus, when earnings reports come out, prices adjust immediately to the new information, moving upward if the information is better than expected and downward if it is worse than expected. In efficient markets, such as those that exist in Australia and other developed countries, this process takes place *very* quickly. As a result, it is hard to profit from trading on publicly released information.

To illustrate how quickly share prices can react to information, consider the following set of events: while Nike CEO William Perez was flying aboard the company’s Gulfstream jet one day in November 2005, traders on the ground sold off a significant amount of Nike’s shares. Why?

Because the aircraft's landing gear was malfunctioning, and the traders were watching television coverage of the event! While Perez was still in the air, Nike's shares dropped 1.4%. Once Perez's aircraft landed safely, Nike's share price immediately bounced back. This example illustrates that in the financial markets there are ever-vigilant investors who are looking to act even *in anticipation* of the release of new information.

Consequently, managers can expect their company's share prices to respond quickly to the decisions they make. Good decisions will result in higher share prices. Poor decisions will result in lower share prices.

Principle 5: Individuals respond to incentives

Incentives motivate, and the actions of managers are often motivated by self-interest, which may result in managers not acting in the interests of the firm's owners. When this happens, the firm's owners will lose value.

For example, a manager may be in a position to evaluate an acquisition that happens to be owned by his brother-in-law. Other situations are much less straightforward. For example, a financial manager may be asked to decide whether or not to close a money-losing plant—a decision that, although saving money for the firm, will involve the personally painful act of firing the employees who will lose their jobs.

The conflict of interest between a firm's managers and its shareholders is called a *principal-agent problem*, or **agency problem**, in which the firm's ordinary shareholders, the owners of the firm, are the principals in the relationship and the managers act as 'agents' to these owners. If the managers have little or no ownership in the firm, they have less incentive to work energetically for the company's shareholders and may instead choose to enrich themselves with perks and other financial benefits—say, luxury corporate jets, expensive corporate apartments or resort holidays. They will also have an incentive to recommend to shareholders that they vote against a proposed merger or takeover, for fear of losing their jobs, even though such a merger or takeover may be in the interests of the shareholders. The lost shareholder value that results from managerial actions that are inconsistent with the goal of maximising shareholder value is called an **agency cost**.

Agency problems also arise when the firm's executives are considering how to raise money to finance the firm's investments. In some situations debt may be the cheapest source of financing, but managers may avoid debt financing because they fear the loss of their jobs if the firm is unable to pay its bills. Shareholders, on the other hand, might prefer that the firm use more debt financing because it puts pressure on management to perform at a high level.

Agency costs are typically difficult to measure, but occasionally their effect on the firm's share price can be seen. For example, upon the announcement of the death of Roy Farmer, the CEO of Farmer Brothers [US:FARM], a seller of coffee-related products, the firm's share price rose about 28%. Many attributed the rise in price to the perceived benefits of the loss of a CEO who was not acting in accordance with general shareholder interests.

Fortunately, there are several measures that can be taken to help mitigate the agency problem:

- Compensation plans that reward managers when they act to maximise shareholder wealth can be put in place.
- The board of directors can actively monitor the actions of managers and keep pressure on them to act in the best interests of shareholders.
- The financial markets can (and do) play a role in monitoring management by having auditors, bankers and credit agencies monitor the firm's performance, while security analysts provide and disseminate analysis on how well the firm is doing, thereby helping shareholders monitor the firm.
- Firms that underperform will see their share prices fall and may be taken over and have their management teams replaced.

To see the power of incentives, consider the case of NFL football player Edgerrin James. James was a running back for the Indianapolis Colts playing in a game against Detroit when

he was told by his coach to get a first down and then fall down and run the clock out. That way, the Colts would not be accused of running up the score against a team they were already beating badly. However, because James's contract included incentive payments associated with rushing yards and touchdowns, he acted in his own self-interest and ran for a touchdown on the very next play. Following the play, he commented, 'I heard a cash register ringing the whole damn way'.⁴

Before you begin end-of-chapter material

Concept check 1.4

- 9 What are the five principles of finance?
- 10 A fundamental guiding principle of investing is that higher risks require higher rewards or returns. Give two examples of the risk–return relationship.
- 11 What do we mean when we say that market prices reflect information?

CHAPTER SUMMARY

Applying the principles of finance to Chapter 1

P1 Money has a time value A dollar received today is worth more than a dollar received in the future. Conversely, a dollar received in the future is worth less than a dollar received today.

P2 There is a risk–return trade-off We will not take on additional risk unless we expect to be compensated with additional return.

P3 Cash flows are the source of value Profit is an accounting concept designed to measure a business's performance over an interval of time. Cash flow is the amount of cash that can actually be taken out of a business, and is therefore the source of value.

P4 Market prices reflect information Investors respond to new information by buying and selling; therefore, prices reflect what is known. The speed with which investors act and the way that prices respond reflect the efficiency of the market.

P5 Individuals respond to incentives Incentives motivate, and the actions of managers are often motivated by self-interest, which may result in managers not acting in the interests of the firm's owners. When this happens, the firm's owners will lose value.

1.1 Understand the importance of finance in your personal and professional lives and identify the three primary business decisions that financial managers make. (pages 3–5)

SUMMARY Finance is the study of how individuals and businesses allocate money over time. We all face choices that involve spending or receiving money now versus sometime in the future. What you will learn in this book will help you to better understand how to make those choices, both in your personal life and as a financial manager.

The decision-making process of planning and managing a firm's long-term investments is called capital budgeting. The mix of long-term sources of funds used by a firm to finance its operations is called its capital structure. Working capital management involves managing the firm's short-term investment in assets and liabilities and ensuring that the firm has sufficient resources to maintain its day-to-day business operations.

KEY TERMS

capital budgeting, page 4 The decision-making process used to analyse potential investments in fixed assets.

capital structure, page 4 The mix of debt and equity securities a firm uses to finance its assets.

financial markets, page 4 Mechanisms that allow people to easily buy and sell financial claims.

working capital management, page 4

Management of day-to-day operations and decisions related to working capital and short-term financing.

Concept check 1.1

- 1 What are the three basic types of issue that arise in business that are addressed by the study of business finance?
- 2 List three non-finance careers to which the study of finance applies.

1.2 Identify the key differences between the three major legal forms of business. (pages 5–8)

SUMMARY The sole proprietorship is a business operation owned and managed by an individual. Initiating this form of business is simple and generally does not involve any substantial organisational costs. The proprietor has complete control of the firm but must be willing to assume full responsibility for its outcomes.

Similar to the sole proprietorship, a general partnership is simply a coming together of two or more individuals who face unlimited liability for their involvement in the partnership. The limited partnership is another form of partnership that permits all but one of the partners to have limited liability if this is agreeable to all partners. The one partner with unlimited liability is the general partner.

The corporation form of organisation is taken when a business has an increased need to raise capital from public investors. Although greater organisational costs and regulations are imposed on this legal entity, the corporation is more conducive to raising large amounts of capital. Limited liability, continuity of life and ease of transfer in ownership, all of which increase the marketability of the investment, have greatly contributed to attracting large numbers of investors to the corporate environment. The formal control of the corporation is vested in the parties who own the greatest number of shares. However, day-to-day operations are managed by the corporate officers, who theoretically serve on behalf of the shareholders. An attractive alternative to a public company for a small business is the private company (denoted by ‘Pty’ after the company name). A private company generally provides for greater control by the owners while still providing the limited liability benefit of corporations (the owners’ liability is limited to what they invest).

KEY TERMS

corporation, page 6 A business entity that legally functions separate and apart from its owners.

debt, page 5 Money that has been borrowed and must be repaid. This includes such things as bank loans and bonds.

dividends, page 7 The portion of a corporation’s earnings that are distributed to its shareholders.

equity, page 5 The ownership interest in a corporation. It is the shareholders’ investment in the firm and the cumulative profits retained in the business up to the date of the balance sheet.

general partner, page 5 A member of a general partnership or a member of a limited partnership who actually runs the business and faces unlimited liability for the firm’s debts.

general partnership, page 5 A partnership in which all of the partners are fully liable for the indebtedness incurred by the partnership.

limited partner, page 5 A member of a limited partnership who is liable only up to the amount invested by that member.

limited partnership, page 5 A partnership in which one or more of the partners has limited liability that is restricted to the amount of capital he or she invests in the partnership.

partnership, page 5 An association of two or more individuals joining together as co-owners to operate a business for profit.

private company, page 7 A business organisational form that blends greater control by owners with many of the elements of the corporate form.

shareholders, page 6 The owners of the firm; those who own shares in a corporation.

shares, page 5 Units of ownership.

sole proprietorship, page 5 A business owned by a single individual.

Concept check 1.2

- 3 What are the primary differences between a sole proprietorship, a partnership and a corporation?
- 4 Explain why large and growing firms tend to choose the corporate form of organisation.
- 5 What are the duties of a corporate Treasurer?
- 6 What are the duties of a Financial Controller?

1.3 Understand the role of the financial manager within the firm and the goal for making financial choices. (pages 8–11)

SUMMARY The finance function in most large firms is headed by a Chief Financial Officer (CFO). The CFO typically reports directly to the firm’s Chief Executive Officer (CEO). The CFO oversees the firm’s financing decisions, including the management of the firm’s cash position (in larger firms, this responsibility is delegated to the company Treasurer, who reports to the CFO) as well as corporate reporting and general accounting. (Once again, in large firms this task is delegated to the Financial Controller, who also reports to the CFO.)

A critically important goal of finance is to design incentive compensation plans that better align the interests of managers with those of the firm's owners (shareholders).

Firms are in business to make their owners, or shareholders, wealthier. With this goal in mind, financial managers must make financial decisions regarding long-term investments, financing and management of short-term cash needs. For very large firms whose shares are publicly traded, this goal is commonly described as *maximising the wealth of shareholders* (the business's owners).

In finance, ethics—or a lack thereof—is a recurring theme in the news. Ethics is fundamental to the notion of trust and is therefore essential to doing business. In order to cooperate, business participants have to rely on one another's willingness to treat them fairly.

Concept check 1.3

- 7 What is the goal of a firm?
- 8 Why is ethics relevant to the financial management of a firm?

1.4 Explain the five principles of finance that form the basis of financial management for both businesses and individuals. (pages 12–15)

SUMMARY

P1 Principle 1: Money has a time value

A dollar received today is worth more than a dollar received in the future. Conversely, a dollar received in the future is worth less than a dollar received today.

P2 Principle 2: There is a risk–return trade-off

We will not take on additional risk unless we expect to be compensated with additional return.

P3 Principle 3: Cash flows are the source of value

Profit is an accounting concept designed to measure a business's performance over an interval of time. Cash flow is the amount of cash that can actually be taken out of the business, and is therefore the source of value.

P4 Principle 4: Market prices reflect information

Investors respond to new information by buying and selling; therefore, prices reflect what is known. The speed with which investors act and the way that prices respond reflect the efficiency of the market.

P5 Principle 5: Individuals respond to incentives

Incentives motivate, and the actions of managers are often motivated by self-interest, which may result in managers not acting in the best interests of the firm's owners. When this happens, the firm's owners will lose value.

KEY TERMS

agency costs, page 14 The costs incurred by a firm's ordinary shareholders when the firm's management makes decisions that are not in the shareholders' best interests but instead further the interests of the management of the firm.

agency problem, page 14 Conflicts that arise out of the separation of management and ownership of the firm.

opportunity cost, page 12 The value of the next best alternative that is foregone as a result of making a decision.

Concept check 1.4

- 9 What are the five principles of finance?
- 10 A fundamental guiding principle of investing is that higher risks require higher rewards or returns. Give two examples of the risk–return relationship.
- 11 What do we mean when we say that market prices reflect information?

STUDY QUESTIONS

- 1–1 (Related to *Finance Spotlight 'Welcome to the world of finance' on page 3*) In the Finance Spotlight boxed feature at the beginning of this chapter, we discussed how the topic of principle 1, the time value of money, is relevant to both your personal and professional lives. Describe a decision you might face in the future that will require you to consider

the future value of money received (or invested). For example, how might the time value of money enter into a decision to push back your graduation date by one year?

- 1–2 Explain the three types of business decision that a financial manager faces.
- 1–3 According to principle 2, how should investors decide where to invest their money?
- 1–4 In very basic terms, describe how profits and cash flow are different.
- 1–5 List the three main forms of business organisation and describe their advantages and disadvantages. If you were to consider starting up a lawn-care business for the summer, what type of business organisation might you use?
- 1–6 Who really owns a corporation, and how does that impact on the goal of the firm?
- 1–7 What goal do the owners of a for-profit business generally strive for?
- 1–8 Why is maximising a firm's accounting profits not an appropriate goal for the firm?

ENDNOTES

- 1 *The Trustees of Dartmouth College v. Woodward*, 4 Wheaton 636 (1819).
- 2 Woolworths Limited, Strategy and objectives, <www.woolworthsgroup.com.au/page/about-us/our-approach/strategy-and-objectives/>.
- 3 K. Van Peurse, M. Zhou, T. Flood and J. Buttimore, 'Three cases of corporate fraud: An audit perspective', The University of Waikato, <http://researchcommons.waikato.ac.nz/bitstream/handle/10289/1671/Accounting_wp_94.pdf?sequence=1>; T. Paddenburg, 'Alan Bond is no hero, say victims', *PerthNow*, <www.news.com.au/national/western-australia/alan-bond-is-no-hero-say-victims/news-story/6b3f860896c379d6e6fa865b2e3279cb>.
- 4 'Edgerrin James plays by his own rules. And he has no problem'. ESPN website, <www.espn.com/espn/magazine/archives/news/story?page=magazine-20020902-article10>.

FIRMS AND THE FINANCIAL MARKET

Chapter outline

- 2.1 The basic structure of the Australian financial markets (page 21)
Objective 1 Describe the structure and functions of financial markets.
-
- 2.2 The financial marketplace: financial institutions (pages 21–26)
Objective 2 Distinguish between commercial banks and other financial institutions in the financial marketplace.
-
- 2.3 The financial marketplace: securities markets (pages 26–36)
Objective 3 Describe the different securities markets for bonds and shares.
-

Principles P2, P4 and P5 applied

When reading this chapter, you should keep in mind three of the basic principles of finance introduced in Chapter 1: P2 Principle 2: **There is a risk–return trade-off**, P4 Principle 4: **Market prices reflect information** and P5 Principle 5: **Individuals respond to incentives**. Financial markets are organised to offer investors a wide range of investment opportunities that have different risks

and different expected rates of return that reflect those risks. The goal of these markets is to provide investors with opportunities that best fit their risk and return objectives, while at the same time providing businesses with opportunities to raise funds—to train employees, do research and build new plants—at prices that appropriately reflect the prospects of the business.

If you have a student loan or a car loan, you have already been introduced to financial markets. You are spending more than you currently earn and have borrowed money through the financial markets to make ends meet. But once you graduate and enter the workforce, you may earn more than you spend and therefore be able to save. Once again you will become involved in the financial markets, but this time as a saver rather than a borrower. This pattern of borrowing and saving also holds true for businesses as they borrow money to finance their investments and invest their savings in the hopes of generating even more money in the future.

In this chapter, we provide a preliminary overview of the Australian financial markets. We first review some of the primary institutions that facilitate the transfer of money from investors to companies and individuals. Next we discuss the securities markets, in which different securities issued by businesses are bought and sold. The primary objective of this chapter is to provide a sense of the richness of the financial marketplace, the critical role that it plays in each of our lives and how corporations use the financial markets to raise capital.



Source: Fabio Berti/123RF

FINANCE SPOTLIGHT



YOUR MONEY

Superannuation—defined benefit versus defined contribution

When you start your first job after graduating, your employer will be required to make contributions on your behalf to a **superannuation fund**, which is designed to provide for your financial security upon retirement. Compulsory employer superannuation began at 3% or 4% of the employee's salary (depending on the size of the employer) in 1992, and gradually increased to 9% for the 2002/2003 tax year. It next rose to 9.5% for the 2014/2015 tax year, and is scheduled to increase gradually from 9.5% to 12% between 2021 and 2025. In addition to employer contributions to superannuation, the government has had favourable taxation arrangements in place to encourage private contributions. Learning about the financial markets will help you analyse your options and make good selections. More than 30 years ago, superannuation was typically a **defined benefit plan**. You would work for only one company, and the company would reward your loyalty and hard work by paying you a pension during your retirement based on your years of employment and the level of pay that you earned. In other words, the company set aside money to pay your pension benefit and invested it for you. Today, people change jobs often, and superannuation like the one just described is very rare. Instead, most employers now offer their employees a **defined contribution plan**. With defined contribution superannuation, your retirement benefit will be based on the contributions made by you, your employer and the earnings of the fund. You will normally have some control over how those funds are invested—for example, you may be able to choose between strategies described as conservative, balanced, growth and high growth. So, it doesn't matter whether you are a doctor, lawyer, truck driver or salesperson—you are going to be a superannuation fund manager.

Your turn: See **Study Question 2–1**.

2.1 The basic structure of the Australian financial markets

In Chapter 1, we showed that businesses typically opt to take on the form of a corporation when they need to raise large amounts of capital. In this chapter, we will demonstrate how a corporation raises capital using the Australian financial markets.

As discussed in Chapter 1, a financial market is any place where money and credit are exchanged. When you take out a car loan from your bank, you participate in the financial markets. Within the financial markets, there are three principal sets of players that interact:

- 1 **Borrowers:** those who need money to finance their purchases. This includes businesses that need money to finance their investments or to expand their inventories as well as individuals who borrow money to purchase a new car or a new home.
- 2 **Savers (investors):** those who have money to invest. These are principally individuals who save money for a variety of reasons, such as accumulating a down payment for a home or saving for a return to postgraduate study. Firms also save when they have excess cash.
- 3 **Financial institutions (intermediaries):** the financial institutions and markets that help bring borrowers and savers together. The financial institution you are probably most familiar with is the **commercial bank**, a financial institution that accepts deposits and makes loans, such as the Commonwealth Bank of Australia or Westpac, where you might have a savings account. However, as we discuss in the next section, there are many other types of financial institution that bring together borrowers and savers.

OBJECTIVE 1

Describe the structure and functions of financial markets.

Before you move on to 2.2

Concept check 2.1

- 1 The term 'financial intermediary' has a specific meaning—it describes a financial institution that borrows money from some lenders and lends money to others. Describe the economic units that an intermediary typically borrows from and the economic units to which it typically lends.
- 2 Name some financial institutions other than commercial banks that act as financial intermediaries.

2.2 The financial marketplace: financial institutions

The financial markets facilitate the movement of money from savers, who tend to be individuals, to borrowers, who tend to be businesses. In return for the use of the savers' money, borrowers provide the savers with a return on their investment.

As shown in Figure 2.1 (overleaf), the institutions that make up the financial marketplace consist of commercial banks, building societies, credit unions, money market corporations, finance companies, insurance companies, superannuation funds and various types of managed fund. We call these institutions that help bring together individuals and businesses **financial intermediaries**, because these institutions stand between those who have money to invest and those who need money. Financial markets are often described by the maturities of the securities traded in them. For example, the **money markets** are markets for short-term debt instruments, where 'short-term' means maturities of one year or less. Meanwhile, **capital markets** are markets for long-term financial instruments. 'Long-term' here means having maturities that extend beyond one year.

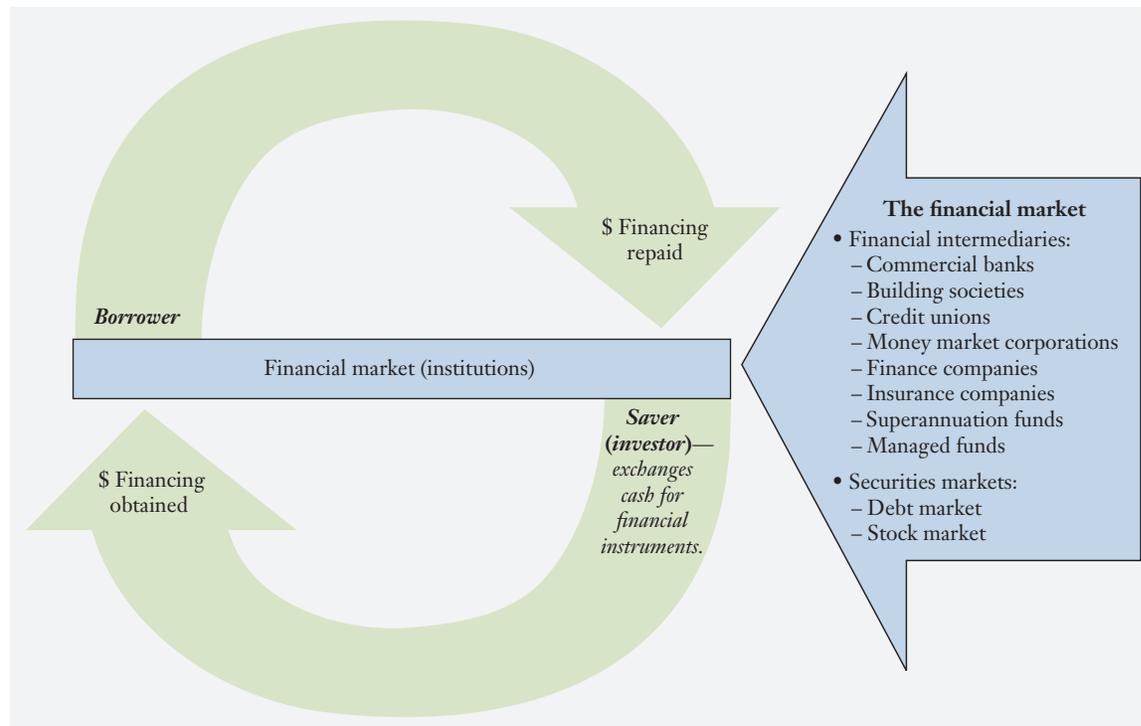
There are no national boundaries on financial markets. A borrower in Brazil, for example, might borrow money from a bank in London to finance a plant expansion. Furthermore, it is not just individuals and companies that raise money and invest in the global financial markets. Governments can enter the financial markets when they are experiencing a deficit and need to raise money to finance their expenditures. Governments can also enter financial markets when they have more money than they plan to spend and want to invest the surplus. For example, the Chinese government invests huge sums of money in US Treasury bonds, which are long-term debt securities issued by the US government.

OBJECTIVE 2

Distinguish between commercial banks and other financial institutions in the financial marketplace.

Figure 2.1 Financial markets, institutions and the circle of money

Financial markets consist of institutions that facilitate the transfer of savings from individuals and firms with excess cash to borrowers who have less cash than they need.



Commercial banks: everyone's financial marketplace

As previously mentioned, the commercial bank is probably the first financial intermediary each of us has dealt with in the financial marketplace. And, because they provide many firms with their initial funding, commercial banks also tend to be one of the first financial intermediaries that businesses deal with. Banks collect the savings of individuals as well as businesses and then lend these pooled savings to other individuals and businesses. They make money by charging a rate of interest to borrowers that exceeds the rate they pay to savers. They are also one of the major lenders to businesses.

In the United States, although banks can lend money to industrial corporations, banks are prohibited by law from owning them. This restriction prevents banks from lending money to the industrial firms that they own; however, this restriction is not universal around the world. In Australia, there are tight restrictions on the extent to which a bank can invest in a non-bank corporation, and lending to such corporations must be carried out with the same care as lending to unrelated parties. In countries such as Japan and Germany, banks are among the largest owners of industrial firms.

Table 2.1 lists the four major Australian banks and their total deposits. Most Australians have a relationship of one kind or another with at least one of these banks. Each bank has a widely distributed retail branch network and a presence throughout the country. Between them, these banks control almost 80% of total bank deposits in Australia, and as at the end of 2017 the four major Australian banks were the four largest companies in Australia by market capitalisation.

Non-bank financial intermediaries

In addition to commercial banks, there are a number of highly specialised financial intermediaries that also provide financial services to consumers and businesses. These include:

- building societies, such as the Newcastle Permanent Building Society
- credit unions, such as the Police Credit Union and the South West Credit Union
- money market corporations, such as Rabo Australia Ltd (a cooperative similar to a building society or credit union)

Table 2.1 The four major Australian banks as at June 2017

Institution name	Description	Total deposits (\$ millions)
Commonwealth Bank of Australia [CBA]	The CBA was founded as a government savings and trading bank in Melbourne in 1911. It acted as Australia's central bank from 1920 until the creation of the Reserve Bank of Australia (RBA) in 1960. The CBA was privatised in 1996. It is the largest bank in Australia, by market capitalisation, and the 10th largest in the world. It is headquartered in Sydney.	\$524 290
Westpac Banking Corporation [WBC]	Westpac was originally called the Bank of New South Wales when it was founded in 1817. It is Australia's oldest bank and, indeed, oldest company. Its name was changed to Westpac in 1982 after it acquired the Commercial Bank of Australia. It has Australia's largest branch network, with over 1400 branches. It is headquartered in Sydney.	\$447 773
National Australia Bank Ltd [NAB]	NAB dates its history to the founding of the National Bank of Australasia in 1858, and changed its name to the National Australia Bank in 1981 following a merger with the Commercial Banking Company of Sydney. It has operations in 10 countries. It is headquartered in Melbourne.	\$353 850
Australia and New Zealand Banking Group Ltd [ANZ]	ANZ was founded as the Bank of Australasia in Sydney in 1835. It changed its name to the ANZ bank in 1951, and then to its current name in 1970, after a series of mergers and acquisitions. It is the third largest bank in Australia, by market capitalisation, and the largest bank in New Zealand. It is headquartered in Melbourne.	\$316 110

Sources: Adapted from Australian Prudential Regulation Authority, <www.apra.gov.au/adi/Publications/Pages/monthly-banking-statistics.aspx>, retrieved 31 August 2017; Commonwealth Bank of Australia Ltd, <www.commbank.com.au/about-us/our-company/history.html>; Westpac Banking Corporation Ltd, <www.westpac.com.au/about-westpac/westpac-group/company-overview/our-history/>; National Australia Bank Ltd, <www.nab.com.au/about-us>; Australia and New Zealand Banking Group Ltd, <www.anz.com/about-us/our-company/>.

- finance companies, such as Bell Potter Capital (a subsidiary of Bell Financial Group Ltd [BFG]) and BT Securities Ltd (a subsidiary of Westpac Banking Corporation [WBC])
- insurance companies, such as GIO and AAMI (both subsidiaries of Suncorp Group Ltd [SUN])
- superannuation funds, such as AMP Ltd [AMP] and UniSuper Ltd (a not-for-profit company owned by Australian universities)
- managed funds, such as BlackRock Inc. [BLK] (a US listed company) and Colonial First State (a subsidiary of the Commonwealth Bank).

Building societies and credit unions

Building societies and **credit unions** are mutual organisations owned by their members. They provide similar financial services to banks, taking deposits and providing mortgage loans and personal loans. Banks, building societies and credit unions are collectively referred to authorised deposit-taking institutions (ADIs).

Building societies flourished prior to the 1980s but, as a result of banking deregulation and the fact that the largest building societies have become banks, they have declined in importance. As of 2017 there were three building societies,¹ controlling less than 0.2% of the total assets of financial institutions.²

Credit unions are generally small providers of financial services, and have traditionally operated on the basis of a *common bond of association*, such as a shared employer. Their relative importance in the Australian financial sector has been constant over the past 40 years. As of 2017 there were 54 credit unions,³ controlling 0.5% of the total assets of financial institutions.⁴

Money market corporations

Money market corporations are sometimes referred to as merchant banks or investment banks, although these terms are not approved by the **Australian Prudential Regulation Authority (APRA)** if used by institutions that are not banks. Money market corporations tend to operate in wholesale—rather than retail—markets, providing services to businesses and government agencies. They provide a range of financial services that include deposits, loans and advisory services to client firms when they enter into major transactions such as buying or merging with other firms. The share of assets controlled by money market corporations has dropped from over 7% in the 1990s to 0.5% in 2017.⁵

Finance companies

Finance companies provide loans to householders and small businesses. Their share of financial assets has dropped from about 13% in the 1990s to less than 2% in 2017.⁶

Money market corporations and finance companies are collectively referred to as registered financial corporations (RFCs). Their decline has largely resulted from deregulation of the banking industry, allowing banks to offer a range of services traditionally provided by RFCs.

Insurance companies

Insurance companies (including general insurance and life insurance companies) are by definition in the business of selling insurance to individuals and businesses to protect their investments. This means that they collect premiums, hold the premiums in reserves until there is an insured loss and then pay out claims to the holders of the insurance contracts. Note that in the course of collecting and holding premiums, the insurance companies build up huge pools of reserves to pay these claims. These reserves are then used in various types of investments, including loans to individuals and businesses. American International Group, Inc. [AIG] is now a household name because of the debt market crisis of 2008 and the ensuing US government bailout. However, the company's business activities serve as an example of the degree to which insurance companies have become involved in business finance. AIG not only sells insurance products but also provides financial services, including aircraft and equipment leasing, consumer finance, insurance premium financing, and debt and loan insurance. Of particular note in this listing of services is debt and loan insurance, which includes selling guarantees to lenders that reimburse them should the loans they made go into default. This type of transaction is called a **credit default swap** and we will have more to say about this in Chapter 21, where we discuss risk management.

General insurers have consistently controlled about 3% of the assets of financial institutions, while the proportion of financial institution assets controlled by life insurance companies has fallen from over 10% to about 2.5% over the past 30 years⁷—largely because superannuation has played an increasingly significant role in the financial planning of Australians, and large superannuation payouts are seen as taking the place of life insurance for many people.

Superannuation funds

Superannuation is designed to provide funds for retirement. Successive Australian governments have taken steps to encourage Australians to save for their retirement, in order to reduce the threat to the sustainability of the aged pension posed by our ageing population. This has been achieved by providing tax incentives to encourage private superannuation contributions, and by requiring employers to contribute to superannuation on behalf of their employees. Employer contributions began at 3% or 4% of an employee's salary in 1992, rose to 9% over the following 10 years and are scheduled to gradually increase to 12% between now and 2025. Employers and employees make contributions over the life of the employee, and a payout is made when the employee retires or dies.

As a result of these developments, the assets controlled by superannuation funds have grown enormously, from less than 10% of total financial institutions' assets in 1980 to over 25% today.⁸ There is now over \$2.2 trillion in superannuation funds,⁹ and this money all needs to be invested in debt, equity and property in order to yield a satisfactory return.

Investment companies

Investment companies are financial institutions that pool the savings of individuals and invest the money, purely for investment purposes, in the securities issued by other companies.

Managed funds

A **managed fund** is a special type of intermediary through which individuals can invest in virtually all of the securities offered in the financial markets. Managed funds typically focus on a particular type of investment, such as cash, debt securities, domestic and international shares, and property. When individuals invest in a managed fund, they receive shares (or 'units') in a fund that is professionally managed according to a stated investment objective or goal—for example, investing only in international shares. Shares in the managed fund grant ownership claim to a proportion of the managed fund's portfolio.

Managed funds can be *listed* or *unlisted*. A unit in an unlisted managed fund is not really like a share in a company, because you can only buy and sell units in the managed fund directly from the managed fund itself. The price you pay when you buy your units and the price you receive when you sell your units is called the managed fund's **net asset value (NAV)**, which is calculated daily based on the total value of the fund divided by the number of units outstanding. In effect, as the value of the managed fund investments goes up, so does the price of the managed fund's units.

Unlisted managed funds can be 'open' or 'closed'. Additional units in an open fund can be created and issued based on demand, whereas the number of units in a closed fund is fixed.

Managed funds that are listed on the stock exchange are referred to as exchange-traded products (ETPs) and are generally closed funds. A significant component of these ETPs are referred to as **exchange-traded funds (ETFs)**, which seek to track an index, such as the S&P/ASX 200, and generally have relatively low expenses.

Managed funds provide a cost-effective and administratively convenient way to diversify, which reduces risk—a great benefit for the small investor. If you only have \$10 000 to invest, it would be difficult to diversify by purchasing shares of individual companies because you would have to pay a brokerage commission for each individual parcel of shares you purchased. For example, buying shares in 50 different companies is likely to be time-consuming and cost you \$1000 or more in fees, which would be 10% of the amount invested. By buying units in a managed fund, you can indirectly purchase a portfolio of shares in 50 or more companies with just one transaction at half the cost of investing in individual parcels of shares. In addition, on an ongoing basis you may be required to process and retain, each year, more than 100 items of correspondence (such as dividends and annual reports) from the companies you've invested in.

Controlling costs in managed funds

In choosing the right managed fund, one thing is clear—costs kill. You will want to pick your fund with an eye towards keeping expenses down. For example, if you start with \$10 000 and invest it for 40 years, achieving gross returns (before expenses) of 13% (commonly estimated to be the long-term average return on the Australian stock market including dividends), and assuming fund operating expenses of 2% (the average expense on an actively managed Australian managed fund),¹⁰ your \$10 000 will grow to just over \$650 000. That sounds good until you notice that the cost of that 2% operating expense plus forgone earnings on your investment totals over \$677 800! That's over 51% of the gross earnings of the fund. If you reduce expenses to 0.75%, your investment grows to just over \$1 million and the cost of operating expenses, plus forgone earnings, drops to \$310 500, adding \$367 300 to your retirement savings!

It is possible to lower your expenses to as little as 0.5% by investing in an index fund (i.e. a fund that tries to track a market index, such as the S&P/ASX 200, by buying the shares that make up that index). In general, index funds perform better than the actively managed funds. In fact, for the five years to the end of 2016, 70% of Australian actively managed share funds underperformed the S&P/ASX 200 index.¹¹

Hedge funds

A **hedge fund** is very much like a managed fund, but hedge funds are less regulated and tend to take more risk. They also tend to more actively influence the managers of the corporations that they invest in.

Management fees are also quite a bit higher for hedge funds; they typically run at about 2% of the assets and include an incentive fee (typically set at 20% of profits that exceed a benchmark return) based on the fund's overall performance.

Private equity firms

A **private equity firm** is a financial intermediary that invests in equities that are not traded on the public capital markets. Two types of private equity firm dominate this group: venture capital (VC) firms and leveraged buyout (LBO) firms. **Venture capital firms** raise money from investors (wealthy people and other financial institutions), which they then use to provide financing for private start-up companies when they are first founded. Notable Australian success stories that

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grew out of venture capital funding include the employment website Seek Ltd [SEK] and the biotechnology companies ResMed Inc. [RMD], Cochlear Ltd [COH] and Pharmaxis Ltd [PXS].¹²

The second major category of private equity firm is the **leveraged buyout fund**. These funds acquire established firms that typically have not been performing very well, with the objective of making them profitable again and then selling them. LBO funds have been the subject of a number of films, including *Barbarians at the Gate*, *Other People's Money* and *Wall Street*.

The LBO market is dominated by American multinational private equity firms, and in the past few years these have been involved in attempts to take over a number of well-known Australian companies; not all of these attempts were successful. Successful attempts include the buy-out and subsequent float of Myer Holdings Ltd [MYR] in 2006 and the buy-out by CVC Capital of Channel 9 in 2007. Notable failures include an attempt by Texas Pacific Group to take over Qantas Airways Ltd [QAN] in 2006, and an attempt by Kohlberg Kravis Roberts (KKR) to buy out Coles in 2007. In 2006, KKR also failed in an attempt to buy out PBL Media, opting instead to invest in Seven West Media Ltd [SWM], which owns Channel 7.¹³

A recent successful buy-out—and subsequent corporate failure—involved the Australian retailer Dick Smith Electronics. The company was founded by Dick Smith in 1968 and was sold to Woolworths Ltd [WOW] in 1982. In 2012 the business was purchased by Australian private equity firm Anchorage Capital Partners in a deal worth \$115 million (although much of that money came from the business itself and Anchorage reportedly only paid \$10 million in cash). Dick Smith Holdings was floated in December 2013, at which time it was worth \$520 million, but over the next few years the share price plunged 84% and the company was liquidated in 2016.

The amount of money managed by private equity firms has grown dramatically over the past three decades, with new funds raised totalling around half a trillion dollars in 2014. Three-quarters of the total is raised in North America; the majority of the remainder is raised in Europe. Of the total amount of money managed by private equity firms, roughly two-thirds is invested in the buy-out or LBO category. In fact, LBO transactions grew from \$7.5 billion in 1991 to \$500 billion in 2006! But, as you might expect, the number of deals dropped dramatically in the fourth quarter of 2008 and in 2009, and is still not up to the 2006 level. However, the dollar amount of the capital invested by private equity intermediaries understates their importance to the economy. Private equity funding is largely responsible for financing the birth of new businesses and underwriting the renovation of old and faltering businesses.

Before you move on to 2.3

Concept check 2.2

- 3 Explain how individuals and firms use financial intermediaries to raise money in the financial markets.
- 4 How do commercial banks differ from other, non-bank financial intermediaries?
- 5 What are examples of managed funds?
- 6 What is a hedge fund, and how does it differ from a managed fund?
- 7 What are the two principal types of private equity firm?

OBJECTIVE 3

Describe the different securities markets for bonds and shares.

2.3 The financial marketplace: securities markets

A **security** is a negotiable instrument that represents a financial claim. It can take the form of ownership (shares) or a debt agreement. The securities markets allow businesses and individual investors to trade the securities issued by public corporations. Public corporations are those whose debt and equity are traded in public markets. Securities markets are typically discussed in terms of primary and secondary markets. A **primary market** is a market in which new, as opposed to previously-issued, securities are bought and sold for the first time. In this market, firms issue new securities to raise money that they can then use to help finance their businesses. The key feature of the primary market is that the firms selling securities actually receive the money raised.

The **secondary market** is where all subsequent trading of previously-issued securities takes place. In this market, the issuing firm does not receive any new financing because the securities

it has sold are simply being transferred from one investor to another. The principal benefit of the secondary market for the shareholders of firms that sell their securities to the public is liquidity; for example, if you purchased Telstra Corporation Ltd [TLS] shares when that company went public by making an **initial public offering (IPO)**, you could easily sell those shares in the secondary market if you decided that you no longer wanted to hold them. This ability to sell when you want to means that your Telstra shares are a very liquid investment. As a result, investors are more willing to invest in these securities, which benefits the issuing firm.

How securities markets bring corporations and investors together

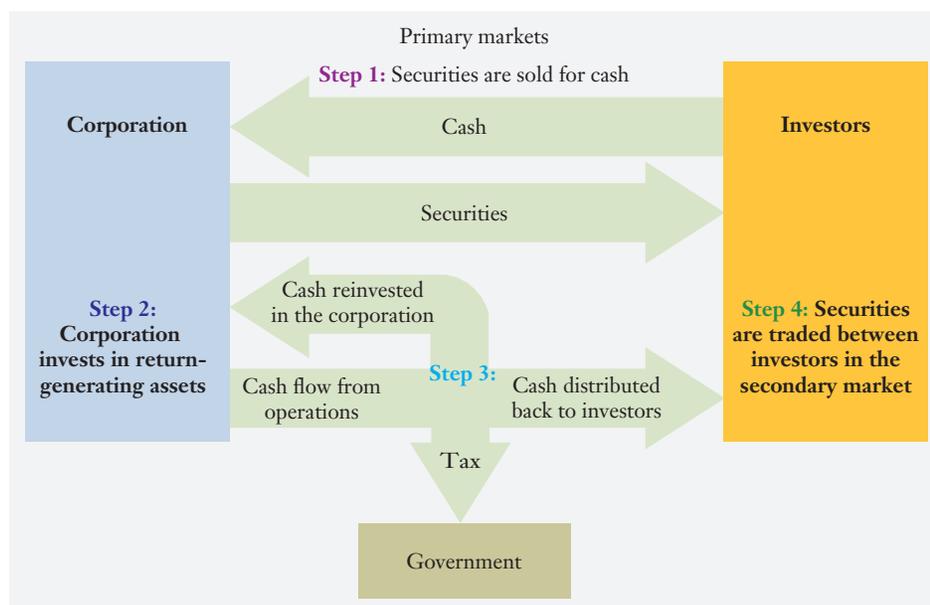
Figure 2.2 describes the role of securities markets in bringing investors together with businesses looking for financing. In this regard, the securities markets are just another component of the financial marketplace. They are unique, however, in that investors in securities markets provide money directly to the firms that need it, as opposed to making deposits in commercial banks that then loan money to those firms.

We can think of the process of raising money in the securities markets in terms of the four-step process highlighted in Figure 2.2.

- Step 1: The firm sells securities to investors.** Corporations raise money in the securities markets by selling either debt or equity. When the firm initially sells the securities to the public, the sale is considered to take place in the primary market. This is the only time that the firm receives money in return for its securities.
- Step 2: The firm invests the funds it raises in its business.** The corporation invests the cash raised in the security markets in ways that it hopes will generate cash flows—for example, it may invest in a new restaurant, a new hotel, a factory expansion or a new product line.

Figure 2.2 Security markets provide a link between the corporation and investors

Step 1: Initially, the corporation raises funds in the financial markets by selling securities (a primary market transaction). **Step 2:** The corporation then invests this cash in return-generating assets—new projects. **Step 3:** The cash flow from those assets is reinvested in the corporation, distributed back to the investors or paid to the government in the form of tax. **Step 4:** Immediately after the securities have been issued, they are traded between investors in the secondary market, thereby setting their market price.



Step 3: The firm distributes the cash earned from its investments. The cash flow from the firm's investments is reinvested in the corporation, paid to the government in tax or distributed to the investors who own the securities issued in step 1. In the last case, the cash is distributed to the investors who loaned the firm money (i.e. who bought the firm's debt securities) through the payment of interest and principal. Cash is paid to the investors who bought equity (shares) through the payment of cash dividends or the repurchase of the firm's previously-issued shares.

Step 4: Securities trading in the secondary market. Immediately after the securities are sold to the public, the investors who purchased them are free to resell them to other investors. These subsequent transactions take place in the secondary market.

Types of security

If you read the *Australian Financial Review* or the financial section of a metropolitan newspaper, view finance reports on the evening news or online, or access financial information from television channels or websites such as CNBC or Bloomberg, you are already aware of the wide variety of investment alternatives to choose from. These choices fall into one of two basic categories: debt and equity.

Debt securities

Firms borrow money by selling **debt securities** in the debt market. If the debt must be repaid in less than a year, these securities are sold in the short-term debt market, also called the money market. If the debt has a **maturity** (the length of time until the debt is due) of between 1 and 10 years, it is often referred to as a **note**, and if longer than 10 years it is called a **bond** and is sold in the capital market. The capital market refers to the market for long-term financial instruments. The vast majority of these bonds pay a fixed interest rate, which means that the interest the owner of the bond receives never changes over the bond's lifetime. Bonds are generally described using fairly exotic terminology. For example, we might say that a bond has a **face or par value** of \$1000 and that it pays an 8% **coupon rate** with two payments per year. What this means is that when the bond matures and the issuer (borrower) has to repay it, the owner of the bond (the lender) will receive a payment of \$1000. In the meantime, the holder will receive an interest payment every six months equal to \$40, or \$80 per year, which is 8% of \$1000.

Equity securities

Equity securities represent ownership of the corporation. There are two major types of equity security: *ordinary shares* and *preference shares*. When you buy an equity security you are making an investment that you expect will generate a return. However, unlike a bond, which provides a promised set of interest payments and a schedule for the repayment of principal, the returns earned from an equity security are less certain. To further explore this topic, let us take a brief look at both types of equity security.

Ordinary shares

Ordinary shares are securities that represent equity ownership in a corporation, provide voting rights and entitle the holder to a share of the company's success in the form of dividends and any capital appreciation in the value of the security. Investors who purchase ordinary shares are the residual owners of the firm. This means that the ordinary shareholder's return is earned only after all other security-holder claims (debt and preference shares) have been satisfied in full.

If you were to purchase 100 of Telstra's ordinary shares, you would be a part-owner in the company. In essence, you would own an interest in the firm's fixed-line, mobile and broadband networks. The more shares you buy, the bigger the portion of Telstra you own. What do you get as an owner of Telstra's shares? Don't count on a free mobile phone or a discount on your telephone bill. As an owner of the firm, you will have voting rights that entitle you to vote for the members of the firm's board of directors who oversee the selection of the management team. But as a small-time investor, you will have limited voting rights—your investment in 100 Telstra shares gives you about 0.000008% of Telstra's total shares on issue. So, you are not going to have much say about who gets elected to the Telstra board of directors. Nonetheless, if Telstra

earns a profit then you will probably receive a portion of that profit in the form of a dividend payment. *It should be noted that, unlike bond payments, firms do not have to pay dividends.* For example, if a company needs money to invest in a new product or project, it can choose to retain all of its earnings within the firm and pay no dividends. For example, Telstra's dividend policy ever since it was floated in 1997 has been to pay out 100% of its profit as dividends, making it a popular investment for those wanting a regular income from their investments. However, in 2017 the company announced a change in its dividend policy, saying that in future it would pay out between 70% and 90% of its profit. This announcement resulted in a significant fall in Telstra's share price.

Investors generally place a higher value on the shares of firms that earn higher profits, as this allows the firm to decide whether to reinvest these higher earnings in additional projects or to pay higher dividends, or both. Expectations of high profits in the future can be enough to result in large changes in the share price. For example, on 26 July 2012 the share price of minerals explorer Sirius Resources Ltd went up 650% in one day, following the company's nickel discoveries in Western Australia, and increased 3533% between 25 July and the end of 2012. Between 25 July 2012 and its peak on 15 March 2013, the share price had increased 8317%. However, when the market revised its expectations about the company's future prospects, its share price gradually fell 35% from its peak in March 2013 to the middle of 2014—although still ending up as a healthy 5300% increase from the beginning of 2012! This all goes to show that share prices can fluctuate dramatically.

Preference shares

Preference shares, like ordinary shares, are equity securities. However, as the name implies, preference shareholders take a 'preferred' position relative to ordinary shareholders. This means that preference shareholders receive their dividends before any dividends are distributed to ordinary shareholders, who receive their dividends from whatever is left over. Note, however, that if the company is unable to meet its debt obligations, neither preference nor ordinary shareholders will be entitled to be paid a dividend. However, the dividends promised to the preference shareholders will generally accrue and must be paid in full before the ordinary shareholders can receive any dividends. This feature is often referred to as a cumulative feature, and preference shares with this feature are often referred to as cumulative preference shares. In addition, preference shareholders have a preferred claim on the distribution of the assets of the firm in the event that the firm goes bankrupt and sells or liquidates its assets. Very simply, the firm's creditors (bondholders) get paid first, followed by the preference shareholders, and anything left then goes to the ordinary shareholders. Of interest is that not all firms issue preference shares.

Preference shares are sometimes referred to as hybrid securities because they have many characteristics of both ordinary shares and bonds. Preference shares are similar to ordinary shares in that (i) they have no fixed maturity date, (ii) the non-payment of dividends does not bring on bankruptcy for the firm, and (iii) the dividends paid on these securities are not deductible for tax purposes. However, preference shares are similar to corporate bonds in that (i) the dividends paid on the shares, like the interest payments made on bonds, are typically a fixed amount, and (ii) payment of dividends to shareholders is generally dependent on the firm generating profits.

Other financial instruments

So far, we have touched only the tip of the iceberg in terms of the variety of different types of financial instrument that are available to investors and firms. Table 2.2 (overleaf) provides a listing of a number of different financial instruments used by firms and governments to raise money, beginning with the shortest-maturity instruments that are traded in the money market and moving through to the longest-maturity instruments that are traded in the capital market.

Stock markets

A stock market is a public market in which company shares are traded. The stock markets are traditionally classified as either organised security exchanges or over-the-counter markets.

Organised security exchanges are organisations that provide for the buying and selling of

Table 2.2 Characteristics of different financial instruments**Money market debt****For the borrower:**

- good way of inexpensively raising money for short periods of time
- rates tend to be lower than long-term rates
- can borrow money to match short-term needs
- if interest rates rise, the cost of borrowing will immediately rise accordingly.

For the investor:

- very liquid—you have access to your money when you need it
- safe—generally invested in high-quality investments for brief periods
- low returns—rates tend to be close to the rate of inflation.

Instrument	Market	Major participants	Riskiness	Original maturity	Interest rates
Australian Treasury notes	Money—Debt	Issued by Australian Treasury	Default-free	30, 60 or 90 days	Generally very close to the RBA's cash rate
Bank Accepted Bills (BABs)	Money—Debt	A firm's promise to pay, guaranteed by a bank	Low risk of default, dependent on the risk of the guaranteeing bank	30, 90 or 180 days	Higher than Australian Treasury notes, recognising that they carry some level of credit risk
Negotiable Certificates of Deposit (NCDs)	Money—Debt	Issued by major money-centre commercial banks with a denomination of at least \$100 000 to large investors	Default risk depends on the strength of the issuing bank	2 weeks to 1 year	The same as for BABs
Commercial paper	Money—Debt	Issued by financially secure firms to fund operating expenses or current assets (e.g. inventories and receivables)	Low default risk, dependent on the risk of the issuing firm	Up to 270 days	Variable depending on the risk level, but generally higher than for BABs
Money market managed funds	Money—Debt	Issued by managed funds and invested in debt obligations such as Treasury notes, NCDs and commercial paper; held by individuals and businesses	Low degree of risk	No specific maturity date (can be redeemed any time)	Low interest rates due to the low level of risk—generally a little lower than for BABs
Consumer credit, including credit card debt	Money—Debt	Non-mortgage consumer debt issued by banks/credit unions/finance companies	Risk is variable	Varies	Variable depending on the risk level

Long-term debt and fixed-income securities market**For the borrower:**

- interest rates are locked in over the entire life of the debt
- has a tax advantage over ordinary shares, in that interest payments are tax-deductible whereas dividend payments are not.

For the investor:

- can be used to generate dependable current income
- some bonds produce tax-free income
- long-term debt tends to produce higher returns than short-term debt
- less risky than ordinary shares
- investor can lock in an interest rate and know the future returns (assuming that the issuer does not default on its payments).

Table 2.2 Characteristics of different financial instruments (*continued*)

Instrument	Market	Major participants	Riskiness	Original maturity	Interest rates
Australian Treasury bonds	Capital—Debt	Issued by the Australian government to banks, managed funds, businesses, individuals and foreign countries	No default risk but price will decline if interest rates rise	Original maturities of between 2 and 20 years	Higher than Australian Treasury notes, recognising that they expose the investor to interest-rate risk
Mortgages	Capital—Debt	Borrowings from commercial banks, building societies and credit unions by individuals	Generally low because of the mortgage over property, but some ‘non-conforming loans’ to high-risk borrowers carry more risk	Up to 30 years	Higher than Australian Treasury bonds, recognising that they expose the investor to credit risk
Semi-government bonds (state and local government bonds)	Capital—Debt	Issued by state and local governments to individuals, institutional investors and foreign countries	Riskier than Australian government securities, with the level of risk dependent on the issuer	Up to 30 years	Generally higher than for Treasury bonds of the same maturity
Corporate bonds	Capital—Debt	Issued by corporations to individuals and institutional investors	Risk is dependent on the financial strength of the issuer; riskier than Australian government securities but less risky than preference and ordinary shares	The Australian corporate bond market is underdeveloped and illiquid, with most firms issuing bonds into international markets, and reliable data on maturity dates and interest rates are not available	—

Preference shares**For the issuer:**

- the issuing firm is not legally obligated to make dividend payments
- have the disadvantage that dividends are not tax-deductible for the issuer, whereas interest payments from debt are tax-deductible.

For the investor:

- there may be a tax advantage if dividends carry franking credits, giving the investor credit for company tax paid by the issuer of the shares. (This is discussed in more detail in Chapter 3.)

Instrument	Market	Major participants	Riskiness	Original maturity	Interest rates/Dividends
Preference shares	Capital—Equity (preference shares)	Issued by corporations to individuals, other corporations and institutional investors	Riskier than corporate bonds but less risky than ordinary shares	No maturity date	Dependent on risk and the structure of the security—e.g. floating rate and convertible preference shares

Ordinary shares**For the issuer:**

- the issuing firm is not legally obligated to make payments
- do not have a maturity date
- issuance of ordinary shares increases creditworthiness because the firm has more investor money to cushion the firm in the case of a loss

(TABLE 2.2 CONTINUES >>)

Table 2.2 Characteristics of different financial instruments (*continued*)

- have a tax disadvantage relative to debt—whereas debt interest payments are deductible for tax purposes, ordinary share dividends are not.

For the investor:

- over the long term, ordinary shares have outperformed debt-based financial assets
- along with the increased expected return comes increased risk
- there may be a tax advantage because most dividends carry franking credits.

Instrument	Market	Major participants	Riskiness	Original maturity	Interest rates/Dividends
Ordinary shares	Capital—Equity (ordinary shares)	Issued by corporations to individuals, other corporations and institutional investors	Risky, with dividends only paid when they are declared	No maturity date	Dependent on the risk of the company and its management objectives

Sources: Adapted from Reserve Bank of Australia, <www.rba.gov.au> and Rate City, <www.ratecity.com.au/home-loans>. Retrieved 4 September 2017.

securities, and allow all participants to buy or sell at publicly advertised prices. In some exchanges, financial instruments are traded on the premises of the exchange. This is called floor trading, and is perhaps what most people think of when they imagine a stock exchange—a large number of people in colourful jackets (for identification purposes) yelling orders to each other and scribbling on notepads (or these days, hand-held computers). An alternative to floor trading is an electronic trading system set up and run by the exchange, allowing stock brokers to enter trades via a computer on their desk (and increasingly, allowing buyers and sellers to place orders over the Internet). The **over-the-counter (OTC) markets** include all security markets except the organised exchanges, and involve transactions directly between two parties—the buyer and the seller—without the intervention of an exchange.

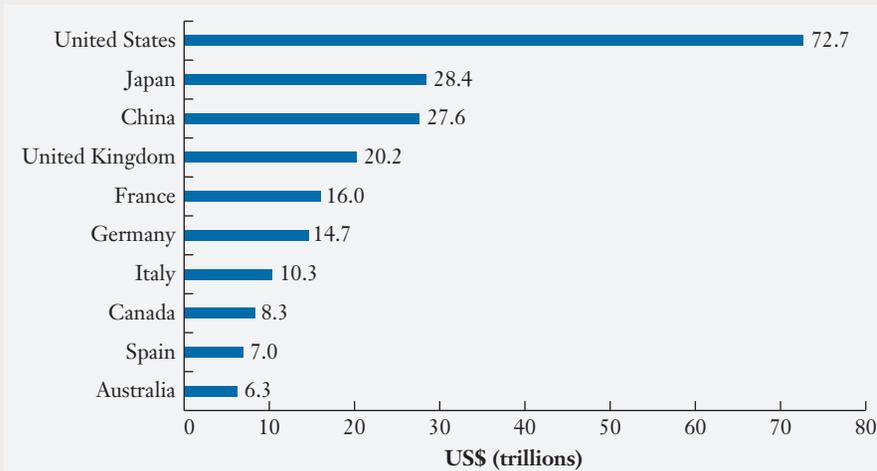
Organised exchanges

The world's largest public stock market is the **New York Stock Exchange (NYSE)**, whose history can be traced back to 1792. It began when 24 traders signed the Buttonwood Agreement, a pact named after the tree under which traders gathered, obligating them to 'give preference' to each other in security trading. When winter came, the 24 traders moved to the back of Wall Street's Tontine Coffee House, leaving the other traders out in the cold. The ordinary shares of almost 3000 listed companies are traded on this exchange, which has monthly trading volumes that exceed 30 billion shares! In addition, the total value of the shares listed on the NYSE in 2017 was over US\$21 trillion.¹⁴ To be listed on the NYSE, a firm must meet strict requirements relating to profitability and market value, and be widely owned. If a listed company fails to meet these requirements, the exchange will delist it and it will no longer be traded on the NYSE.

Much of the trading on the NYSE is made up of block trades. A **block trade** is a transaction by one holder involving 10 000 shares or more. In a similar vein, a **block holding** is a block of 10 000 shares or more held by a single individual or institution. In recent years, block trades have accounted for between one-quarter and one-third of the reported volume of trading. This tells us that large, institutional investors play a major role in the workings of the NYSE.

Today, the mechanics of trading have changed dramatically, and 80–90% of all trades are done electronically. Even if your stock is listed on an organised exchange like the NYSE, the odds are that its transactions won't be executed on the floor of that exchange but rather electronically in the maze of computers that make up the global trading network. In effect, there is now little difference between an organised exchange and an over-the-counter market in how a security is traded. However, the NYSE remains a hybrid market, allowing for face-to-face trading between individuals on the floor of the stock exchange in addition to automated electronic trading. As a result, during times of extreme flux in the market, at the opening or close of the market or for large trades, human judgment can be called on to make sure that the trade is properly executed.

Where's the money around the world?



The graph above describes the total value of financial assets (bonds, equities and bank assets) in the financial markets for the major countries of the world at the end of 2013. Although the totals change from year to year, these data provide some insight into the distribution of the value of financial assets around the world. When it comes to stock market capitalisation—that is, the value of all equities—the United States clearly dominates, being the home for about one-third of equities. Australia's financial markets are ranked tenth in the world.

Source: Adapted from International Monetary Fund, Global Financial Stability Report Statistical Appendix, April 2015, <www.imf.org/external/pubs/ft/gfsr/2015/01/pdf/statapp.pdf>; Bank for International Settlements, Summary of Debt Securities Outstanding, <<http://stats.bis.org/stab/srs/table/c1?p=20134&c=>>>; Summary of Consolidated Statistics by Nationality of Reporting Bank, <<http://stats.bis.org/stab/srs/table/b1?p=20134&c=>>>; Index Mundi, <www.indexmundi.com/facts/australia/market-capitalization-of-listed-companies>.

Your turn: See **Study Question 2–9**.

Australia's national organised exchange is the **Australian Securities Exchange (ASX)**. The country's first stock exchange was created in Melbourne in 1861, following the start of Australia's gold rush, and this was soon followed by the creation of exchanges in each capital city (and some other regional cities, such as Bendigo and Newcastle). In 1937, the six exchanges in each state capital formed the Australian Associated Stock Exchanges (AASE) in order to work more closely with each other and to develop common listing requirements and uniform trading rules. They merged to form the Australian Stock Exchange Ltd (ASX) in 1987, and the ASX became the first stock exchange in the world to list itself (as a company) on its own exchange. In 2006, the Australian Stock Exchange merged with the Sydney Futures Exchange (SFE) to form the Australian Securities Exchange (also known as the ASX).

The ASX is by far the largest organised exchange in Australia. There were over 2200 stocks listed on the ASX in 2017, with a total value of \$1.8 trillion,¹⁵ making the ASX the 14th largest stock exchange in the world by market capitalisation. In the past, there have also been a small number of other exchanges, providing listing opportunities for smaller, growing companies or which specialise in particular securities, such as the Bendigo Stock Exchange which was the second-largest stock exchange in the world in the mid-1800s and which closed in 2012, and the National Stock Exchange (NSX) which grew out of the Newcastle Stock Exchange.

Developed economies (and many developing economies) have at least one national exchange, and many also have a number of smaller, regional exchanges. Some of the largest and best-known exchanges in the world are the London Stock Exchange (LSE), the Toronto Stock Exchange (TSE) and Euronext, which is the largest stock exchange in Europe.

Over-the-counter (OTC) markets

The OTC market is a network of dealers that has no listing or membership requirements (although there are listing requirements on the NASDAQ in the United States, which we will discuss

FINANCE SPOTLIGHT



INTERNATIONAL

shortly). The OTC market draws its name from the fact that, historically, banks acted as the primary dealer for many individuals and sold smaller securities and bonds ‘over the counter’ from inventory they kept on hand. Today, the OTC market is electronic rather than personal, with NASDAQ leading the way. It is also the primary market for bond trading.

OTC listings are usually companies that are too new or too small to be eligible for listing on a major exchange. These companies also often have fewer shares available. As a result, in some cases small amounts of buying or selling may have a significant impact on the price of these OTC-listed shares.

The second-largest stock market in the world is the **NASDAQ**, which originally stood for National Association of Securities Dealers Automated Quotations but is now a stand-alone company and no longer owned by the NASD. The NASDAQ is an over-the-counter, dealer-driven market (unlike the NYSE and most other stock exchanges, where buyers and sellers of shares deal directly with each other without the intervention of the market). NASDAQ was formed in 1971 as the world’s first fully electronic stock market. Although NASDAQ lists more companies than the NYSE, with the exception of a few large high-tech firms these tend to be smaller companies. In 2017 over 3200 companies were listed on NASDAQ, after reaching a peak of 5556 in 1996. It has become highly popular as the trading mechanism of choice of several fast-growth sectors in the United States, including the high-technology sector. The ordinary shares of computer-chip maker Intel [INTC], for example, are traded via the NASDAQ, as are those of Facebook [FB], Microsoft [MSFT] and Alphabet [GOOG], the parent company of Google.

Australia also has an OTC market for unlisted shares, although it lacks a central quotation system such as NASDAQ has. OTC shares are generally issued by companies that do not meet the ASX listing requirements, and are traded through specialist brokers.

Reading share price quotes

There are many online sources where you can find share price quotes, such as the ASX (<www.asx.com.au>). There are also numerous online brokers providing market information, such as CommSec (<www.commsec.com.au>). To access these websites you need to set up an account, which takes a few days to become available but does not cost anything. Another good source of market information is Yahoo! Finance (<<http://finance.yahoo.com>>). This website provides information from around the world, so you need to put ‘.AX’ after the stock code to look up an Australian stock. The website also provides share price charts, news items and analyst estimates, along with each firm’s financial statements and key statistics ratios.

Figure 2.3 illustrates how to read share price quotes from CommSec. Other websites might be in a different format, but you can usually find similar information to that shown in Figure 2.3.

Financial markets and the Global Financial Crisis (GFC)

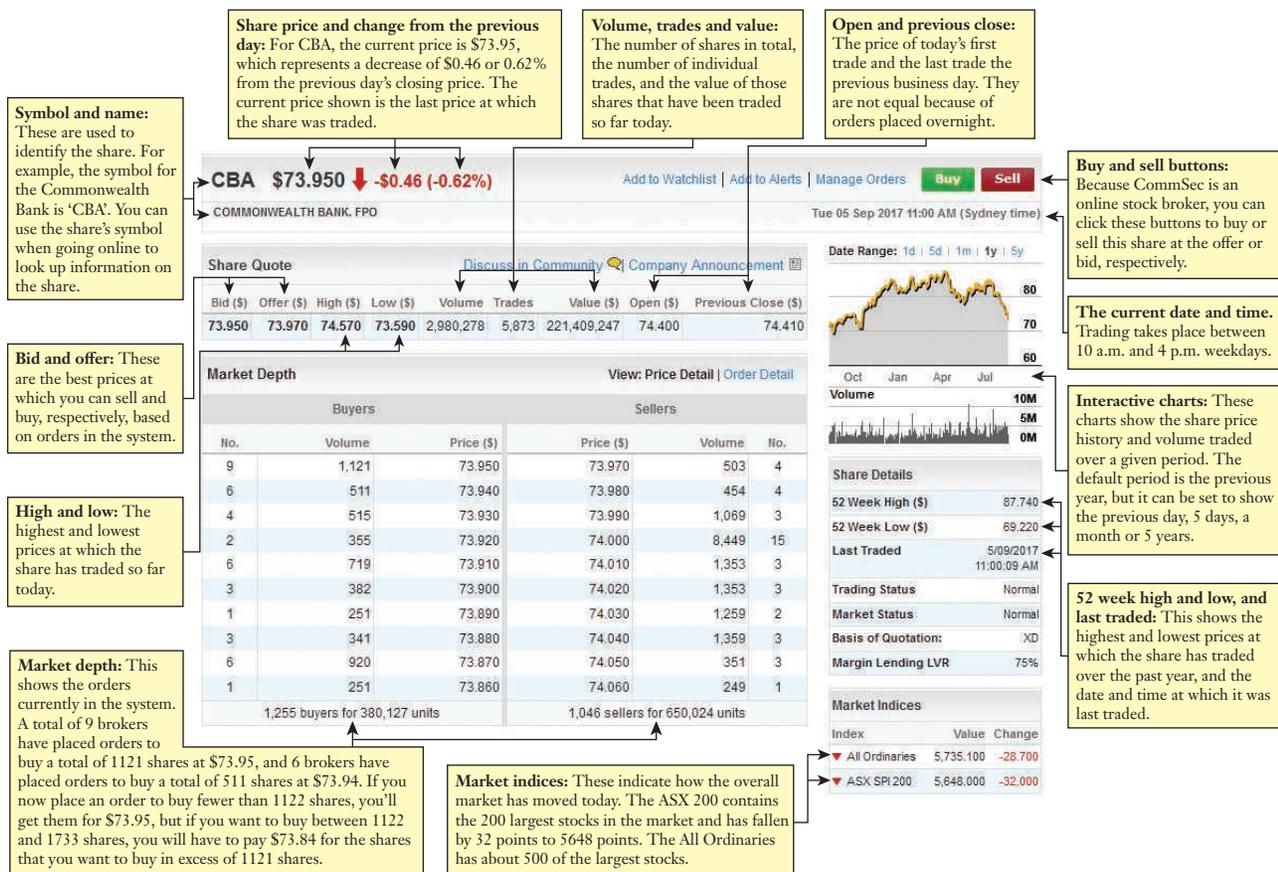
Beginning in 2007, the United States experienced its most severe financial crisis since the Great Depression of the 1930s. As a result, some financial institutions collapsed while the government bailed others out, unemployment skyrocketed, the stock market plummeted and the US entered into a recession. This economic turmoil spread to the rest of the world, causing a global recession from 2008 to 2012. Australia was one of a handful of countries to narrowly avoid falling into recession. Although the recession is now officially over, the world economy still faces the lingering effects of the financial crisis, which continue in the form of high rates of unemployment and a dramatic rise in the debt of many countries.

Although many factors contributed to the Global Financial Crisis, the most immediate cause has been attributed to the collapse of the US real estate market and the resulting real estate loan (mortgage) defaults—in particular, what are commonly referred to in the US as sub-prime mortgages. These were loans made to borrowers whose ability to repay them was highly doubtful. When the market for real estate began to falter in 2006, many of the home buyers with sub-prime mortgages began to default. As the economy contracted during the recession, people lost their jobs and could no longer make their mortgage loan payments, resulting in even more defaults.

To complicate the problem, most real estate mortgages were packaged in portfolios and resold to investors around the world. This process of packaging mortgages is called *securitisation*,

Figure 2.3 Share price quotes

The following is typical of what you would see if you looked at <www.commsec.com.au>.



Source: CommSec, a wholly owned, but not guaranteed, subsidiary of the Commonwealth Bank of Australia. Screenshot captured on 10 April 2018.

because it takes loans that cannot be publicly traded and turns them into securities that can be freely bought and sold by financial institutions. Here is how mortgages are securitised:

- 1 Home buyers borrow money by taking out a mortgage to finance a home purchase.
- 2 The lender, generally a bank, building society, credit union or mortgage broker that made the loan, then sells the mortgage to another firm or financial institution.
- 3 That financial institution pools together a portfolio of many different mortgages, and the purchase of that pool of mortgages is financed through the sale of securities called mortgage-backed securities (MBSs).
- 4 These MBSs are sold to investors who can hold them as an investment or resell them to other investors.

This process allows the bank or other financial institution that made the original mortgage loan to get its money back out of the loan and lend it to someone else. Thus, securitisation provides liquidity to the mortgage market and makes it possible for banks to loan more money to home buyers.

So what's the catch? As long as lenders properly screen the mortgages to make sure that the borrowers are willing and able to repay their home loans, and real estate values remain higher than the amount owed, then everything works fine. However, if the financial institution that originates the mortgage plans on selling it rather than holding it, it may have less incentive to properly screen the borrower. Why would lenders do this? It all goes back to **P5 Individuals respond to incentives**—the lenders made their money by making the loans, and sold them almost immediately. As a result, some lenders were not concerned with whether or

not the borrower could repay the loan; they were only concerned with *making* the loan—to them, repayment was someone else’s problem.

As a result, starting around 2006, home owners in the United States began to default on their mortgage loans. These defaults triggered losses at major banks, which in turn triggered a recession, causing people to lose their jobs and, correspondingly, the ability to make their mortgage payments. This scenario played out at least through 2009. In essence, this was a perfect storm of bad loans, falling housing prices and a contracting economy.

Unfortunately, these problems did not stay in the United States, as banks in Europe also held many of these MBSs, triggering a worldwide banking crisis. On top of this, European banks hold a lot of the European sovereign debt, so if a European country were to default on its debt, the European banking system would be in trouble. The recession that was originally sparked by the banking crisis revealed that the government budget situation in some countries, such as Greece, was unsustainable, leading to the recent European debt crisis. Many members of the European Union (EU) experienced severe budget problems, including Greece, Italy, Ireland, Portugal and Spain. These nations were all unable to balance their budgets and faced a very real prospect of defaulting on payments tied to government loans. The crisis at one stage threatened the viability of the euro and the EU. However, a series of government bailouts by the EU and the International Monetary Fund (IMF) averted disaster, and although there are still major debt problems in several European countries, by mid-2017 the countries mentioned above have all shown signs of recovering from the crisis and the European economy is showing signs of improvement. However, some are of the view that Europe’s financial problems were a major factor in Britain’s 2016 ‘Brexit’ decision to leave the European Union.

Australia fared better than most countries during the GFC, and was one of the few countries not to fall into recession. Indeed, in 2017 Australia broke the world record for the longest period without a recession—26 years. However, like many countries, significant government fiscal stimulus was required in order to stimulate the economy, and the resulting government debt and budget deficits will take years to overcome.

Before you begin end-of-chapter material

Concept check 2.3

- 8 What are debt and equity securities, and how do they differ?
- 9 How is a primary market different from a secondary market?
- 10 How do ordinary shares differ from preference shares?
- 11 What are the largest organised exchanges on which ordinary shares are bought and sold, in Australia and internationally?
- 12 What is the difference between an organised exchange and an over-the-counter market?

CHAPTER SUMMARY

Applying the principles of finance to Chapter 2

P2 There is a risk–return trade-off Financial markets are organised to offer investors a wide range of investment opportunities that have different risks and different expected rates of return that reflect those risks.

P4 Market prices reflect information It is through the operations of the financial markets that new information is efficiently impounded in security prices.

P5 Individuals respond to incentives One of the reasons for the sub-prime mortgage crisis in the United States, which sparked the Global Financial Crisis, may have been the lack of incentives to screen borrowers.

2.1 Describe the structure and functions of financial markets. (page 21)

SUMMARY Financial markets allocate the supply of savings in the economy to the individuals and companies that need the money. A primary market is a market in which new, as opposed to previously-issued, securities are bought and sold for the first time. In this market, firms issue new securities to raise money that they can then use to help finance their businesses. The key feature of the primary market is that the firms that raise money by selling securities actually receive the money.

The secondary market is where all subsequent trading of previously-issued securities takes place. In this market, the issuing firm does not receive any new financing because the securities it has sold are simply being transferred from one investor to another. The principal benefit to investors of having a secondary market is the ease with which the investor can sell or liquidate investments.

KEY TERMS

commercial bank, page 21 A financial institution that accepts deposits, makes loans and provides other services to the public.

defined benefit plan, page 20 A superannuation plan in which a retiree receives a specific amount based on his or her salary history and years of service.

defined contribution plan, page 20 A superannuation plan in which the retirement

benefit is based on the contributions made and the earnings of the fund.

superannuation fund, page 20 A fund designed to provide financial security upon retirement, by accepting compulsory employer contributions as well as private contributions and paying a lump-sum and/or pension benefit on retirement.

Concept check 2.1

- 1 The term 'financial intermediary' has a specific meaning—it describes a financial institution that borrows money from some lenders and lends money to others. Describe the economic units that an intermediary typically borrows from and the economic units to which it typically lends.
- 2 Name some financial institutions other than commercial banks that act as financial intermediaries.

2.2 Distinguish between commercial banks and other financial institutions in the financial marketplace. (pages 21–26)

SUMMARY Financial institutions are intermediaries that stand in the middle between borrowers who need money and savers who have money to invest. Widely varying financial institutions have evolved over time to meet special needs for intermediation, including commercial banks that accept deposits from savers and lend to borrowers, investment banks that help companies sell their securities to investors in order to raise the money they need, and many other institutions. Of particular interest are managed funds that collect the investments of many small investors and invest the pool of funds in shares, bonds and other types of security that are issued by businesses. In recent years, two types of investment company have captured the headlines: hedge funds and private equity funds. Both of these types of investment company accept investments from other financial institutions or wealthy individuals and invest in speculative and risky ventures.

KEY TERMS

Australian Prudential Regulation Authority (APRA), page 23 The Australian governmental regulatory authority that supervises financial institutions and the financial services industry.

building society, page 23 A mutual organisation (owned by its members) providing similar services to commercial banks.

capital market, page 21 The market for long-term financial instruments.

credit default swap, page 24 An insurance contract that pays out in the event of a credit event such as default or bankruptcy.

credit union, page 23 A small mutual organisation (owned by its members) providing similar services to commercial banks, historically based on a common bond of association, such as a shared employer.

exchange-traded fund (ETF), page 25 An investment vehicle traded on stock exchanges

much like a share. The entity invests its capital seeking a return for investors that is consistent with an underlying asset class or index.

finance company, page 24 A financial institution providing loans to householders and small businesses.

financial intermediaries, page 21 Institutions whose business is to bring together individuals and institutions with money to invest or lend with other firms or individuals in need of money.

hedge fund, page 25 An investment fund that is often open to a limited range of investors and that can undertake a wider range of investment and trading activities than other types of investment fund that are open to the general public (e.g. managed funds).

investment company, page 24 A firm that invests the pooled funds of retail investors for a fee.

Concept check 2.2

- 3 Explain how individuals and firms use financial intermediaries to raise money in the financial markets.
- 4 How do commercial banks differ from other, non-bank financial intermediaries?
- 5 What are examples of managed funds?
- 6 What is a hedge fund, and how does it differ from a mutual fund?
- 7 What are the two principal types of private equity firm?

leveraged buyout fund, page 26 A private equity firm that raises capital from individual investors and uses these funds along with significant amounts of debt to acquire controlling interests in operating companies.

managed fund, page 24 A professionally managed fund that pools the investments of many individuals and invests it in property, shares, bonds and/or other types of security.

money market, page 21 The financial market for short-term debt securities (maturing in one year or less).

money market corporation, page 23 A financial institution that raises capital, trades in securities,

provides financial services and manages corporate mergers and acquisitions.

net asset value (NAV), page 25 The difference between the current market value of the assets of an entity (such as a managed fund) and the value of that entity's liabilities.

private equity firm, page 25 A financial intermediary that invests in equities that are not traded on the public capital markets.

venture capital firm, page 25 An investment company that raises money from investors and uses the proceeds to invest in new start-up companies.

2.3 Describe the different securities markets for bonds and shares.

(pages 26–36)

SUMMARY When a corporation needs to raise large sums of money, it generally turns to the public market for bonds if it borrows, or equity if it seeks funds from new owners. The buyers of these securities include individual investors and investment companies such as managed funds. In some instances these markets are physical locations where buyers and sellers interact, such as the New York Stock Exchange at 11 Wall Street, or they consist of an electronic market of interconnected computers, such as NASDAQ and the Australian Securities Exchange (ASX). The over-the-counter market comprises specialist dealers or brokers facilitating trade in shares not listed on organised exchanges.

Beginning in 2007, the United States, and then the rest of the world, experienced its most severe financial crisis since the Great Depression of the 1930s. Although there is not a single cause for the crisis, the collapse of the US real estate market certainly contributed to this event.

KEY TERMS

Australian Securities Exchange (ASX), page 33 Australia's largest organised stock exchange.

block holding, page 32 The situation where one investor holds 10 000 or more shares of a single company.

block trade, page 32 A transaction by one holder involving 10 000 or more shares.

bond, page 28 A long-term debt instrument issued by a borrower, promising to pay the owner of the security a predetermined amount of interest each year along with the repayment of the face value (par value) on maturity.

coupon rate, page 28 The amount of interest paid per year, expressed as a percentage of the face value (or par value) of the bond.

debt securities, page 28 Financial instruments that represent loans to corporations. Long-term debt securities are called bonds and can be bought and sold in the bond market.

equity securities, page 28 Financial instruments that represent ownership claims on a business. Equity securities for corporations are called shares and can be bought and sold in the stock market.

face or par value, page 28 On the face of a bond, the stated amount that the firm is to repay on the maturity date.

initial public offering (IPO), page 27 The first time a company issues shares to the public. This occurs in the primary markets.

maturity, page 28 The period of time before a debt must be repaid.

NASDAQ, page 34 The world's second-largest stock market, which operates an over-the-counter market and specialises in high-tech stocks such as Microsoft and Facebook.

New York Stock Exchange (NYSE), page 32 The world's largest organised stock exchange.

note, page 28 Another term used to refer to indebtedness. Notes generally have a maturity between 1 and 10 years when originally issued.

ordinary shares, page 28 A form of equity security that represents the residual ownership of the firm.

organised security exchanges, page 29 Security exchanges that physically occupy space (such as a building or part of a building), or provide an electronic communications network, to facilitate trade in financial instruments.

over-the-counter (OTC) market, page 32 A network of dealers who trade securities directly between the two parties to a transaction without the intervention of an exchange.

preference shares, page 29 An equity security that holds preference over ordinary shares in terms of the right to the distribution of cash (dividends) and the right to the distribution of proceeds in the event of the liquidation of the issuing firm.

primary market, page 26 A market in which new securities are bought and sold for the first time.

secondary market, page 26 A financial market where previously-issued securities, such as shares and bonds, are bought and sold.

security, page 26 A negotiable instrument that represents a financial claim that has value. Securities are broadly classified as debt securities (bonds) and equity securities (shares).

Concept check 2.3

- 8 What are debt and equity securities, and how do they differ?
- 9 How is a primary market different from a secondary market?
- 10 How do ordinary shares differ from preference shares?
- 11 What are the largest organised exchanges on which ordinary shares are bought and sold, in Australia and internationally?
- 12 What is the difference between an organised exchange and an over-the-counter market?

STUDY QUESTIONS

- 2-1 **(Related to Finance Spotlight: 'Superannuation—defined benefit versus defined contribution' on page 20)** In the Finance Spotlight boxed feature, two types of superannuation are discussed. Describe each. Which type is now the dominant type in use?
- 2-2 What are the three principal sets of players that interact in the financial markets?
- 2-3 What is a financial intermediary? List and describe the principal types of financial intermediary in the Australian financial markets.
- 2-4 What do money market corporations do in the financial markets?
- 2-5 Describe the difference between the primary market and the secondary market.
- 2-6 What is a managed fund, and how does an unlisted fund differ from an exchange-traded fund (ETF)?
- 2-7 What is the difference between a debt security and an equity security?
- 2-8 What makes preference shares 'preferred'?
- 2-9 **(Related to Finance Spotlight: 'Where's the money around the world?' on page 33)** The distribution of financial assets around the world is described in the Finance Spotlight boxed feature.
- (a) What country dominates in terms of the stock market and total financial assets?
 - (b) Of the United Kingdom, Germany and France, which country has the most in the way of financial assets and which country has the least?
 - (c) Where does Australia rank in the distribution of financial assets around the world?
- 2-10 What is a hedge fund, and how is it different from a managed fund?
- 2-11 What are the two types of private equity fund? What does each do with the money it raises from investors?
- 2-12 Go to Yahoo! Finance (<<http://finance.yahoo.com>>) and enter the symbol for BHP Billiton [BHP.AX] in the 'Quote Lookup' box on the left-hand side of the web page.
- (a) Look up the following:
 - At what price did the share last trade?
 - What is the last trade time? (Note: This will be East Coast time in the United States, i.e. the time according to Wall Street.)
 - What is the day's price range for the share?
 - What is the closing change in the price of the share, in both dollar and percentage terms?
 - What is the share's 52-week price range?
 - (b) Now check out some of the links on the left-hand side of the web page. What kind of information listed there do you find interesting?
- 2-13 What is the market capitalisation of BHP Billiton? (This can be found on the Yahoo! Finance website; see Question 2-12.) Based on its current share price, how many outstanding shares does BHP have on issue?

- 2–14** Go to the Australian government’s information website (<<http://australia.gov.au>>). Click on the section for ‘Money and tax’ and then choose ‘Personal finance’ from the left-hand menu. This is a great website for information and help in managing your personal finances. Find an article you like, read it, and write a summary of it. Also, consider bookmarking this website—it is one you might want to start visiting on a regular basis.

ENDNOTES

- 1 Australian Prudential Regulation Authority, <<http://apra.gov.au/adi/Pages/adilist.aspx>>.
- 2 Reserve Bank of Australia, Statistical Table B1, <www.rba.gov.au/statistics/tables/index.html>, and author calculations.
- 3 Australian Prudential Regulation Authority, op. cit.
- 4 Reserve Bank of Australia, and author calculations, op. cit.
- 5 Ibid.
- 6 Ibid.
- 7 Ibid.
- 8 Ibid.
- 9 Association of Superannuation Funds of Australia, <www.superannuation.asn.au/resources/superannuation-statistics>.
- 10 Australian Investors Association, <www.investors.asn.au/education/other-investments/managed-funds/>.
- 11 Standard and Poor’s, <<http://us.spindices.com/resource-center/thought-leadership/spiva/>>.
- 12 The Snowball Group, <www.slideshare.net/LoganDowell/snowball-group-whitepaper-evolution-of-venture-capital-in-australia>.
- 13 Ibid.
- 14 New York Stock Exchange, <www.nyxdata.com/nysedata/asp/factbook/viewer_edition.asp?mode=tables&key=333&category=3>.
- 15 Australian Securities Exchange, <www.asx.com.au/about/historical-market-statistics.htm>.

UNDERSTANDING FINANCIAL STATEMENTS, TAXES AND CASH FLOWS

Chapter outline

- 3.1 An overview of the firm's financial statements (pages 42–45)
Objective 1 Describe the content of the four basic financial statements and discuss the importance of financial statement analysis to the financial manager.
-
- 3.2 The income statement (pages 45–50)
Objective 2 Evaluate firm profitability using the income statement.
-
- 3.3 Corporate tax, personal tax and dividend imputation (pages 50–57)
Objective 3 Estimate a firm's liability for corporate income tax and an individual's liability for income tax and capital gains tax, and distinguish between a classical taxation system and a dividend imputation taxation system.
-
- 3.4 The balance sheet (pages 57–65)
Objective 4 Use the balance sheet to describe a firm's investments in assets and the way it has financed them.
-
- 3.5 The cash flow statement (pages 65–75)
Objective 5 Identify the sources and uses of cash for a firm, using the firm's cash flow statement.
-

Principles P1, P3, P4 and P5 applied

In Chapter 3, we apply **P1** Principle 1: **Money has a time value**, **P3** Principle 3: **Cash flows are the source of value**, **P4** Principle 4: **Market prices reflect information** and **P5** Principle 5: **Individuals respond to incentives**. Financial statements are prepared in accordance with a set of accounting principles that drives a wedge between

reported statement figures, present values and cash flows, but we can determine the cash flow implications for a firm from its reported financial statements. It is critical that we learn how to do this. Moreover, we learn that a firm's financial statements do contain information that can be important to the formation of investor expectations concerning the firm's future performance and, consequently, market prices.

The Australian telecommunications company OneTel enjoyed spectacular growth, followed by an equally spectacular collapse. It was formed in 1995 by Jodee Rich and Brad Keeling, and after obtaining significant funding from the Packer and Murdoch families they turned a \$5 million company into one of Australia's 30 largest companies in just four years, with a market capitalisation of \$5.3 billion. The company went from having 1000 subscribers in 1995 to over 2 million subscribers, with operations in eight countries.

OneTel enjoyed spectacular growth in its first four years, but a closer look at its financial statements should have alerted its directors to some alarming signs. OneTel's business model was based on delivering telecommunications services at a lower price than the company was paying its suppliers, relying on signing up new customers (and receiving additional capital injections) more quickly than it was spending money. But this was clearly unsustainable; the company began to incur losses and, more damagingly, to run out of cash. The company incurred a loss of over \$200 million in the financial year of 2000. Its share price, which had risen from a list price of \$2 in 1997 to a high of \$13.55 in February 1999, plummeted to less than \$1 and was at 16 cents when the company was delisted in May 2001. The firm's financial statements contained information about the firm's past performance, which is helpful in predicting future cash flows and, in this case, also its ultimate demise (remember **P3 Cash flows are the source of value**). Information in the financial statements can also be useful in estimating the value of the firm's ordinary shares (remember **P4 Market prices reflect information**).

This is the first of two chapters that focus on accounting and, specifically, financial statements. Because this is not an accounting book, you might be asking yourself (or your lecturer) 'Why we are spending so much time delving into financial statements?' The answer is simply that *accounting is the language of business*. When firms communicate with their shareholders and creditors, the principal form of communication is through the firm's financial statements. Moreover, when managers communicate with their fellow employees about the firm's performance, they often do so using benchmarks that are based on accounting profits (or *earnings*).

In this chapter, we review the basic financial statements used by firms to report their financial performance. These financial statements can be viewed as a model or representation of the firm at a particular point in time. We first investigate why both a student of finance and a manager need to understand financial statements as well as the basic accounting principles that underlie their construction.



Source: Australian Associated Press Pty Ltd

OBJECTIVE 1

Describe the content of the four basic financial statements and discuss the importance of financial statement analysis to the financial manager.

3.1 An overview of the firm's financial statements

In Chapter 2 we looked at the world of business through the eyes of an investor using security prices from financial markets. In this chapter we look at the firm from the perspective of the financial analyst by reviewing the firm's financial statements, including the income statement, balance sheet and cash flow statement. Understanding the financial health of a business by reviewing its financial statements is also important to the financial manager whose goal is to determine how to increase the value of the firm.

Accounting is the language of business

A firm's financial statements provide a visual representation of the firm that is used to describe the business to investors and others outside the firm, as well as to the firm's employees. Consequently, we can think of a firm's financial statements and the various terms used to describe the firm and its operations as the language of business. As such, everyone who becomes a manager, no matter what their area of expertise, needs to know how to 'speak business', and this means knowing how to read and interpret financial statements. For example, when the firm communicates with its bank or the investment analysts who follow the firm's ordinary shares, financial statement results provide the common language. When members of the firm's top management are determining the bonuses to pay at year-end, they look to the firm's financial performance as reflected in the financial statements. Moreover, progressing up the ranks of the firm's management team requires that you develop a broader understanding of the firm and how its various components fit together. The firm's financial statements provide the key to gaining this knowledge.

FINANCE SPOTLIGHT



YOUR MONEY

Basic financial statements

The accounting and financial regulatory authorities mandate the following four types of financial statement:

- 1 **Income statement** (also referred to as a *statement of comprehensive income* or a *profit and loss statement*)—includes the revenue the firm has earned *over a specific period of time*, usually one-quarter of a year or a full year; the expenses it has incurred during the year to earn its revenues; and the profit the firm has earned.
- 2 **Balance sheet** (also referred to as a *statement of financial position*)—contains information as at the date of its preparation about the firm's assets (everything of value the company owns), liabilities (the firm's debts) and shareholders' equity (the money invested by the company owners). As such, the balance sheet is a snapshot of the firm's assets, liabilities and owners' equity for a particular date.
- 3 **Cash flow statement** (also referred to as a *statement of cash flows*)—reports cash received and cash spent by the firm *over a specified period of time*, usually one-quarter of a year or a full year.
- 4 **Statement of changes in equity**—provides a detailed account of the firm's activities in the ordinary and preference share accounts, the retained earnings account and changes to owners' equity that do not appear in the income statement.

In this chapter, we review the basic content and format of the income statement, balance sheet and cash flow statement. We do not discuss the statement of changes in equity, as the information we need from this statement can be obtained from the income statement and balance sheet.

Why study financial statements?

Analysing a firm's financial statements can help managers carry out three important tasks: (1) assess current performance, (2) monitor and control operations and (3) plan and forecast future performance.

- 1 **Financial statement analysis.** The basic objective of financial statement analysis is to assess the financial condition of the firm being analysed. In a sense, the analyst performs a financial analysis so that he or she can see the firm's financial performance in the same way an outside investor would see it. In Chapter 4, we delve into the tools and techniques used in carrying out financial statement analysis.
- 2 **Financial control.** Managers use financial statements to monitor and control the firm's operations. The performance of the firm is reported using accounting measures that compare the prices of the firm's products and services with the estimated cost of providing them to buyers. Moreover, the board of directors uses these performance measures to determine

executives' bonuses. The company's creditors also use performance measures based on the firm's financial statements to determine whether or not to extend the company's loans. For example, a common restriction included in loan agreements prohibits firms from borrowing more than a specific percentage of their total assets as reflected in the firms' financial statements.

- 3 Financial forecasting and planning.** Financial statements provide a universally understood format for describing a firm's operations. Consequently, financial planning models are typically built using the financial statements as a prototype. We address financial planning in Chapter 18.

This chapter focuses on **P3 Cash flows are the source of value**. A key issue that we will discuss is the distinction between the earnings numbers that the firm's accountants calculate and the amount of cash that a firm generates from its various lines of business. This difference is a primary source of differentiation between the study of finance and the study of accounting. For example, firms can earn positive accounting earnings while haemorrhaging cash, and can generate positive cash flow while reporting accounting losses. So, a key objective in this chapter for the financial manager involves developing a good understanding of accounting earnings and how they relate to cash flows.

What are the accounting principles used to prepare financial statements?

Accountants use three fundamental principles when preparing a firm's financial statements: (1) the revenue recognition principle, (2) the matching principle and (3) the historical cost principle. Understanding these principles is critical to a full and complete understanding of what information is reported in a firm's financial statements and how that information is reported. Much of the accounting fraud that has occurred in Australia can be traced back to violations of one or more of these basic principles of accounting.

- 1 The revenue recognition principle.** This principle provides the basis for deciding what **revenue**—the cumulative dollar amount of goods and services the firm sold to its customers during the period—should be reported in a particular income statement. The principle states that revenue should be included in the firm's income statement for the period in which (1) its goods and services were exchanged for either cash or **accounts receivable** (credit sales that have not yet been collected), or (2) the firm has completed what it must do to be entitled to the cash. As a general rule, a sale can be counted only when the goods sold leave the business's premises en route to the customer. The revenue recognition principle guides accountants when it is difficult to determine whether revenues should be reported in one period or another.
- 2 The matching principle.** This principle determines what costs or expenses can be attributed to this period's revenue. Once the firm's revenue for the period has been determined, its accountants then determine the expenses for the period by letting the expenses 'follow' the revenues, so to speak. For example, employees' wages are not recognised when the wages are paid, or when the work is performed, but when the product produced as a result of that work is sold. Therefore, expenses are matched with the revenue they helped to produce.
- 3 The historical cost principle.** This principle provides the basis for determining the dollar values that the firm reports on the balance sheet. Most assets and liabilities are reported in the firm's financial statements on the basis of the price the firm paid to acquire them. This price is called the asset's historical cost. This may or may not equal the price the asset might bring if it were sold today. (Usually it does not.)^a

^aThere are exceptions to the historical cost principle for recording asset values on the firm's balance sheet. A prime example involves the firm's cash and marketable securities portfolio. These assets are recorded on the balance sheet using the lesser of cost or their current market value. Changing the value of the firm's cash and marketable securities to reflect current market prices is commonly referred to as 'marking to market'. However, the historical cost principle is the guiding rule for determining the value to be recorded on the balance sheet in most cases.

The revenue recognition principle and the matching principle necessitate the create of *non-cash-flow* accounting entries—entries in the firm’s ledgers and financial statements that do not reflect the flow of cash. If revenue is recognised in a given period even though the items sold or the services provided were not paid for during that period, non-cash-flow entries are needed to recognise the revenue in the correct period. Similarly, if expenses are matched to revenue in a given period even though the expenses were not paid during that period, non-cash-flow entries are required. A significant example of such a non-cash-flow entry is depreciation, which is discussed in the next section. The use of these non-cash-flow accounting entries is referred to as the *accrual method of accounting*, and is the reason why cash flow and profit are not the same thing.

Remembering the three principles listed above will help you understand what you see in the firm’s financial statements and why it is reported that way. Furthermore, having a basic understanding of accounting principles will make you a much more informed user of accounting information and a much better financial analyst.

Before you move on to 3.2

Concept check 3.1

- 1 Name the four basic financial statements that make up the published financial reports of a firm, and describe the basic function of each.
- 2 What are the three uses of a firm’s financial statements for the firm’s management?
- 3 Describe the revenue recognition, matching and historical cost principles as they are applied in the construction of a firm’s financial statements.

3.2 The income statement

OBJECTIVE 2

Evaluate firm profitability using the income statement.

An **income statement**, also called a *statement of comprehensive income* or a *profit and loss statement*, measures the amount of profit generated by a firm over a given time period (usually a year or a quarter). In its most basic form, the income statement can be expressed as follows:

$$\text{Revenue (or Sales)} - \text{Expenses} = \text{Profit} \quad (3-1)$$

Revenue represents the sales for the period. **Profit** is the difference between the firm’s revenue and the expenses the firm incurred in order to generate that revenue for the period. Recall that revenue is determined in accordance with the revenue recognition principle and expenses are then matched to that revenue using the matching principle.

Income statement of H. J. Boswell Ltd

The typical format for the income statement is shown in Table 3.1 (overleaf) for H. J. Boswell Ltd, a fictitious firm that we will use as an example throughout this chapter and Chapter 4. Boswell is a manufacturer of orthopaedic devices and supplies. Its products include hip replacement supplies; knee, shoulder and spinal implants; products used to fix bone fractures; and operating room products.

Reading and interpreting Boswell’s income statement

Recall from equation 3–1 that the income statement contains three basic elements: revenue, expenses and profit. We will use these elements to analyse each of the components of the income statement found in Table 3.1:

- 1 **Revenue:** Boswell’s revenue totalled \$2700 million for the 12-month period ended 31 December 2018.
- 2 **Cost of goods sold:** Next, we see that the various expenses the firm incurred in producing revenue are broken down into various sub-categories. For example, the firm spent \$2025 million on **cost of goods sold**, the cost of producing or acquiring the products or services that the firm sold during the period.

Table 3.1 Income statement for H. J. Boswell Ltd

H. J. Boswell Ltd
Income Statement (expressed in \$ millions, except per-share data)
for the year ended 31 December 2018

Sales		\$ 2700.00	
Cost of goods sold		(2025.00)	
Gross profit		<u>675.00</u>	Income from operating activities
Operating expenses:			
Selling expenses	\$ (90.00)		
General and administrative expenses	(67.50)		
Depreciation and amortisation expenses	<u>(135.00)</u>		
Total operating expenses		<u>(292.50)</u>	Cost of debt financing
Operating profit (EBIT, or earnings before interest and tax)		<u>382.50</u>	Cost of corporate income tax
Interest expense		(67.50)	
Profit before tax		<u>315.00</u>	
Tax		<u>(110.25)</u>	
Net profit		<u>\$ 204.75</u>	Income resulting from operating and financing activities
Additional information:			
Dividends paid to shareholders during 2018		\$ 45.00	
Number of ordinary shares outstanding (millions)		90.00	
Earnings per share (EPS)		\$ 2.28	
Dividends per share		\$ 0.50	

- 3 **Gross profit:** Subtracting cost of goods sold from revenue produces an estimate of the firm's gross profit of \$675 million.
- 4 **Operating expenses:** Next, we examine Boswell's operating expenses (these include the salaries paid to the firm's administrative staff, the firm's electricity bills and so forth). One of the operating expense categories is depreciation expense (\$135 million for Boswell in 2018). **Depreciation expense** is a non-cash expense used to allocate the cost of the firm's long-lived assets (such as its plant and equipment) over the useful lives of the assets. For example, suppose that during 2018 Boswell were to build a new distribution facility in Geelong at a cost of \$10 million. The firm would not expense the full \$10 million against 2018 revenue, but instead would spread out the costs over many years to match the revenue that the facility would help create.^b
- 5 **Operating profit:** After deducting \$292.50 million in operating expenses, Boswell's *operating profit* is \$382.50 million. The firm's **operating profit** shows the firm's ability to earn profits from its ongoing operations—before it makes interest payments and pays its tax. For our purposes, operating profit will be synonymous with **earnings before interest and tax (EBIT)**.^c

^bAlthough there are many types of depreciation method that can be used, we restrict our attention in this chapter to a simplified version of straight-line depreciation. Using this method, the total cost of the asset minus any salvage value is divided by the number of years of useful life to calculate annual depreciation. For example, if a piece of equipment is purchased for \$125 000 and has a useful life of five years, the annual straight-line depreciation is calculated as \$125 000/5 years = \$25 000. In Chapter 12, we discuss the diminishing value method of depreciation, which is the method required by the Australian Taxation Office (ATO) for calculating accelerated depreciation.

^cIn practice, a firm may have other income or expenses after operating profit that are not related to the normal course of business, adding or subtracting these items from operating profit to arrive at EBIT. This distinguishes operating profit (designed to represent the underlying profitability of the firm's operations on an ongoing basis) from the actual profit for the period (before interest and tax). For simplicity, we will ignore such items and assume that operating profit is equal to EBIT.

- 6 **Interest expense:** Up to this point we have calculated the profit resulting only from operating the business, without regard for any financing costs such as the interest paid on money the firm might have borrowed. In this instance, Boswell incurred interest expense equal to \$67.50 million during 2018.
- 7 **Net profit before tax:** Now we can subtract Boswell's interest expense of \$67.50 million from its operating profit of \$382.50 million to determine its net profit before tax (also known as taxable income). Boswell's net profit before tax is \$315 million.
- 8 **Tax:** Next, we determine the firm's income tax obligation. We will show how to calculate the tax obligation later in this chapter. For now, note that Boswell's income tax obligation is \$110.25 million.
- 9 **Net profit:** The income statement's bottom line is **net profit**, which is calculated by subtracting the firm's tax liability of \$110.25 million from its net profit before tax of \$315 million. This leaves net profit of \$204.75 million.

Evaluating Boswell's per share earnings and dividends

At this point, we have completed the income statement. However, the firm's owners (ordinary shareholders) will want to know how much profit the firm made on a per-share basis, or what is called **earnings per share**. We can calculate earnings per share by dividing the company's net profit by the number of ordinary shares it has outstanding. Because H. J. Boswell Ltd had 90 million shares outstanding in 2018 (see Table 3.1), its earnings per share were \$2.28 (\$2.28 per share = \$204.75 million net profit ÷ 90 million shares).

Investors also want to know the amount of dividends a firm pays for each share outstanding, or the **dividends per share**. In Table 3.1 we see that H. J. Boswell Ltd paid \$45 million in dividends during 2018. You can then determine that the firm paid \$0.50 in dividends per share (\$0.50 = \$45 million total dividends ÷ 90 million shares outstanding).

Connecting the income statement and the balance sheet

If H. J. Boswell earned a net profit of \$204.75 million (or \$2.28 per share) and paid out only \$45 million in dividends (\$0.50 in dividends per share), what happened to the \$204.75 million – \$45 million = \$159.75 million in earnings that were not paid out in dividends? The answer is that this amount was retained and reinvested in the firm. As we will later discuss, in the balance sheet Boswell's retained earnings rise by exactly this amount. Thus, the income statement feeds directly into the balance sheet to record any profit or loss from the firm's operations for the period.

Interpreting firm profitability using the income statement

The first conclusion we can draw from our quick survey of H. J. Boswell Ltd's income statement is that the firm was profitable because its revenue for 2018 exceeded the sum of all its expenses. Furthermore, as we move down the income statement, beginning with the firm's revenue or sales, we can identify three different measures of profit or income. For example, the company's gross profit was \$675 million, while its operating profit—or earnings before interest and tax—was just \$382.5 million, and its net profit was just \$204.75 million. It is common practice to divide gross profit, operating profit and net profit by the level of the firm's sales to calculate the firm's *gross profit margin*, *operating profit margin* and *net profit margin*, respectively. For H. J. Boswell Ltd, we calculate each of these profit margins as follows:

- 1 The *gross profit margin* is 25% (\$675 million of gross profit ÷ \$2700 million of sales = 25%). Because the gross profit equals revenue minus the firm's cost of goods sold, the **gross profit margin** indicates the firm's 'markup' on its cost of goods sold per dollar of sales. Note that the percentage markup is generally expressed as a percentage of the firm's cost of goods sold. That is, the markup percentage equals gross profit divided by cost of goods sold, or \$675 million ÷ \$2025 million = 33.3%. Because gross profit is 25% of sales and cost of goods is 75% of sales, we can also calculate the markup percentage using these percentages; that is, 25% ÷ 75% = 33.3%.

- 2 The *operating profit margin* is only 14.2% (\$382.5 million of operating profit ÷ \$2700 million of sales = 14.2%). The **operating profit margin** is equal to the ratio of operating profit or EBIT divided by firm sales.
- 3 The *net profit margin* is only 7.6% of firm revenue (7.6% = \$204.75 million of net profit ÷ \$2700 million of sales). The **net profit margin** captures the effects of all of the firm's expenses and indicates the percentage of revenue left over after interest and tax have been considered.

Notice that as we move down the income statement, calculating different profit margins after incorporating considerations for more categories of expenses, the successive profit margins naturally get smaller and smaller. By comparing these margins against those of similar businesses, we can dissect a firm's performance and identify expenses that are out of line. Because the firm's profit margins are an important indicator of how well the firm is doing financially, managers pay close attention to them, carefully watching for any changes either up or down. They also compare the firm's margins with those of its competitors—something we will discuss in Chapter 4.

IFRS and earnings management

In Australia, firms must adhere to a set of accounting principles commonly referred to as International Financial Reporting Standards, or IFRS.^d Even so, there is considerable room for a company's managers to actively influence the firm's reported earnings. Corporate executives have an incentive to manage the firm's earnings, both because their pay depends on earnings and because investors pay close attention to the firm's quarterly earnings announcements. Executives sometimes 'smooth out' reported earnings by making choices that, for example, transfer earnings from years when they are abnormally high to future years when earnings would otherwise be low. The specifics of how this is done can be very complex and are beyond the scope of this book.^e However, in extreme cases, earnings management can lead to fraudulent efforts to create earnings where none exist.

Companies hire accountants to maintain the firm's financial records and prepare the firm's quarterly and annual financial statements. **P5 Individuals respond to incentives** serves to remind us that managers may at times find themselves in situations where they would like to be less than forthcoming in describing the firm's financial condition to investors and may be tempted to stretch the rules of financial reporting to disguise the firm's current circumstances. Although the incentive to misreport the firm's financial condition is ever present (remember HIH and OneTel), investors (shareholders) in publicly held companies, whose bonds and/or shares can be bought and sold in the public markets, do not have to depend on the honesty of the firm's accountants for assurance that the firm has followed IFRS. The reason is that public firms are required to have their financial statements audited by an independent accounting firm. The audit of the financial statements provides a verification of the financial statements of the firm and an audit opinion. The audit opinion is intended to provide *reasonable assurance that the financial statements are presented fairly, in all material respects, and/or give a true and fair view in accordance with the financial reporting framework*. As such, the audit serves to enhance the degree of confidence that investors and others have when they use the financial statements. In essence, the audit by an independent accounting firm serves as a check and balance to control management's incentive to disguise the firm's true financial condition.

^dIFRS are a set of accounting standards set out by the International Accounting Standards Board (IASB). The IASB and IFRS arose from an attempt to harmonise accounting standards in different countries, which began in 1973. IFRS have now been adopted by all developed countries except the United States and Japan, which use their own Generally Accepted Accounting Principles (GAAP). (Japan permits the use of IFRS instead of GAAP.) The Australian equivalent of IFRS, set out by the Australian Accounting Standards Board (AASB), are sometimes referred to as A-IFRS.

^eIf you want to learn more about this and other tools of earnings management (i.e. manipulation), see Howard M. Schilit, *Financial Shenanigans: How to detect accounting gimmicks & fraud in financial reports*, 3rd edition (McGraw-Hill, 2010).

Checkpoint 3.1**Constructing an income statement**

Use the following information to construct an income statement for Automotive Holdings Ltd [AHG], Australia's largest automotive retailer.¹ Use the scrambled information below to calculate the firm's gross profit, operating profit and net profit for the year ended 30 June 2017. Calculate the firm's earnings per share and dividends per share.

Interest expense	\$41 447 000	Revenue	\$6 081 745 000
Cost of goods sold	\$4 610 510 000	Ordinary share dividends	\$63 008 000
Operating expenses	\$1 339 794 000	Tax	\$28 901 000
Shares outstanding	327 523 680		

STEP 1: Picture the problem

The income statement can be visualised as a mathematical equation using equation 3–1 as follows:

$$\text{Revenue (or Sales)} - \text{Expenses} = \text{Profit} \quad (3-1)$$

However, this equation belies the level of detail normally included in the income statement. That is, expenses are typically broken down into multiple categories, including cost of goods sold, operating expenses (including such things as selling expenses, administrative expenses and depreciation expenses), finance charges or expenses (interest) and income tax. After subtracting each of these general categories of expenses, a new profit number is calculated. The following template provides a useful guide for reviewing the format of the income statement:

	Revenue
Less:	Cost of goods sold
Equals:	Gross profit
Less:	Operating expenses
Equals:	Operating profit
Less:	Interest expense
Equals:	Profit before tax
Less:	Tax
Equals:	Net profit

STEP 2: Decide on a solution strategy

Given the account balances provided, constructing the income statement simply entails substituting the appropriate balances into the template above.

STEP 3: Solve

	Revenue	= \$6 081 745 000
Less:	Cost of goods sold	= \$4 610 510 000
Equals:	Gross profit	= \$1 471 235 000
Less:	Operating expenses	= \$1 339 794 000
Equals:	Operating profit	= \$ 131 441 000
Less:	Interest expense	= \$ 41 447 000
Equals:	Profit before tax	= \$ 89 994 000
Less:	Tax	= \$ 28 901 000
Equals:	Net profit	= \$ 61 093 000

Earnings per share (\$61 093 000 net profit ÷ 327 523 680 shares) = **\$0.187 or 18.7 cents**

Dividends per share (\$63 008 000 dividends ÷ 327 523 680 shares) = **\$0.192 or 19.2 cents**

(3.1 CONTINUES >>)

STEP 4: Analyse

There are some important observations we can make about Automotive Holdings' income statement. First, the firm is profitable because it earned a net profit of \$61 093 000 over the 2016/17 financial year. Second, the firm distributed more to its shareholders in dividends than it earned in net profit. (We will discuss why this is sometimes the case in Chapter 17—Dividend policy.)

STEP 5: Check yourself

Reconstruct Automotive Holdings' income statement assuming that the firm is able to reduce its cost of goods sold by 5% and that the firm pays tax at a rate of 30%. What is the firm's net profit and earnings per share?

ANSWER: \$224 364 000 and \$0.685

Your turn: For more practice, do related **Study Problem 3–1** at the end of this chapter.

Before you move on to 3.3

Concept check 3.2

- 4 What information can we derive from a firm's income statement?
- 5 List the entries in the income statement.
- 6 What does the acronym IFRS stand for?

OBJECTIVE 3

Estimate a firm's liability for corporate income tax and an individual's liability for income tax and capital gains tax, and distinguish between a classical taxation system and a dividend imputation taxation system.

3.3 Corporate tax, personal tax and dividend imputation

In our discussion of the income statement, we simply listed the firm's income tax obligation without further explanation. It is important for the financial manager to understand how tax is calculated, because tax is a critical factor in determining cash flow (P3 **Cash flows are the source of value**) and consequently in making many financial decisions. We will also provide an overview of personal income tax and capital gains tax. The tax rules can be extremely complex, requiring specialised expertise to understand them, so for our purposes we will provide a simplified overview of how corporate income tax and personal income and capital taxes are calculated.

Calculating taxable income and company tax payable

A corporation's **taxable income** is often referred to in its income statement as *net profit before tax*. Net profit before tax is equal to the firm's operating profit less interest expenses. Note that taxable income was item 7 in our earlier description of the firm's income statement. The firm's income tax liability is calculated using its taxable income and the tax rates on corporate income, which we will now discuss.

From the point of view of a company, there is no difference between tax on capital gains and tax on any other kind of income or profit. If a company sells an asset for more than its *book value* (the purchase price minus accumulated depreciation), the resulting profit is taxed like any other profit. This is discussed in more detail in Chapter 12 (Analysing project cash flows), where we calculate the tax on the profit from the sale of an asset (because tax is of course a cash flow). When it comes to personal tax, however, income and capital gains are to some extent treated separately, as is explained below.

From 2001 to 2015, the company tax rate in Australia was 30%; it continues to be 30% for large companies but there is a concessional rate for small companies.^f

^fIn 2015 the rate for small companies (turnover less than \$2 million) was reduced to 28.5%, and the size of a 'small company' was increased to \$10 million in 2016, \$25 million in 2017 and \$50 million in 2018. The tax rate for these small companies was further reduced to 27.5% in 2017, and between 2024 and 2026 it will be progressively reduced to 25%. In 2018 the federal government announced an intention to extend the reduced tax rates to all companies over time, but it is uncertain whether this will be passed by Parliament.

Most companies also incur state payroll tax, levied on the wages outlay of employers, which varies from state to state, but this is not relevant to this discussion because it should be included in operating expenses.

Personal income tax and capital gains tax

There are frequent references in this chapter to ‘marginal tax rates’. Most countries, including Australia, have a progressive taxation system; this means that not only do those on higher incomes pay more tax, as you would expect, but they also pay a higher tax rate than those on lower incomes. This is achieved by setting up ‘income tax brackets’, which attract higher and higher tax rates the more the taxpayer earns. The personal tax rates for the 2018/19 tax year were as shown in Table 3.2.

Table 3.2 Personal tax rates for the 2018/19 tax year

Taxable income	Tax on this income
\$1–\$18 200	Nil
\$18 201–\$37 000	19c for each \$1 over \$18 200
\$37 001–\$90 000	\$3572 plus 32.5c for each \$1 over \$37 000
\$90 001–\$180 000	\$19 822 plus 37c for each \$1 over \$90 000
\$180 001 and over	\$54 232 plus 45c for each \$1 over \$180 000

Suppose that you earned \$50 000 during 2018/19. You would pay zero tax on the first \$18 200, 19% on the \$18 800 between \$18 200 and \$37 000, and 32.5% on the final \$13 000. This means that your *marginal* tax rate is 32.5%—you pay tax at the rate of 32.5% for each *additional* dollar you earn. Your *effective* tax rate is less than this (it would only be 16.6% because a large part of your income is tax-free and another sizable amount attracts only a 19% tax rate), but marginal tax rates are important for decision-making purposes. Your decision to work overtime, for example, should take into account your marginal rate of 32.5%—the fact that you will pay 32.5% tax on each extra dollar you earn, rather than your effective tax rate of 16.6%. As discussed in the next section, on dividend imputation, shareholders pay tax on dividends at their marginal tax rate because dividends represent ‘extra dollars’ over and above their other income.

The most common alternative to a progressive tax system is a ‘flat tax’, where all taxpayers pay the same rate of tax on their income. There are arguments for a flat tax because of its simplicity and because it may reduce tax avoidance, but most countries have some form of progressive tax system because this is seen to be fairer for low-income earners.

In addition to personal income tax, Australia, like many countries, has a *capital gains tax* (CGT), whereby the capital gain from the sale of an asset is taxed as income. In the context of this chapter and Chapter 17 (Dividend policy), the asset of interest is company shares. The principal exceptions to CGT are personal-use assets such as the family home, cars and furniture, transfers to beneficiaries on death, and assets purchased before 19 September 1985, which is the date on which Australia’s CGT was introduced. Initially there were complicated provisions to discount the capital gain for the effect of inflation, but this has been simplified: as long as the asset has been held for at least 12 months, the capital gain is discounted before tax is applied. The discount rate is 50% for individuals and 33.3% for superannuation funds.

Capital gains are included in an individual’s income, and therefore individuals pay CGT at their marginal tax rate. However, there is a sense in which income and capital gains are treated separately: if the taxpayer has experienced a *capital loss*, that loss cannot be offset against income in calculating overall tax liability. It can only be offset against capital gains—but the loss can be *carried forward* and offset against capital gains in the future to reduce tax liability. Capital losses must be offset against capital gains before the discount referred to earlier is applied.

Besides tax on income and capital gains, many countries, including Australia, have some form of consumption tax, which may take the form of a wholesale sales tax (which Australia had prior to 2000), a value added tax (VAT), or a goods and services tax (GST), which the Australian government introduced in 2000 to replace the previous wholesale sales tax. Most goods and services—the principal exception being a limited range of food items—attract a 10% GST, which is included in

the advertised price rather than being added at the point of sale, as it is in some countries. Consumption taxes are flat rather than progressive taxes, because all taxpayers pay the same rate of tax. There are many arguments for and against consumption taxes versus income taxes, in terms of their benefits to the economy, but these are beyond the scope of this text.

There are of course many other taxes paid by individuals, including a range of stamp duties, fees and levies imposed by state governments, but since these vary from state to state it is not feasible to discuss them in more detail here.

Checkpoint 3.2

Calculation of personal income tax and capital gains tax

Jess Cran is employed as a financial manager in a small furniture company and has a small portfolio of shares. The following items occurred during the 2018/19 tax year:

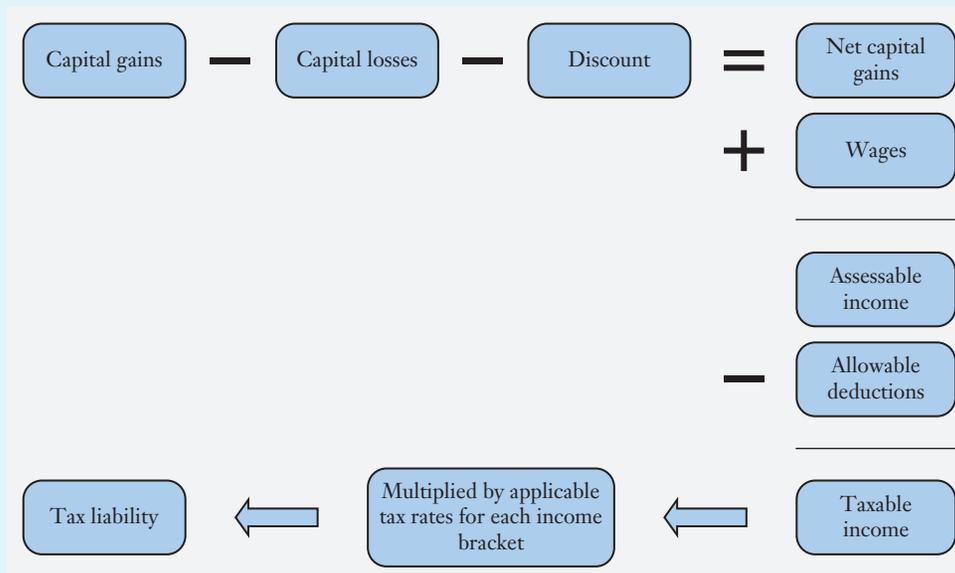
- Jess's income as financial manager totalled \$97 500.
- She incurred expenses totalling \$2300 which are *allowable deductions* based on Australian Taxation Office rules.
- She sold the shares listed in the following table:

Company	No. of shares	Purchase date	Purchase price	Sale date	Sale price
Origin Energy Ltd [ORG]	250	30/11/16	\$5.94	20/7/17	\$7.21
Nanosonics Ltd [NAN]	500	29/8/16	\$6.82	12/9/17	\$2.72
The a2 Milk Company Ltd [A2M]	1000	3/10/16	\$1.75	28/11/17	\$7.63

Using the personal tax rates in Table 3.2, calculate Jess's taxable income, tax liability and after-tax income for 2018/19.

STEP 1: Picture the problem

The following diagram illustrates the process that Jess needs to follow to calculate her tax liability.



STEP 2: Decide on a solution strategy

Calculate the capital gain or loss on each parcel of shares, deduct losses from gains, apply any applicable discount, add wages to determine **assessable income**, deduct allowable deductions to determine taxable income, and then apply the various tax rates applicable to each income bracket to determine tax liability.

STEP 3: Solve

We can calculate the gain or loss from each parcel of shares as follows:

Company	No. of shares	Purchase price	Total cost	Sale price	Total proceeds	Gain (loss)
Origin Energy Ltd	250	\$5.94	\$1485	\$7.21	\$1802.50	\$ 317.50
Nanosonics Ltd	500	\$6.82	\$3410	\$2.72	\$1360.00	(\$2050.00)
The a2 Milk Company Ltd	1000	\$1.75	\$1750	\$7.63	\$7630.00	\$5880.00

Jess's taxable income can be calculated as follows:

$$\text{Capital gains} - \text{Capital losses} = \$317.50 + \$5880 - \$2050 = \$4147.50$$

$$\text{Net capital gains (after discount)} = \$4147.50 \times 50\% = \$2073.75$$

$$\text{Assessable income (ignore cents)} = \$2073.75 + \$97500 = \$99573$$

$$\text{Taxable income} = \$99573 - \$2300 = \$97273$$

We then apply the various tax rates to each income bracket, as shown in the following table:

Income bracket	Taxable amount (\$)	Tax rate (%)	Tax payable (\$)	After-tax income (\$)
\$1–\$18 200	18 200	0	Nil	
\$18 201–\$37 000	18 800	19	3 572	
\$37 001–\$90 000	53 000	32.5	17 225	
\$90 001–\$97 273	7 273	37	2 691	
Total	97 273		23 488	73 785

STEP 4: Analyse

It is important to note that Jess has held some shares (Origin Energy) for less than 12 months, so no discount is applicable; the other shares were held for more than 12 months. If the Origin shares were the only shares sold during the year, the full capital gain would be included in Jess's assessable income. However, any capital losses are deducted from capital gains before the discount is applied, and the loss from the Nanosonics shares is greater than the capital gain on the Origin shares. The end result is that because the a2 Milk shares were held for more than 12 months and achieved a capital gain of \$5880, the net capital gain of \$4147.50 can be fully discounted by 50%.

Jess's wages, combined with her discounted capital gain, less allowable deductions, resulted in a taxable income of \$97273, a tax liability of \$23488 and an after-tax income of \$73785.

STEP 5: Check yourself

Recalculate Jess's after-tax income assuming that she did *not* sell the Nanosonics shares during the year.

ANSWER: Taxable income = \$98457; tax liability = \$23926; after-tax income = \$74531.

Your turn: For more practice, do related **Study Problems** 3–6 and 3–7 at the end of this chapter.

Dividend imputation

In Australia, prior to 1987, dividends received by shareholders in a company were taxed at the shareholder's full marginal tax rate. This meant that company profits were effectively taxed twice—once at the company tax rate, and then again when paid out as dividends to shareholders. This '**double taxation**' of company profits was deemed unfair and against Australia's economic interests, and hence the **dividend imputation taxation system** was introduced.

At present, only Australia and New Zealand have full dividend imputation systems for resident shareholders. Some European countries introduced them but then weakened or abolished them. Some countries, such as the United States, use other means to partially ameliorate the effect of double taxation, such as exempting some dividend income from tax or taxing dividends at a concessional rate, while other countries still have full double taxation of company profits distributed as dividends (sometimes referred to as a **classical taxation system**).

Under a dividend imputation system, dividends (if they are paid out of company profits that have been taxed) carry **imputation (or franking) credits** and the dividends are referred to as **franked dividends**. The recipient of a dividend is taxed on the **grossed-up** value of the dividend, which is calculated by adding the franking credits to the cash dividend received, and then applying the franking credits to reduce the amount of tax actually payable. This has the effect of giving the shareholder credit for the company tax paid by the firm, and the shareholder finishes up paying tax based on the difference between his or her marginal tax rate and the company tax rate. If the shareholder's marginal tax rate is *less* than the company tax rate then the shareholder receives the difference as a tax credit, which can be offset against other tax payable or refunded in cash by the Australian Taxation Office!

Table 3.3 illustrates the difference between the tax liability of the same shareholder (with a marginal tax rate of 45%) under a classical system of taxation and under a dividend imputation system. In both scenarios the firm makes a profit of \$100, is taxed at the company tax rate of 30% and then distributes the remaining \$70 as a dividend. Under the classical system, the original \$100 has been subject to an effective tax rate of 61.5% (a combination of the company tax rate and the shareholder's marginal tax rate); while under the dividend imputation system, the total tax payable on the \$100 profit reflects the shareholder's marginal tax rate of 45%.

Table 3.3 Comparison between classical and dividend imputation tax systems

	Classical	Dividend imputation
Corporate level		
Net profit before tax	\$100.00	\$100.00
Less company tax (30%)	<u>(30.00)</u>	<u>(30.00)</u>
Net profit after tax	<u>\$ 70.00</u>	<u>\$ 70.00</u>
Shareholder level		
Dividend received	\$ 70.00	\$ 70.00
Franking credit	<u>—</u>	<u>30.00</u>
Taxable income (grossed-up dividend in the case of the dividend imputation tax system)	70.00	100.00
× Marginal tax rate	<u>45%</u>	<u>45%</u>
Tax payable, before franking credit	31.50	45.00
Less franking credit	<u>—</u>	<u>(30.00)</u>
Net tax payable	<u>\$ 31.50</u>	<u>\$ 15.00</u>

Table 3.4 illustrates the effect of dividend imputation on shareholders with different personal income tax rates. All three shareholders receive the same \$70 in after-tax net profit as was the case in Table 3.3. Based on their personal tax rates, Tom pays net tax of \$15 (as was the case under dividend imputation in Table 3.3); Dick has the same personal tax rate as the company tax rate and pays no additional tax; while Harry, by virtue of having a lower personal tax rate than the company tax rate, can offset the -\$15.00 against other tax payable or receive a refund from the tax office.

In all of the examples we have discussed so far, we have assumed that the dividends are **fully franked** or carry 100% franking credits. This means that they carry the maximum possible franking credits because the profits out of which they have been paid have been taxed at the full company tax rate. Sometimes, some or all of those profits have *not* been taxed at the full company tax rate (e.g. because some of the profits have been earned overseas and have not been subject to Australian company tax), and therefore the dividends may be **partially franked** or **unfranked**.

Table 3.4 Effect of dividend imputation based on different marginal tax rates

	Tom	Dick	Harry
Dividend received	\$ 70.00	\$ 70.00	\$ 70.00
Franking credit	<u>30.00</u>	<u>30.00</u>	<u>30.00</u>
Taxable income (grossed-up dividend)	100.00	100.00	100.00
× Marginal tax rate	<u>45%</u>	<u>30%</u>	<u>15%</u>
Tax payable, before franking credit	45.00	30.00	15.00
Less franking credit	<u>(30.00)</u>	<u>(30.00)</u>	<u>(30.00)</u>
Net tax payable	<u>\$ 15.00</u>	<u>\$ 0</u>	<u>\$(15.00)</u>

If a dividend is fully franked (and the company tax rate has been constant since the profits out of which they are paid were made), we can calculate the value of the franking credit and the value of the grossed-up dividend without necessarily knowing the value of the franking credit, using the following equation:

$$\text{Grossed-up dividend} = \frac{\text{Cash dividend received}}{1 - \text{Company tax rate}} \quad (3-2)$$

The value of the franking credit is then the difference between the grossed-up dividend and the cash dividend received.

We will return to dividend imputation in Chapter 17 when we look at the effect of personal tax on dividend policy.

Checkpoint 3.3

Comparison between a classical tax system and a dividend imputation tax system

On 28 September 2017, Telstra Corporation Ltd [TLS] paid a dividend of \$0.155 per share.² If you held 1000 Telstra shares at that time, and your marginal tax rate was 37%, what would your net after-tax dividend have been under (a) a classical tax system and (b) (assuming that the dividend was fully franked based on a company tax rate of 30%) a dividend imputation tax system? What would be the effective tax rate that would have been applied to the original company profit, taking into account both corporate tax and personal tax, under each of the two different tax systems?

STEP 1: Picture the problem

We can solve this problem by completing a table similar to Table 3.3, where we can compare, side by side, the result for this dividend under the two types of tax system. This will give us the net tax payable, allowing us to calculate the after-tax dividend and the effective tax rate applied to the company's profits.

The difference between the information provided for Table 3.3 and this problem is that we have not been given the value of the grossed-up dividend or the value of the franking credit, so we will need to calculate the grossed-up dividend using equation 3-2:

$$\text{Grossed-up dividend} = \frac{\text{Cash dividend received}}{1 - \text{Company tax rate}} \quad (3-2)$$

The franking credit will be the difference between the grossed-up dividend and the cash dividend received.

Once we calculate the additional personal tax payable under each system, we can calculate the effective tax rate using the following equation:

$$\text{Effective tax rate} = \frac{\text{Company tax} + \text{Personal tax}}{\text{Pre-tax company profit}}$$

(3.3 CONTINUES >>)

STEP 2: Decide on a solution strategy

Calculate the value of the grossed-up dividend and the franking credits, prepare a table similar to the bottom section of Table 3.3 (shareholder level), complete the table and perform the necessary calculations to determine the effective tax rate on the company profits.

STEP 3: Solve

$$\begin{aligned} \text{Total dividend} &= \text{No. of shares} \times \text{Dividend per share} \\ &= 1000 \times \$0.155 = \$155.00 \\ \text{Grossed-up dividend} &= \frac{\text{Cash dividend received}}{1 - \text{Company tax rate}} \\ &= \frac{\$155.00}{1 - 0.3} = \$221.43 \\ \text{Franking credit} &= \text{Grossed-up dividend} - \text{Cash dividend received} \\ &= \$221.43 - \$155.00 = \$66.43 \end{aligned}$$

This means that the company has paid \$66.43 in tax, under either system, before paying the dividend of \$155.00.

	Classical system	Dividend imputation system
Shareholder level		
Dividend received	\$155.00	\$ 155.00
Franking credit	—	66.43
Taxable income (grossed-up dividend in the case of the dividend imputation tax system)	155.00	221.43
× Marginal tax rate	37%	37%
Tax payable, before franking credit	57.35	81.93
Less franking credit	—	(66.43)
Net tax payable	\$ 57.35	\$ 15.50
Cash dividend received	\$155.00	\$ 155.00
Less: Net tax payable	57.35	15.50
After-tax dividend	\$ 97.65	\$ 139.50

$$\text{Effective tax rate}_{(\text{Classical})} = \frac{\$66.43 + \$57.35}{\$221.43} = 0.559 \text{ or } 55.9\%$$

$$\text{Effective tax rate}_{(\text{Dividend imputation})} = \frac{\$66.43 + \$15.50}{\$221.43} = 0.37 \text{ or } 37\%$$

STEP 4: Analyse

These results clearly show the difference between the two tax systems. Under a classical tax system, you would pay \$41.85 (\$57.35 – \$15.50 = \$41.85) more in tax compared with an imputation system, and the original company profit out of which the dividends were paid would be taxed at an effective 55.9% by the time you received your after-tax dividend. Under a dividend imputation system, that profit is effectively taxed at 37%—your marginal personal tax rate.

STEP 5: Check yourself

Recalculate the problem assuming that your marginal tax rate is 19%.

ANSWER: Classical system: after-tax dividend = \$125.55; effective tax rate = 43.3%.

Dividend imputation system: after-tax dividend = \$179.36 (cash dividend of \$155.00 plus tax credit of \$24.36); effective tax rate = 19%.

Your turn: For more practice, do related **Study Problems** 3–8 and 3–9 at the end of this chapter.

Before you move on to 3.4

Concept check 3.3

- 7 What is a *progressive taxation system*?
- 8 How are individual Australian taxpayers taxed on capital gains?
- 9 What is meant by *double taxation* of company profits?
- 10 What is the difference between a classical tax system and a dividend imputation tax system?
- 11 What are *franking credits*?

3.4 The balance sheet

OBJECTIVE 4

The income statement reports the cumulative results from operating the business over a period of time, such as one year. By contrast, the **balance sheet**, or *statement of financial position*, is a snapshot of the firm's financial position on a specific date. In its simplest form, the balance sheet is defined by the following equation:

$$\text{Total assets} = \text{Total liabilities} + \text{Total shareholders' equity} \quad (3-3)$$

Use the balance sheet to describe a firm's investments in assets and the way it has financed them.

Total liabilities represent the total amount of money that the firm owes its creditors (including the firm's banks and suppliers). **Total shareholders' equity** refers to the difference in the value of the firm's total assets and the firm's total liabilities recorded in the firm's balance sheet. As such, total shareholders' equity refers to the book value of the shareholders' investment in the firm, which includes both the money they invested in the firm to purchase its shares and the accumulation of past earnings from the firm's operations. The sum of total shareholders' equity and total liabilities is equal to the firm's **total assets**, which are the resources owned by the firm.

In general, IFRS requires the firm to report assets on its balance sheet using the historical cost of acquiring them. Cash and assets held for resale (such as marketable securities) are an exception to the historical cost principle. These assets are reported in the balance sheet using the lower of their cost or their current **market value**, which is the price that an asset would trade for in a competitive market. Assets whose value is expected to decline over time as they are used, such as plant and equipment, are adjusted downward periodically by depreciating the historical cost. Consequently, the amount recorded on the firm's balance sheet for **net property, plant and equipment** is equal to the historical cost incurred when the assets were purchased less the depreciation accumulated on them. Note that this book value is not intended to measure the market value of these assets. In fact, book and market values of plant and equipment can differ dramatically. It is important to note that depreciation expense, and consequently the recorded book value of the firm's net plant and equipment, does not account for **P1 Money has a time value**. We will have more to say about this later when we discuss capital-budgeting decisions in Chapters 11–14.

In summary, the balance sheet contains the book value of the firm's assets. Generally, the book value is not equal to the current market value of the firm's assets; consequently, book value does not reflect the value of the company if it were to be sold to another owner or liquidated by selling off the individual assets it owned. This distinction between accounting (or book) value and market value is important for understanding the different perspectives taken with respect to a firm's financial statements by accountants and finance professionals. The accounting approach is to count or 'account' for the firm's past actions, whereas the financial manager seeks to understand the implications of the financial statements for future cash flows and the value of the firm.

The balance sheet of H. J. Boswell Ltd

Consider the 2017 and 2018 balance sheets for H. J. Boswell Ltd found in Table 3.5 (overleaf). At the end of 2018, Boswell owned \$1971 million in total assets, had debts totalling \$1059.75 million and had total ordinary shareholders' equity of \$911.25 million.

Assets: the left-hand side of the balance sheet

The left-hand side of Boswell's balance sheet lists the firm's assets, which are categorised into current and non-current assets (also referred to as long-term assets or fixed assets). The