CORPORATE FINANCE

THIRD ASIA-PACIFIC EDITION

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CENGAGE

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3rd Asia-Pacific Edition
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BRIEF CONTENTS

ONLINE CHAPTERS

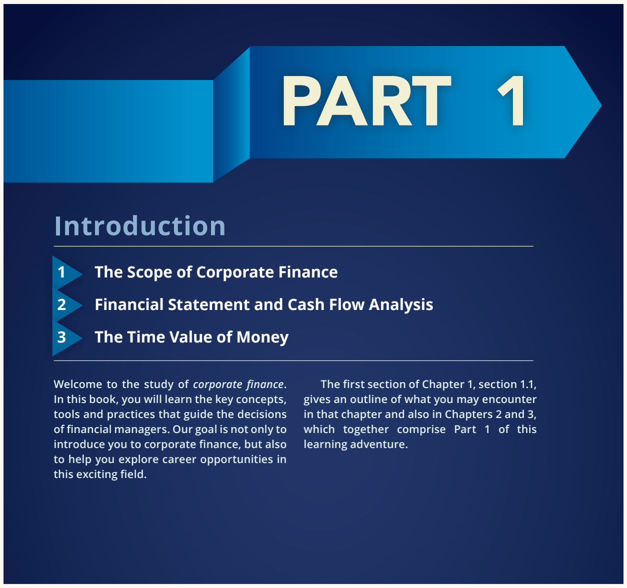
CONTENTS

Guide to the text

As you read this text you will find a number of features in every chapter to enhance your study of corporate finance and help you understand how the theory is applied in the real world.

PART OPENING FEATURES

Part openers introduce each of the chapters within the part and give an overview of how they relate to each other.


PART 1

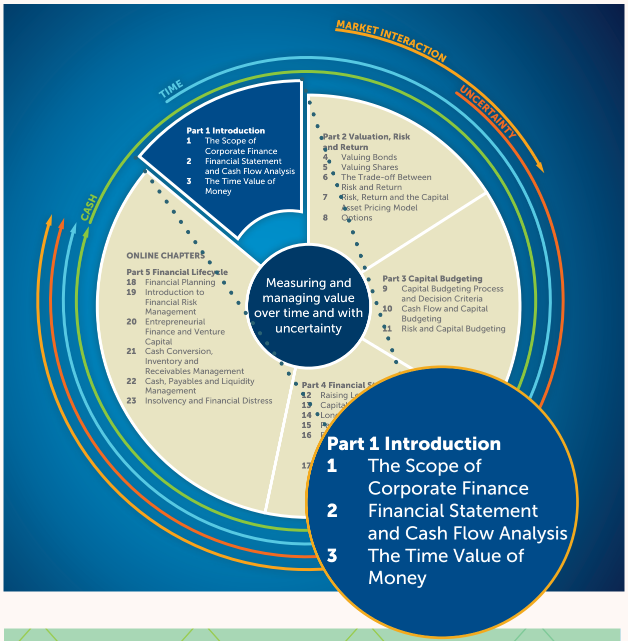
Introduction

1 The Scope of Corporate Finance
2 Financial Statement and Cash Flow Analysis
3 The Time Value of Money

Welcome to the study of *corporate finance*. In this book, you will learn the key concepts, tools and practices that guide the decisions of financial managers. Our goal is not only to introduce you to corporate finance, but also to help you explore career opportunities in this exciting field.

The first section of Chapter 1, section 1.1, gives an outline of what you may encounter in that chapter and also in Chapters 2 and 3, which together comprise Part 1 of this learning adventure.

Understand how key concepts are connected across all chapters in the part by viewing the **Concept map**.



After you have worked through the part, revisit the ethics in corporate finance in the **NEW Sound bites: ethics in corporate finance** to apply your knowledge with several Assignments.


NEW

SOUND BITES: ETHICS IN CORPORATE FINANCE – PART 1

WRITTEN BY BORIS BIELER

Boris Bieler has over twenty years of risk management experience mainly gained in senior audit leadership roles at foreign corporate and investment banks in Australia.

Boris studied at the University of Bayreuth in Germany and at the University of Warwick in England. He is a CFA charter holder, a Fellow of CPA Australia (FCPA) and a signatory of the Banking and Finance Oath (BFO) in Australia.

He has been a speaker and chairperson at conferences held by the Institute of Internal Auditors Australia and CPA Australia and has supported the CFA Institute globally with their programs and curriculum. Boris has also been a guest lecturer and panellist at Macquarie University and University of Technology Sydney on topics around auditing, risk management, corporate governance and ethics in banking. He is currently a member of the advisory board at the department of accounting and corporate governance at Macquarie University.

He has contributed to publications on ethics and the banking royal commission in Australia released on the CFA Institute's online portals and the BFO newsletter.

Boris has been working on youth education and mentoring initiatives and is passionate about sharing his knowledge to students and assisting them with their first steps into the corporate world.

WEEK 1 INTO JANE WONG'S M&A ANALYST ROLE

CHAPTER OPENING FEATURES

Gain an insight into how corporate finance theories relate to the real world through the **What companies do** at the beginning of each chapter.

3

THE TIME VALUE OF MONEY

WHAT COMPANIES DO

TRANSPORTS OF DELIGHT?

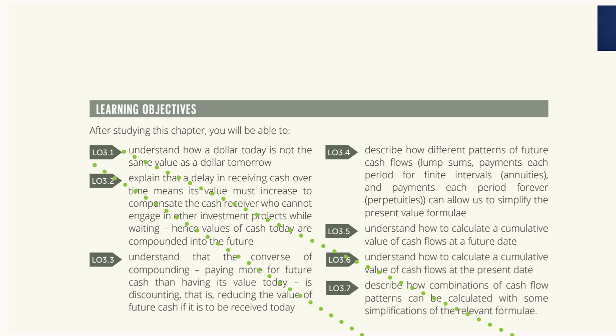
In March 2008, Meyrick and Associates, a consulting group, together with EconSearch and Steer Davies Gleave, presented a report on a range of transport options for the East–West Link to the Victorian State Government. The East–West Link was a planned major infrastructure project that would affect transport and traffic patterns for millions of people who live and work in the city of Melbourne over many decades. The report summarised extensive analyses undertaken to evaluate the benefits and costs of the base case and the various other options for developing this new piece of transport infrastructure, and described a series of present values that had been determined. For example, one piece of analysis was of the present value of public transport revenue accrued by each option. It was determined by:

5 calculating the difference between the base case and each other option.

The project received considerable public attention, especially when, following a 2014 election and change of government, it was revealed that the initial business case for the project predicted a loss of 45 cents for every dollar invested. Further analyses were conducted to incorporate wider economic benefits stemming from the project, including reduced travel and commercial times; but the return from the project increased only to 84 cents for each dollar invested.

The use of present value analysis is central to any project in which a decision must be made on whether or not to commit scarce financial resources to an investment that will produce a long stream of cash payments in the future. This chapter will show you the key

Identify the key concepts you will engage with through the **Learning objectives** at the start of each chapter.



LEARNING OBJECTIVES

After studying this chapter, you will be able to:

LO3.1 understand how a dollar today is not the same value as a dollar tomorrow

LO3.2 explain that a delay in receiving cash over time means its value must increase to compensate the cash receiver who cannot engage in other investment projects while waiting – hence values of cash today are compounded into the future

LO3.3 understand that the converse of compounding – paying more for future cash than having its value today – is discounting, that is, reducing the value of future cash if it is to be received today

LO3.4 describe how different patterns of future cash flows (lump sums, payments each period for finite intervals (annuities), and payments each period forever (perpetuities)) can allow us to simplify the present value formulae

LO3.5 understand how to calculate a cumulative value of cash flows at a future date

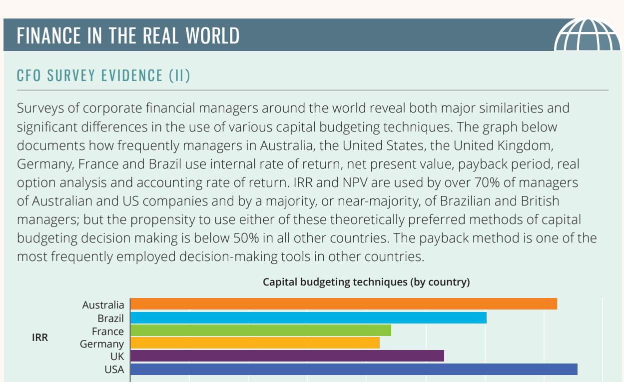
LO3.6 understand how to calculate a cumulative value of cash flows at the present date

LO3.7 describe how combinations of cash flow patterns can be calculated with some simplifications of the relevant formulae.

Find the main heading covering each learning outcome quickly with **LO icons**.

FEATURES WITHIN CHAPTERS

Analyse practical applications of concepts through the **Finance in the real world** examples.

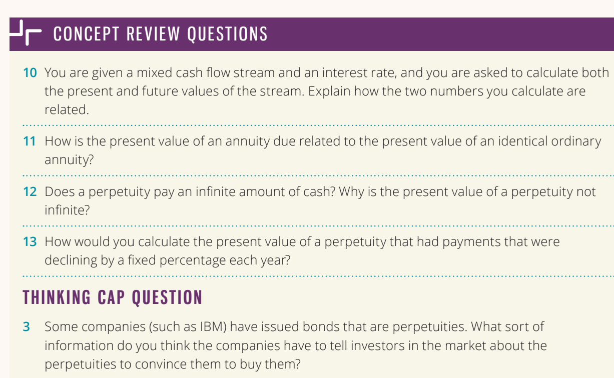


FINANCE IN THE REAL WORLD

CFO SURVEY EVIDENCE (II)

Surveys of corporate financial managers around the world reveal both major similarities and significant differences in the use of various capital budgeting techniques. The graph below documents how frequently managers in Australia, the United States, the United Kingdom, Germany, France and Brazil use internal rate of return, net present value, payback period, real option analysis and accounting rate of return. IRR and NPV are used by over 70% of managers of Australian and US companies and by a majority, or near-majority, of Brazilian and British managers; but the propensity to use either of these theoretically preferred methods of capital budgeting decision making is below 50% in all other countries. The payback method is one of the most frequently employed decision-making tools in other countries.

Check your understanding of the content by answering the **Concept review questions** as you progress through the chapter.



CONCEPT REVIEW QUESTIONS

10 You are given a mixed cash flow stream and an interest rate, and you are asked to calculate both the present and future values of the stream. Explain how the two numbers you calculate are related.

11 How is the present value of an annuity due related to the present value of an identical ordinary annuity?

12 Does a perpetuity pay an infinite amount of cash? Why is the present value of a perpetuity not infinite?

13 How would you calculate the present value of a perpetuity that had payments that were declining by a fixed percentage each year?

THINKING CAP QUESTION

3 Some companies (such as IBM) have issued bonds that are perpetuities. What sort of information do you think the companies have to tell investors in the market about the perpetuities to convince them to buy them?

FEATURES WITHIN CHAPTERS

Examine how theoretical concepts have been used in practice through the **Example boxes**.

EXAMPLE

More Google Calculations

In 2004, the year of its IPO, Google generated total revenue of about \$3.2 billion. Fourteen years later, the company reported 2018 revenues of about \$137 billion. What was the annual growth rate in Google's revenues during this period? Again, we apply **Equation 3.1**, substituting the values that we know as follows:

$$FV = PV(1 + r)^n$$
$$\$137 = \$3.2(1 + r)^7$$
$$(\$137 \div \$3.2)^{(1 \div 7)} = (1 + r)$$
$$1.71 = 1 + r$$
$$r = 0.71 = 71\%$$

Notice here that we are still solving for *r*, just as we did in the previous example. In this case, the *interpretation* of *r* is a little different. It is not the rate of return (or the rate of interest) on some investment, but rather the *compound annual growth rate* between Google's 2004 and 2018 revenues. It is a simple measure of how fast the company was growing during this period. Repeating the algebraic manipulations (spreadsheet keystrokes) from the prior example, we can determine that Google's revenues increased at an annual rate of 71% from 2004 to 2018.

Sources: Google, https://abc.xyz/investor/static/pdf/2018Q4_alphabet_earnings_release.pdf. Accessed 25 June 2019.

END-OF-CHAPTER FEATURES

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

Review your understanding of the key chapter topics with the **Summary**.

STUDY TOOLS

SUMMARY

LO9.1
- The capital budgeting process involves generating, reviewing, analysing, selecting and implementing long-term investment proposals that are consistent with the company's strategic goals.
- Other things being equal, managers would prefer an easily applied capital budgeting technique that considers cash flow, recognises the time value of money, fully accounts for expected risk and return and, when applied, leads to higher share prices.
- Though simplicity is a virtue, the simplest approaches to capital budgeting do not always lead companies to make the best investment decisions.

LO9.2
- Sophisticated techniques include *net present value* (NPV), *internal rate of return* (IRR) and *profitability index* (PI). These methods often give the same accept–reject decisions, but do not necessarily rank projects the same. They all focus on cash flows, rather than accounting earnings, and make appropriate adjustments for time.
- The NPV gives a direct estimate of the change in shareholder wealth resulting from a given investment and provides a straightforward way to control differences in risk among alternatives. However, it does not provide a means for incorporating the value of managerial flexibility during the life of a project.
- The NPV is calculated as the sum of the discounted cash flows, as shown in important **Equation 9.1**.
- The EVA is a variant of NPV analysis, which essentially calculates an investment's NPV on a year-by-year basis. It uses the economic profit, rather than just focusing on accounting profit, and thus allows for the cost of capital. The EVA is equal to the cash flow less the product of the cost of capital and invested capital.

LO9.3
- The IRR is the rate of return which sets the NPV (or sum of the discounted cash flows) to zero, as shown in important **Equation 9.2**.
- The IRR approach makes an appropriate adjustment for the time value of money and allows managers to make explicit, quantitative adjustments for differences in risk across different projects. However, using the IRR approach can occasionally lead to poor investment decisions when projects have cash flow streams alternating between negative and positive values. The IRR technique may provide sub-optimal project rankings when different investments have very different scales or when the timing of cash flows varies dramatically from one project to another.
- Although the NPV and IRR techniques give the same accept or reject decisions, these techniques do not necessarily agree in ranking mutually exclusive projects. IRR techniques weight earlier cash flows higher (since they are discounted less), and this can result in differences between rankings using each technique. Because of its lack of mathematical, scale and timing problems, the most straightforward and, theoretically, the best decision technique is net present value (NPV).

LO9.4
- The profitability index is a close cousin of the NPV approach, but it suffers from the same scale problem as the IRR approach. The PI is calculated as shown in important **Equation 9.3**. It is the sum of the discounted cash flows from Period 1 onwards, indexed by the modulus of the cash flow at time zero.

LO9.5, LO9.6
- Capital budgeting techniques include the payback period, discounted payback period and accounting rate of return, which are less sophisticated techniques, because they do not explicitly deal with the time value of money and are not tied to the company's wealth-maximisation goal.

LO9.7
- A single complete example can illustrate how the different measures of value can be calculated, and how investment decisions that add value to an enterprise can be identified.

Test your knowledge and consolidate your learning through the **Important equations**, **Self-test problems**, **Questions** and **Problems**.

IMPORTANT EQUATIONS

TABLE OF IMPORTANT EQUATIONS

9.1 $NPV = CF_0 + \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + ... + \frac{CF_n}{(1+r)^n}$

9.2 $IRR = r, \text{ where } NPV = \$0 = CF_0 + \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + ... + \frac{CF_n}{(1+r)^n}; \; r = IRR$

9.3 $PI = \dfrac{\frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + ... + \frac{CF_n}{(1+r)^n}}{|CF_0|}$

SELF-TEST PROBLEMS

Answers to these 'Self-test problems' and the 'Concept review' questions throughout the chapter appear on the Student Companion Website.

ST9-1 JK Products Pty Ltd is considering investing in either of two competing projects that will allow the company to eliminate a production bottleneck and meet the growing demand for its products. The company's engineering department narrowed the alternatives down to two: Status Quo (SQ) and High Tech (HT). Working with the accounting and finance personnel, the company's CFO developed the following estimates of the cash flows for SQ and HT over the relevant six-year time horizon. The company has an 11% required return, and views these projects as equally risky.

QUESTIONS

Q9-1 For a company that uses the NPV rule to make investment decisions, what consequences result if the company misestimates shareholders' required returns and consistently applies a discount rate that is 'too high'?

Q9-2 'Cash flow projections more than a few years out are not worth the paper they're written on. Therefore, using payback analysis, which ignores long-term cash flows, is more reasonable than making wild guesses, as one has to do in the NPV approach.' Respond to this comment.

Q9-3 'Smart analysts can massage the numbers in NPV analysis to make any project's NPV look positive. It is better to use a simpler approach, such as payback or accounting rate of return, that gives analysts fewer degrees of freedom to manipulate the numbers.' Respond to this comment.

PROBLEMS

NET PRESENT VALUE

P9-1 Calculate the net present value (NPV) for the following 20-year projects. Comment on the acceptability of each. Assume that the company has an opportunity cost of 14%.

- **a** Initial cash outlay is \$15,000; cash inflows are \$13,000 per year.
- **b** Initial cash outlay is \$32,000; cash inflows are \$4,000 per year.
- **c** Initial cash outlay is \$50,000; cash inflows are \$8,500 per year.

P9-2 Michael's Bakery is evaluating a new electronic oven. The oven requires an initial cash outlay

END-OF-CHAPTER FEATURES

Analyse **Case studies** and **Real-world case studies** that present issues in context, encouraging you to integrate the concepts discussed in the chapter and apply them to the workplace.

CASE STUDY

CAPITAL BUDGETING PROCESS AND TECHNIQUES

Contact Manufacturing Ltd is considering two alternative investment proposals. The first proposal calls for a major renovation of the company's manufacturing facility. The second involves replacing just a few obsolete pieces of equipment in the facility. The company will choose one project or the other this year, but it will not do both. The cash flows associated with each project appear below and the company discounts project cash flows at 15%.

YEAR	RENOVATE	REPLACE
0	−$9,000,000	−$2,400,000
1	3,000,000	2,000,000
2	3,000,000	800,000
3	3,000,000	200,000
4	3,000,000	200,000
5	3,000,000	200,000

ASSIGNMENT

1 Calculate the *payback period* of each project and, based on this criterion, indicate which project you would recommend for acceptance.

2 Calculate the *net present value* (NPV) of each project, and based on this criterion, indicate which project you would recommend for acceptance.

3 Calculate the *internal rate of return* (IRR) of each project, and based on this criterion, indicate which project you would recommend for acceptance.

4 Calculate the *profitability index* (PI) of each project, and based on this criterion, indicate which project you would recommend for acceptance.

5 Overall, you should find conflicting recommendations based on the various criteria. Why is this occurring?

6 Chart the *NPV profiles* of these projects. Label the intersection points on the *x*- and *y*-axes and the crossover point.

7 Based on this NPV profile analysis, and assuming the *WACC* is 15%, which project would you recommend for acceptance? Why?

8 Based on this *NPV profile* analysis, and assuming the *WACC* is 25%, which project would you recommend for acceptance? Why?

9 Discuss the important elements to consider when deciding between these two projects.

REAL-WORLD CASE STUDY

ALL IN THE FAMILY

The Egibi family operated a series of businesses of quite diverse natures over five generations, and left a reasonable record of its activities for us to analyse. The start of the business is not particularly clear, although it seems that it came from a marriage link when a man of some means married a less wealthy woman and took up business with his brother-in-law. The Egibi brother-in-law claims to have taught his sororal nephew to read and write, and later adopted him, but without granting him an inheritance share beside his three natural sons. In the following generations, the eldest sons married upward, to women 'of good families' who had good connections and provided rich dowries. By contrast, their daughters were married off to business partners with dowries that typically cost only a fraction of what their eldest sons received.

The Egibis invested their profits in farmland, which they rented out on a sharecropping basis. The leasing arrangements focused on the long term, and encouraged tenants on their lands to invest in cultivating more capital-

officials responsible for maintaining the canals and collecting fees from their users in which the family paid the officials to pay the government, in return for the right to extract the fees in kind. In effect, the Egibis set up a strong shipping, storage and food-processing network, with tax-farming as a sideline operation. This work built enough financial support from the external market that, in two generations, the family was considered one of the wealthiest in the country adjacent to the capital city. The primary organisational structure used by the Egibis was the partnership arrangement, with local entrepreneurs who specialised in related production, such as beer-brewing or buying local crops, and selling them in the capital. The businesses maintain working capital at steady levels and distribute profits to the individual partners, to allow them to invest on their own in other businesses.

To extend their own investments, the Egibis moved into real estate. They developed a special relationship with the household of the local crown prince, and acquired a house

CASE STUDY

REAL-WORLD CASE STUDY

Guide to the online resources

FOR THE INSTRUCTOR

Cengage is pleased to provide you with a selection of resources that will help you prepare your lectures and assessments. These teaching tools are accessible via cengage.com.au/instructors for Australia or cengage.co.nz/instructors for New Zealand.

MINDTAP

Premium online teaching and learning tools are available on the *MindTap* platform - the personalised eLearning solution.

MindTap is a flexible and easy-to-use platform that helps build student confidence and gives you a clear picture of their progress. We partner with you to ease the transition to digital – we're with you every step of the way.

The *Cengage Mobile App* puts your course directly into students' hands with course materials available on their smartphone or tablet. Students can read on the go, complete practice quizzes or participate in interactive real-time activities.

MindTap for Corporate Finance is full of innovative resources to support critical thinking, and help your students move from memorisation to mastery! Includes:

- Polling questions
- Smart videos
- Concept review questions
- Revision quizzes
- Problem sets (*in Aplia*)

Now the simplicity and reliability of *Aplia* is available in the premier eLearning platform, *MindTap*.

Engage your students at every stage of the course with study exercises and assignments that connect concepts to the real world and provide an unmatched level of feedback.

Assessments offer automatic grading of every question with immediate explanations that link back to the online text so that students can review concepts.

MindTap is a premium purchasable eLearning tool. Contact your Cengage learning consultant to find out how *MindTap* can transform your course.

INSTRUCTOR'S MANUAL

The Instructor's manual includes:

- Learning objectives
- Chapter outlines
- Key questions
- Case question solutions
- Suggested class discussions and projects
- Videos
- Websites and readings

COGNERO®-BASED TEST BANK

A bank of questions has been developed in conjunction with the text for creating quizzes, tests and exams for your students. Create multiple test versions in an instant and deliver tests from your LMS, your classroom, or wherever you want using Cognero. Cognero test generator is a flexible online system that allows you to import, edit, and manipulate content from the text's test bank or elsewhere, including your own favourite test questions.

SMART VIDEOS

Industry expert talking-head videos.

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Use the chapter-by-chapter **PowerPoint slides** to enhance your lecture presentations and handouts by reinforcing the key principles of your subject.

ARTWORK FROM THE TEXT

Add the digital files of **graphs, tables, pictures and flow charts** into your learning management system, use them in student handouts, or copy them into your lecture presentations.

FOR THE STUDENT

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MindTap for Corporate Finance includes *Aplia* – the online homework and assessment solution that helps you to better prepare for class and exams.

CENGAGE | MINDTAP

PREFACE

Finance matters! All business students – and, increasingly, members of the general public – need to understand finance. Whether you are working to evaluate a potential investment, an alternative marketing campaign or a new product decision, you can benefit from an understanding of introductory finance. In your personal life, too, whether you want to estimate the amount to save to buy a new car or home, or you want to decide whether to buy shares, bonds or both for your retirement account, you may make better decisions if you have a grasp of concepts of finance.

As instructors (and former students), however, we realise that finance can be an intimidating subject, especially for students who are challenged by quantitative material. The initial goal in writing this book was to change that perception by reducing the intimidation factor and clearly communicating the excitement and relevance that finance holds for each of us. We hope to continue that excitement and relevance with this new edition.

In previous years, the US editions received two types of feedback, suggesting that they achieved their objective of creating an effective, user-friendly text. Many users told the authors, first, about their positive experiences with the book, and, second, that the book continued to experience strong and growing success in the market. This success carried over to the first and second Asia–Pacific editions, published in 2014 and 2017 respectively, and we are grateful to all those who bought the book and who gave us their comments on it.

In this third Asia–Pacific edition, we aim to build on the book's earlier success to establish it as a market-leading corporate finance text. We strongly believe that this third edition offers the up-to-date pedagogy and features necessary to achieve these goals.

NEW DISTINGUISHING FEATURES OF THE BOOK

This book shows you how the concepts you have learned in your fundamental business courses – such as economics, statistics and accounting – directly connect to finance. Understanding these linkages should allow you to quickly realise that you already know more about finance than you think you do! To help you recognise the practicality of the concepts covered in this book, chapters include many illustrations of how you may utilise key chapter ideas in your own lives. In this third Asia–Pacific edition, we have updated examples and cases. We have continued to use the 'flow chart' from the second Asia-Pacific edition for the overall learning pattern of the book, so that you can see at a glance where the current topic you are reading fits into the universe of finance knowledge. We have adjusted questions and problems at the ends of chapters; and we have continued to bring into our discussions materials reflecting existing and emerging finance practice across the Asia-Pacific region.

In addition to the major cases at the end of each Part of the book, we have introduced new cases which focus on ethical issues in finance, as a growing field in the finance literature and practice.

Every student needs some extra explanation or support at different points in this course. Consequently, an outstanding technology package accompanies this book (see the Resources Guide for further details) to allow you to learn and absorb material at your own pace.

Included in this technology package are many video clips of finance professionals and scholars, each of whom contributes to the picture of just how often financial issues affect today's world.

CORE PRINCIPLES AND FEATURES

To accomplish our goal of making this the most effective, student-friendly introductory finance textbook in the market today, we followed several core principles when writing and revising the text and designing its support package.

- *Pique your interest, as students of finance, and demonstrate the relevance of important concepts and techniques.* We feel that it's important to begin each chapter with a recent practical illustration that stimulates your interest in the chapter. The chapters of this book each begin with a story pulled from recent headlines that illustrates a key chapter concept in an applied setting.

  In order to make it clear that the concepts and techniques presented in this text are not merely academic abstractions, but rather are used by industry practitioners, we have included in most chapters a feature called 'Finance in the Real World'. It adds reality to your learning experience by providing insight into how senior financial executives apply many of the concepts and techniques that are presented throughout the book.

  We also strive to provide you with a smooth bridge between concepts and practice by including demonstrations that are labelled 'Example'. These illustrations, many of which use real data from well-known companies, take concepts and make them easy to understand within interesting and relevant contexts.

  The third edition of the Asia-Pacific version of the text also includes a new set of cases which encourage the reader to think about ethical issues involved with financial decisions. These have been created by Boris Bieler, a new contributor to the book. Called 'Sound Bites: Ethics in Corporate Finance', the cases are located at the end of each of the five Parts of the book (Part V being online – see the Resources Guide for further details), Each financial ethics case links back to the initial set-up at the end of Part I, and provides a new decision situation for Jane Wong, the central actor in the cases. Following each case, we give a set of Assignments for student activity, and, in the accompanying technology package (see the Resources Guide for further details) a collection of Polling Questions which may be used to spark discussion in a tutorial or seminar.

- *Maximise the pedagogical and motivational value of technology.* Technology accompanying textbooks may often impede learning and classroom delivery rather than facilitate student interest and understanding. At times, the mental investment required to learn enough about text technology can cancel out one's ability to absorb the most important finance concepts. In other cases, students may focus too much on what a particular technology can do, rather than what it should do. With this in mind, we have developed an accompanying technology package which engages, motivates and at times entertains readers, while helping them master financial concepts in their own time and at their own pace. Most of all, as authors of the Asia-Pacific text, we wanted to take primary responsibility for integrating the technology seamlessly with the text's most important concepts and techniques.

To meet this principle, please refer to the Resources Guide on p. xxi to see a sample of the rich content that you can access.

- *Provide a truly global perspective, viewed through an Asia-Pacific lens.* The economic world is shrinking – particularly with respect to financial transactions. Formerly centrally planned economies are moving towards becoming market economies. Many developing nations are making rapid economic progress using markets-based methods. Financial markets play an increasingly important role in the ongoing globalisation of business and finance. Against this backdrop of change, some aspects of business still vary significantly in different markets; for example, the Australian or New Zealand company stock exchange listing rules and aspects of the new issues markets are very different from those in the US markets. As future practitioners in this region, we feel it is important for you to understand these distinctions. Rather than grouping international issues into a chapter or two, we have integrated a global perspective, while providing an Asia-Pacific focus, throughout the book.
- *Consider students' prerequisites and connect with the courses you have taken to finance.* Experienced financial managers consistently tell us that they need people who can see the big picture and who can recognise connections across functional disciplines. To help you develop a larger sense of what finance is about, why it is relevant to your business studies, and to ease your transition into your own chosen fields, we highlight concepts that most students will have learned in their introductory economics, statistics and accounting courses. We then connect these concepts to finance.
- *Inspire students to think beyond the book and explore some of these concepts in more depth.* To help you do this, throughout the text we have included 'stretch' questions in the margin near the related discussion. These questions, which are labelled 'Thinking cap questions', are intended to encourage you to think beyond the direct explanation of the text about applied issues in finance. These insights may also be relevant for job interviews that you may be undertaking; you can use these to prepare for interviews or can ask these questions about the organisation during an interview.

For additional learning enhancements, see the Guide to the Text and Guide to the Online Resources on p. xxi and p. xxv respectively.

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He has contributed to publications on ethics and the banking royal commission in Australia released on the CFA Institute's online portals and the BFO newsletter.

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Corporate finance is the art of measuring and managing value over time and with uncertainty

Cash is the physical measure of value, which is embedded in the flow of **Time** and affected by **Uncertainty**. Exchange of value occurs through **Market interaction**.

PART 1

Introduction

1 The Scope of Corporate Finance
2 Financial Statement and Cash Flow Analysis
3 The Time Value of Money

Welcome to the study of *corporate finance*. In this book, you will learn the key concepts, tools and practices that guide the decisions of financial managers. Our goal is not only to introduce you to corporate finance, but also to help you explore career opportunities in this exciting field.

The first section of Chapter 1, section 1.1, gives an outline of what you may encounter in that chapter and also in Chapters 2 and 3, which together comprise Part 1 of this learning adventure.

1 THE SCOPE OF CORPORATE FINANCE

WHAT COMPANIES DO

APPLE INC.: APPLE EPS REACHES ALL-TIME HIGH AT $4.18

January 2019 – Apple today announced financial results for its fiscal 2019 first quarter, ended 29 December 2018. The company posted quarterly revenue of US$84.3 billion, a decline of 5% from the year-ago quarter, and quarterly earnings per diluted share of US$4.18, up 7.5%. International sales accounted for 62% of the quarter's revenue.

Revenue from iPhone® declined 15% from the prior year, while total revenue from all other products and services grew 19%. Services revenue reached an all-time high of US$10.9 billion, up 19% over the prior year. Revenue from Mac® and Wearables, Home and Accessories also reached all-time highs, growing 9% and 33%, respectively, and revenue from iPad® grew 17%.

'While it was disappointing to miss our revenue guidance, we manage Apple for the long term, and this quarter's results demonstrate that the underlying strength of our business runs deep and wide', said Tim Cook, Apple's CEO. 'Our active installed base of devices reached an all-time high of 1.4 billion in the first quarter, growing in each of our geographic segments. That's a great testament to the satisfaction and loyalty of our customers, and it's driving our Services business to new records thanks to our large and fast-growing ecosystem.'

'We generated very strong operating cash flow of US$26.7 billion during the December quarter and set an all-time EPS [earnings per share] record of US$4.18', said Luca Maestri, Apple's CFO. 'We returned over US$13 billion to our investors during the quarter through dividends and share repurchases. Our net cash balance was US$130 billion at the end of the quarter, and we continue to target a net cash neutral position over time.'

Source: 'Apple Reports First Quarter Results.' Press release. 29 January 2019. https://www.apple.com/newsroom/2019/01/apple-reports-first-quarter-resaults/. Accessed 9 June 2019.

This sort of analysis of corporate performance contains a great deal of information, although the particular meaning of these details may be lost in the wave of terminology. This press release contained accounting data, financial data, product data and customer satisfaction data. How do we decode these sets of information? This text focuses on corporate financial performance, but necessarily draws on the other sets of information given out by corporations. We shall examine in this book how important it is to consider cash flows (particularly distinctly from net income or profit measures as supplied in accounting data), why we may wish to know what the given corporation is doing with its shares (buying them back or selling more of them) and such other aspects as whether the corporation is working in a domestic market or has international exposure, as Apple clearly does (62% of its sales revenue in this quarter came from international sales).

LEARNING OBJECTIVES

After studying this chapter, you will be able to:

- LO1.1 describe how companies obtain funding from financial intermediaries and markets, and discuss the five basic functions that financial managers perform
- LO1.2 define agency costs and explain how shareholders monitor and encourage corporate managers to maximise shareholder wealth
- LO1.3 appreciate how finance interacts with other functional areas of any business, assess the costs and benefits of the principal forms of business organisation and explain why limited liability companies, with publicly traded shares, dominate economic life in most countries
- LO1.4 see the diverse career opportunities available to finance majors.

LO1.1

1.1 CORPORATE FINANCE ELEMENTS AND FUNCTIONS

As you begin your learning journey in corporate finance using this book, it is useful to have an overview of the content you will cover. This chapter offers guidelines in two dimensions: a summary of key corporate finance ideas, and a consideration of applications of corporate finance ideas as they have emerged in actual markets around the world. In this first section of the chapter, we outline the content of the central ideas or elements of corporate finance. In the following sections, we consider how those ideas have been used to define what a corporate financial manager does and how that role interacts with other functional business areas; and then we review what business (corporate) entities have emerged to implement the ideas. This review leads us back to close Chapter 1 with a summary of career opportunities that may exist for people in corporate finance.

1.1a ELEMENTS AND STRUCTURE OF CORPORATE FINANCE LEARNING

The order of chapters in this book is built on our view of the central concepts that underpin corporate finance. Foundations are laid in Part 1, with the key ideas in Chapter 1. In corporate finance, we depend a great deal on measurement – if we can measure concepts, we may be better able to manage them – so in Chapter 2 we outline the key (accounting) measures that are relevant for finance. The principal focus in corporate finance is on cash flows in an organisation, but their measurement is developed from traditional accounting concepts such as net income. We then take the concept of cash flow and introduce you in Chapter 3 to the primary insight of finance, the time value of money, which allows us to compare cash flows at different times, to see if value is being added to an organisation by its decisions, or if value is being reduced. These three chapters complete Part 1.

Because applications of the time value of money come in many different forms based on the huge variety of financial instruments that have been created over human history, we explore some of the most important applications in Part 2 of the book. Here we review the valuation of bonds (Chapter 4) and of shares (Chapter 5), before adding a further element central to finance, the concept of risk (Chapter 6). With the concept of risk in hand, we explore two major applications of financial value and risk, by studying the capital asset pricing model (Chapter 7) and options (Chapter 8).

In Part 3, we turn to a primary decision process arising for corporate entities: how to decide which investments – typically large, long-term commitments of funds with cash returns that extend over many years into the future – should be undertaken. The key insight from Parts 1 and 2 is that investments that add net present value (NPV) to the firm are most preferred. If an individual or corporation has to choose just one among several positive NPV investments, then the one with the largest NPV is most preferred. This whole area of analysis is covered under the heading of Part 3, Capital Budgeting. In Part 3 we examine many examples of the challenges which arise when measuring the present value of uncertain cash inflows and outflows associated with various types of investment. Naturally, risk is a constant companion in this exploration of how to measure value from future commitments, and we explain how risk can be calculated and incorporated in the present value formulations.

Then we come to Part 4 Financial Strategy. Successful business organisations arise from the commitment of their managers to undertake activities which add value to the organisations through investments; but those investments often cannot be undertaken without new funding (cash inflows) being contributed to the organisation. The funds may come from existing activities which generate net positive cash flows; or they may arise in concert with the start of new activities; or the funds may need to be newly contributed by sources external to the organisation. When we consider these different funds suppliers, we are talking about financial strategy. The *external* funds suppliers, in particular, are very important to almost all organisations, and so Part 4 examines the various ways a modern corporation can raise funds externally from groups or persons who are not currently part of the corporation, but who are willing to commit the funds and trust the corporation's management to create a positive return for them. Some of these external funds may be borrowed, and some may be given. The borrowed funds are typically repaid over time, with appropriate returns to the funds' suppliers. The funds which are given are exchanged for ownership in the corporation – shares of various types – to which an expected return is attached, but not guaranteed. The return to the shareholders may be directly in cash or other shares, a form of dividend; or it may be in terms of a rising value of the shares so the shareholders can obtain a capital gain from selling the shares in the future.

By conquering the content of Parts 1, 2, 3 and 4, we are now in a good position to understand the essential operations of modern corporate finance. The subject, however, is much larger than its essential features. Thanks to many generations of thinkers and financial activists over the past 150 or more years, we have seen the emergence of some new pathways for understanding advanced features of corporate finance. One of these pathways is tackled in Part 5, under the heading of Financial Lifecycle. When we examined organisations' financial activities in both capital budgeting and financial strategy in Parts 1–4, we tended to focus on established businesses that were already operating in their markets. But all organisations start somewhere and at some time, and should have the ability to create a financial plan as they consider the financing of these beginning businesses and their hopeful later growth. This area of study has now developed into a specific topic, entrepreneurial finance and venture capital, that we argue should be reviewed in a thorough corporate finance book; so we provide that review in Part 5. We also examine financial issues arising later in the corporate lifecycle, with growing businesses that have moved past their foundation; and we go on to consider what financial activities are involved with organisations that are in financial distress or, further, are sliding into insolvency and are liable for liquidation, ending their lives.

As corporate finance has evolved over recent years, there has emerged a growing concern that its practitioners may need to take a wider, societal view of the impacts of their activities in capital markets. A way to explain such a view in this text has been to include case studies of ethics in each of the five parts of the text. These ethics case studies have been created by a colleague of the main authors, Mr Boris Bieler. What is the key message of these studies? They represent an intensified focus on integrating ethics into management decisions and employee behaviour across the financial services industry, including the corporate finance sector. By their inclusion in the text, they aim to discourage repetition of past events of unethical activities, and to make current and future practitioners conscious of the ethical implications of their work. The finance sector has increasingly revisited expected norms and values for guiding employees' behaviour which is monitored, rewarded and disciplined. Through the cases, we hope to help meet the increasing community expectations of the finance industry, which is further evidenced in regulators' enforcement actions and more prescriptive standards.

The cases presented at the end of each part follow a logical pattern for learning. At the end of Part 1, we have a case that introduces a framework for dealing with ethical issues in finance; at the end of Part 2, once you have gained more knowledge about the key ideas of corporate finance, the case reviews some history on ethical issues; and Part 3's case expands on a series of activities in corporate management that encounter ethical questions, using your knowledge of capital budgeting from the chapters in Part 3. Part 4's case addresses expectations about ethical behaviour that have emerged from a number of reviews of behaviour in corporate finance in several countries; and the case for Part 5 gives a good summary of what may be expected to emerge in the interaction between ethics and finance in coming years.

1.1b THE FIVE BASIC CORPORATE FINANCE FUNCTIONS

Although **corporate finance** is defined generally as the activities involved in managing cash (money) that flows through a business, a more precise description notes that the practice of corporate finance involves five basic functions: financing, financial management, capital budgeting, risk management and corporate governance. Nearly every topic covered in this text focuses on one or more of these five functions.

corporate finance
The activities involved in managing cash (money) that flows through a business

Financing

The **financing function** involves raising capital to support a company's operations and investment programs. A key aspect of this activity, known as the *capital structure decision*, involves determining and maintaining the mix of debt and equity securities that maximises the company's overall market value. Businesses raise money either externally, from creditors or shareholders, or internally, by retaining and reinvesting profits. Companies in Australia and other developed economies raise about two-thirds of their required financing internally, but the financing function focuses primarily on *external financing*. Large companies enjoy varied opportunities to raise money externally, either by selling *equity* (ordinary or preferred shares) or by issuing *debt*, which involves borrowing money from creditors. When companies are young and small, they usually must raise equity capital privately, from friends and family, or from professional investors such as *venture capitalists*. **Venture capitalists** specialise in making high-risk, high-return investments in rapidly growing entrepreneurial businesses. After companies reach a certain size, they may 'go public' by conducting an **initial public offering (IPO)** of shares – selling shares to outside investors and listing them for trade on a stock exchange. After going public, companies can raise funds by selling additional shares.

financing function
Raising capital to support a company's operations and investment programs

venture capitalists
Professional investors who specialise in making high-risk, high-return investments in rapidly growing entrepreneurial businesses

initial public offering (IPO)
Companies offering shares for sale to the public for the first time by selling shares to outside investors and listing them for trade on a stock exchange

Financial Management

financial management function
The activities involved in managing the company's operating cash flows as efficiently and effectively as possible

The financial management function involves managing the company's operating cash flows as efficiently as possible. A key responsibility of the financial management function is to ensure that the company has enough funds on hand to support day-to-day operations. This involves obtaining seasonal financing, building adequate inventories to meet customer demand, paying suppliers, collecting from customers and investing surplus cash, all while maintaining adequate cash balances. Effectively managing the day-to-day financial activities of the company requires not only technical and analytical skills, but also people skills, since almost every aspect of this activity involves building and maintaining relationships with customers, suppliers, lenders and others.

Capital Budgeting

capital budgeting function
The activities involved in selecting the best projects in which to invest the company's funds based on their expected risk and return. Also called the investment function

The capital budgeting function, often called the *investment function*, involves selecting the best projects in which to invest the company's funds based on expected risk and return. It is a critical function for two reasons. First, the scale of capital investment projects is often quite large. Second, companies can prosper in a competitive economy only by seeking out the most promising new products, processes and services to deliver to customers. Companies such as Telstra, BHP Billiton, Woolworths and Hills Industries regularly make large capital investments, the outcomes of which drive the value of their companies and the wealth of their owners. For these and other companies, the annual capital investment budget can total several billion dollars.

The capital budgeting process breaks down into three steps:

1. Identifying potential investments.
2. Analysing the set of investment opportunities and selecting those that create the most shareholder value.
3. Implementing and monitoring the selected investments.

The long-term success of most companies depends on mastering all three steps.

Not surprisingly, capital budgeting is also the area where managers have the greatest opportunity to create value for shareholders by acquiring assets that yield benefits greater than their costs.

Risk Management

risk management function
The activities involved in identifying, measuring and managing the company's exposure to all types of risk to maintain an optimal risk–return trade-off, and therefore to maximise share value

risk shifting
When an organisation pays another entity or person to restore a loss of value due to unforeseen circumstances

risk spreading, or diversification
When an organisation undertakes a number of risk ventures at the same time and the likelihood of all the ventures simultaneously failing and reducing organisational value is very low

hedge
To diversify risks by using financial instruments to offset market risks such as interest rate and currency fluctuations

The risk management function involves identifying, measuring and managing the company's exposure to all types of risk to maintain an optimal risk–return trade-off, and therefore maximise share value. Common risks include losses that can result from adverse interest rate movements, changes in commodity prices and fluctuations in currency values. The techniques for managing these risks are among the most sophisticated of all corporate finance practices. The risk management task begins with quantifying the sources and size of a company's risk exposure and deciding whether to simply accept these risks, or to actively manage them.

Risks can be managed in two ways: risk shifting and risk spreading, or diversification. Risk shifting involves you or your organisation paying another entity to take on the risk and to compensate you in case negative outcomes occur. This is insurance. Some risks are easily insurable, such as the risk of loss due to fire, employee theft or product liability, because there is much history of their occurrence, meaning probabilities of loss are calculable.

Risk spreading involves combining activities that give rise to risks in such a way that the overall risk of the combination is less than the risk of each item in the combination. This is also called diversification.

For example, rather than use a sole supplier for a key production input, a company might choose to contract with several suppliers, even if doing so means purchasing the input above the lowest attainable price. However, most companies' risk management practices focus on market-driven risks. Risk managers, who typically work as part of a company's treasury staff, use complex financial instruments to hedge, or offset, market risks such as interest rate and currency fluctuations.

Corporate Governance

The corporate governance function involves developing company-wide structures and incentives that influence managers to behave ethically and make decisions that benefit shareholders. The existence of a well-functioning corporate governance system is extremely important. Good management does not occur in a vacuum. Instead, it results from a corporate governance system that hires and promotes qualified, honest people and structures employees' financial incentives to motivate them to maximise company value.

corporate governance function
The activities involved in developing company-wide structures and incentives that influence managers to behave ethically and make decisions that benefit shareholders

An optimal corporate governance system is difficult to develop in practice, not least because the incentives of shareholders, managers and other stakeholders often conflict. A company's shareholders want managers to work hard and protect shareholders' interests, but it is rarely profitable for any *individual* shareholder to expend time and resources monitoring managers to see if they are acting appropriately. An individual shareholder would personally bear all the costs of monitoring management, but the benefit of such monitoring would accrue to all shareholders. This is a classic example of the collective action problem that arises in most relationships between shareholders and managers. Likewise, managers may feel the need to increase the wealth of owners, but they also want to protect their own jobs. Managers, rationally, do not want to work harder than necessary if others will reap most of the benefits. Finally, managers and shareholders may effectively run a company to benefit themselves at the expense of creditors or other stakeholders who do not have a direct say in corporate governance.

collective action problem
When individual shareholders bear all the costs of monitoring management, but the benefit of such monitoring accrues to all shareholders

As you might expect, several mechanisms have been designed to mitigate these problems. A strong board of directors is an essential element in any well-functioning governance system because it is the board's duty to hire, fire, pay and promote senior managers. The board develops *fixed* (salary) and *incentive* (bonus- and share-based) compensation packages to align managers' and shareholders' incentives. Auditors play a governance role by certifying the validity of companies' financial statements.

For example, in Australia, the independent national governmental body charged with oversight of corporate activities is the Australian Securities and Investments Commission (ASIC). ASIC's role is to enforce and regulate company and financial services laws to protect Australian consumers, investors and creditors; to be the corporate, markets and financial services regulator. It was created in 1998 from an earlier national regulator, and had further functions added to its portfolio in 2002 for credit protection, oversight of the Australian Securities Exchange (ASX) in 2009 and of the newest stock exchange, Chi-X, in 2011. The ASX was created by the merger of the Australian Stock Exchange and the Sydney Futures Exchange in July 2006, and is today one of the world's top 10 listed exchange groups measured by market capitalisation.

Australian Securities and Investments Commission (ASIC)
The Australian government entity charged with enforcing and regulating company and financial services laws to protect Australian consumers, investors and creditors, and being the corporate, markets and financial services regulator for Australia

Australian Securities Exchange (ASX)
The primary stock exchange operating in Australia for trading shares in publicly listed companies

Just as companies struggle to develop an effective corporate governance system, so too do countries. Governments establish legal frameworks that either encourage or discourage the development of competitive businesses and efficient financial markets. For example, a legal system should permit efficiency-enhancing mergers and acquisitions, but should block business combinations that significantly restrict competition. It should provide protection for creditors and minority shareholders by limiting the opportunities for managers or majority shareholders to expropriate wealth.

We will discuss each of the five major finance functions at length in this text, and we hope you come to share our enthusiasm about the career opportunities that corporate finance provides. Never before has finance been as fast-paced, as technological, as international, as ethically challenging or as rigorous as it is today, and the market seems to be responding. A notable recent pattern in Australian university education has been that more students are currently enrolled in undergraduate and postgraduate business and management education courses than in any other broad field such as science, engineering or arts.