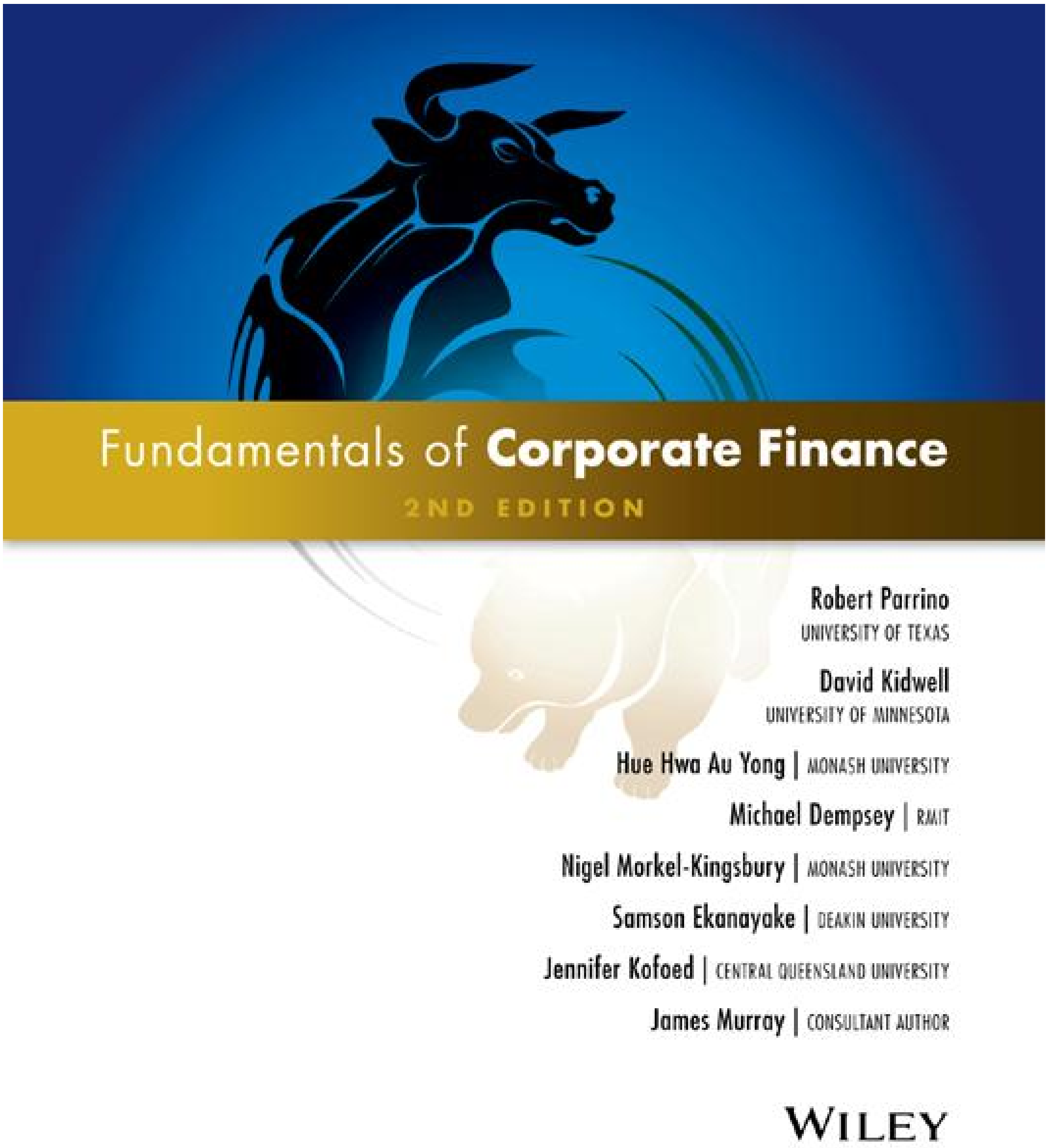
Fundamentals of Corporate Finance

2ND EDITION

Parrino | Kidwell | Au Yong | Dempsey | Morkel-Kingsbury | Ekanayake | Kofoed | Murray

WILEY

Prelims


Fundamentals of Corporate Finance
2ND EDITION
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David Kidwell
UNIVERSITY OF MINNESOTA
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James Murray previously taught at Monash University, and has also tutored at Swinburne University of Technology and Lincoln University. He completed his PhD in the area of dividend policy at Monash University. His research interests primarily relate to the role of the legal and tax environment in corporate finance.

Preface

 Fundamentals of corporate finance, 2nd edition, has been developed for use in an introductory course in corporate finance.

Balance between conceptual understanding and computational skills

Fundamentals of corporate finance reflects the reality that finance, as an intellectual discipline, continues to be challenged by the experiences and events of market activity. Following the global financial crisis, managers have embarked on even more uncertain times. Thus, although the teaching of finance may have remained robust as a framework of conceptual thought, it is imperative that students come to realise that 'finance is not physics', by which we mean that even a concept as foundational to financial management as the capital asset pricing model (CAPM) should not be interpreted as a literal truth. This leads to a consideration of managing risk and risk management approaches as having behavioural aspects that are the outcomes of a manager's or the firm's accumulated experience. They cannot always be reduced to the simple directives of a quantitative algorithm.

Our primary objective in writing this text was to provide students and lecturers with a book that strikes the best possible balance between helping students develop an intuitive understanding of key financial concepts and providing them with problem-solving and decision-making skills. In our experience, teaching students at all levels, we have found that students who understand the intuition underlying the basic concepts of finance are better able to develop the critical judgement necessary to apply financial tools to a broad range of real-world situations. An introductory corporate finance course should provide students with a strong understanding of both the concepts and tools that will help them in their subsequent business studies and personal and professional lives.

Market research supports our view. Academics who teach the introductory corporate finance course to undergraduates express a desire for a book that bridges the gap between conceptually-focused and computationally-focused books. This text is designed to bridge this gap. Specifically, the text develops the fundamental concepts underlying corporate finance in an intuitive manner while maintaining a strong emphasis on developing computational skills. It also takes the students one step further by emphasising the use of intuition and analytical skills in decision making.

Our ultimate goal has been to write a book and develop associated learning tools that help our colleagues succeed in the classroom — materials that are genuinely helpful in the learning process. Our book offers a level of rigour that is appropriate for finance majors and yet presents the content in a manner that both finance and non-finance students find accessible and want to read. Writing a book that is both rigorous and accessible has therefore been one of our key objectives. We have also tried to provide solutions to many of the challenges facing academics in the current environment, academics who are asked to teach ever-increasing numbers of students with limited resources. Finance academics need a book and associated learning tools that help them effectively leverage their time. The organisation of this book and the supplemental materials provide such leverage to an extent not found with other textbooks.

A focus on value creation

This book is more than a collection of ideas, equations and chapters. It has an important integrating theme — that of value creation. This theme, which is carried throughout the book, provides a framework that helps students understand the relations between the various concepts covered in the book and makes it easier for them to learn these concepts.

The concept of value creation is the most fundamental notion in corporate finance. It is in shareholders' best interests for value maximisation to be at the heart of the financial decisions made within the company. Thus, it is critical that students be able to analyse and make business decisions with a focus on value creation. The concept of value creation is introduced in the first chapter of the book and is further developed and applied throughout the remaining chapters.

The theme of value creation is operationalised through the net present value (NPV) concept. Once students grasp the fundamental idea that financial decision makers should only choose courses of action whose benefits exceed their costs, analysis, and decision making, using NPV becomes common sense. By helping students better understand the economic rationale for a decision from the outset, rather than initially focusing on computational skills, our text helps students remain focused on the true purpose of the calculations and the decision at hand.

Integrated approach: intuition, analysis and decision making

To support the focus on value creation, we have emphasised three approaches: (1) providing an intuitive framework for understanding fundamental finance concepts, (2) teaching students how to analyse and solve finance problems and (3) helping students develop the ability to use the results from their analyses to make good financial decisions.

1. **An intuitive approach.** We believe that explaining finance concepts in an intuitive context helps students develop a richer understanding of those concepts and gain better insights into how finance problems can be approached. It is our experience that students who have a strong conceptual understanding of finance theory better understand how things really work and are better problem solvers and decision makers than students who focus primarily on computa-tional skills.
2. **Analysis and problem solving.** With a strong understanding of the basic principles of finance, students are equipped to tackle a wide range of financial problems. In addition to the many numerical examples that are solved in the text of each chapter, this book has more than 1000 end-of-chapter homework and review problems that have been written with Bloom's Taxonomy in mind. We strive to help students acquire the ability to analyse and solve finance problems.
3. **Decision making.** In the end, we want to prepare students to make sound financial decisions. To help students develop these skills, throughout the text we illustrate how the results from financial analyses are used in decision making.

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March 2013

Organisation and coverage

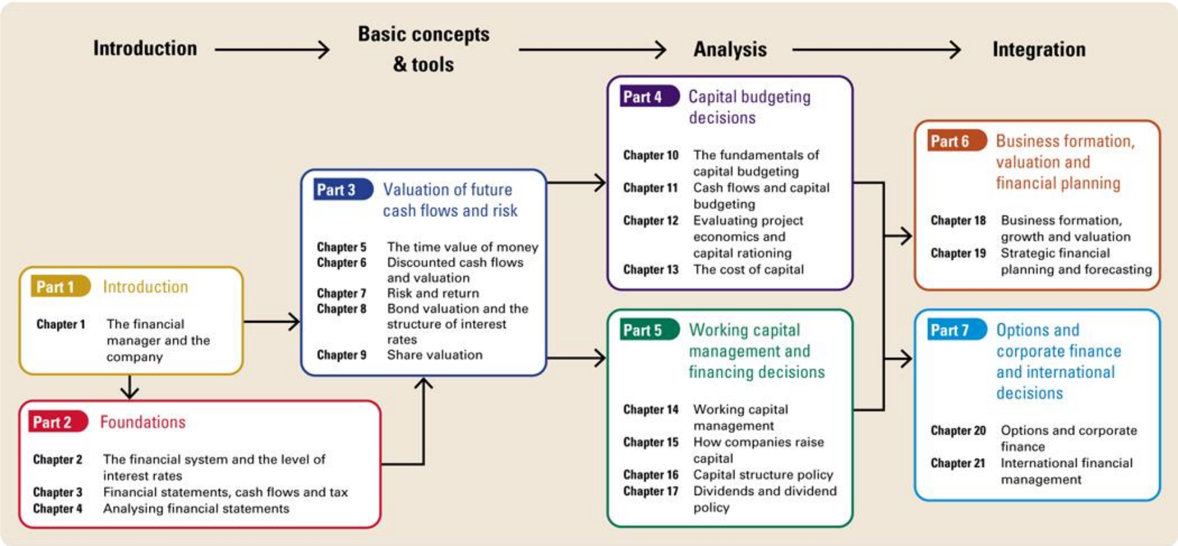
In order to help students develop the skills necessary to tackle investment and financing decisions, we have arranged the book's 21 chapters into major building blocks that collectively comprise the seven parts of the book, as illustrated in the accompanying figure and described below.

Introduction

Part 1, which consists of chapter 1, provides an introduction to corporate finance. It describes the role of the financial manager, the types of fundamental decisions that financial managers make, alternative forms of business organisation, the goal of the company, agency problems and how they arise, and the importance of ethics in financial decision making. These discussions set the stage and provide a framework that students can use to think about key concepts as the course progresses.

Foundations

Part 2 of the text consists of chapters 2 to 4. These chapters present the basic institutional, economic and accounting knowledge and tools that students should understand before they begin the study of financial concepts. The material in these chapters is typically taught in other courses. Since students come to the corporate finance course with varying academic backgrounds, and because the time that has elapsed since students have taken particular prerequisite courses also varies, the chapters in part 2 can help the lecturer ensure that all students have the same base level of knowledge early in the course. Depending on the educational background of the students, the lecturer might not find it necessary to cover all or any of the material in these chapters. The chapters might, instead, be assigned as supplementary readings.



Chapter 2 describes the services financial institutions provide to new businesses, how domestic and international financial markets work, how firms use financial markets, and how the level of interest rates in the economy is determined. Chapter 3 describes the key financial statements and how they are related while chapter 4 discusses ratio analysis and other tools used to evaluate financial statements. Throughout part 2, we emphasise the importance of cash flows to get students thinking about cash flows as a critical component of all valuation calculations and financial decisions.

Basic concepts and tools

Part 3 presents basic financial concepts and tools and illustrates their application. This part of the text, which consists of chapters 5 to 9, introduces the time value of money and risk and return concepts and extends them to cover the principles underlying the application of present value concepts to bond and share valuation. These chapters provide students with basic financial intuition and computational tools that will serve as the building blocks for analysing investment and financing decisions in subsequent chapters.

Analysis

Parts 4 and 5 of the text focus on investment and financing decisions. Part 4 covers capital budgeting. Chapter 10 introduces the concept of net present value and illustrates its application. This discussion provides a framework that will help students in the rest of part 4 as they learn the nuances of capital budgeting analysis in realistic settings.

Chapters 11 and 12 follow with in-depth discussions of how cash flows are calculated and forecast. The cash flow calculations are presented in chapter 11 using a valuation framework that will help students think about valuation concepts in an intuitive way and will prepare them for the extension of these concepts to business valuation in chapter 18. Chapter 12 covers analytical tools — such as break-even, sensitivity, scenario and simulation analysis — that will give students a better appreciation for how they can deal with the uncertainties associated with cash flow forecasts. Capital rationing is also covered in chapter 12.

Chapter 13 explains how the discount rates used in capital budgeting are estimated. This chapter uses an innovative concept — that of the finance balance sheet — to help students develop an intuitive understanding of the relationships between the costs of the individual components of capital and the company's overall weighted average cost of capital. It also provides a detailed discussion of methods used to estimate the costs of the individual components of capital that are used to finance a company's investments and how these estimates are used in capital budgeting.

Part 5 covers working capital management and financing decisions. It begins, in chapter 14, with a discussion of how companies manage their working capital and the implications of working capital management decisions for financing decisions and company value. This discussion is followed, in chapters 15 and 16, with discussions of how companies raise capital to fund their real activities and what factors affect how firms choose among the various sources of capital available to them. Chapter 17 rounds out the discussion of financing decisions with an introduction to dividends and dividend policy.

Integration

Part 6, which consists of chapters 18 and 19, brings together many of the key concepts introduced in the earlier parts of the text. Chapter 18 covers financial aspects of business formation and growth and introduces students to business valuation concepts for both private and public companies. The discussions in this chapter integrate the investment and financing concepts discussed in parts 4 and 5 to provide students with a more complete picture of how all the financial concepts fit together. Chapter 19 covers concepts related to strategic financial planning.

Part 7 introduces students to some important issues that managers must deal with in applying the concepts covered in the text to real-world problems. Chapter 20 introduces call and put options and discusses how they relate to investment and financing decisions. It explains, at an accessible level, the idea behind real options and why traditional NPV analysis does not take such options into account. The chapter also discusses agency costs of debt and equity and the implications of these costs for investment and financing decisions. Finally, chapter 20 discusses the use of options in risk management. Lecturers can cover the topics in chapter 20 near the end of the course or insert them at the appropriate points in parts 4 and 5. Chapter 21 examines how international considerations affect the application of concepts covered in the book.

Unique chapters

Chapter on business formation, growth and valuation

We wrote chapter 18 in response to students' heightened interest in new business formation (entrepreneurship) and in order to draw together, in a comprehensive way, the key concepts from capital budgeting, working capital management and financial policy. This capstone chapter provides an overview of practical finance issues associated with forecasting cash flows and capital requirements for a new business, preparing a business plan and business valuation. The discussion of business valuation extends far beyond that found in other corporate finance textbooks.

Chapter on options and corporate finance

Many other corporate finance textbooks have a chapter that introduces students to financial options and how they are valued. This chapter goes further. It provides a focused discussion of the different types of non-financial options that are of concern to financial managers, including real options and their effect on project analysis, how option-like pay-off functions faced by shareholders, bondholders and managers affect agency relationships, and the use of options in risk management.

Applications at a glance

The real-world examples in *Fundamentals of Corporate Finance*, 2nd edition, have been carefully chosen to include a balance of organisations operating in our region representing a diverse range of relevant product and service industries.

1 Introduction	
Myer	Reviews the reasons managers create company value and finance a company either through debt or equity. Focuses on the value created by Myer's market capitalisation.
2 The financial system and the level of interest rates	
The Reserve Bank of Australia	Discusses how the Reserve Bank of Australia manages monetary policy and the implications this has for economic activity.
3 Financial statements, cash flows and tax	
Qantas	Outlines how Qantas provides additional information in its financial reports in an attempt to better represent its economic reality than that revealed by financial statements prepared under accounting standards.
4 Analysing financial statements	
Restaurant Brands New Zealand Limited and Burger Fuel Worldwide Limited	Introduces the concept of using financial ratios to compare the financial performance of companies of different sizes.
5 The time value of money	
Harvey Norman and The Good Guys	Provides glimpses into the different financing options about which retail consumers must make decisions every day, including the analysis of expected cash flows.
6 Discounted cash flows and valuation	
Wesfarmers' acquisition of Coles	Discusses the Coles bidding war and the question: What is a company worth? Examines the discounting of future cash flows and provides the tools that help in answering this key question.
7 Risk and return	
The mining boom	Mining is an excellent example of an industry in which risk and return are at the forefront of economic thought. This example discusses the mining boom, but also exposes the underbelly of its reliance on commodity prices.
8 Bond valuation and the structure of interest rates	
The European Union debt crisis	The Greek sovereign debt crisis has highlighted the major risk faced by bondholders – the risk of default.
9 Share valuation	
Rise and fall of share prices	Investigates the ASX All Ordinaries Index and raises the question: How can one tell if the market price of a share reflects its value?
10 The fundamentals of capital budgeting	

Patties Foods	Reveals some of the capital budgeting decisions Patties Foods has made in recent years to maintain its competitive advantage.

11 Cash flows and capital budgeting

Pie Face	Capital budgeting decisions and cash flows are important for an expanding business such as Pie Face and these concepts would be examined as it decides to open new stores.

12 Evaluating project economics and capital rationing

The mining industry	Mining is an industry in which project analysis is crucial in evaluating the appropriate level of capital investment.

13 The cost of capital

Eureka Tower, Melbourne	How does one estimate what it would cost to finance a project such as the Eureka Tower? This example initiates the discussion on how to take account of the cost of capital in financing decisions.

14 Working capital management

Whitehaven Coal Limited	In an environment of increasing expansion of its coal mines, Whitehaven Coal Limited found it was important to effectively manage its working capital.

15 How companies raise capital

Facebook	Describes how Facebook raised capital through an initial public offering.

16 Capital structure policy

PKF — chartered accountants and business advisers	Discusses why it is vital that companies have the right capital structure mix for their business.

17 Dividends and dividend policy

Commonwealth Bank of Australia	Examines the recent dividends paid out by one of Australia’s largest financial institutions.

18 Business formation, growth and valuation

Jetstar Hong Kong	Reviews the joint venture arrangement between Qantas and China Eastern, which resulted in the formation of Jetstar Hong Kong.

19 Strategic financial planning and forecasting

Woolworths online sales	Examines the importance of financial planning and forecasting to ensure that the business is making decisions to remain viable in a competitive and evolving marketplace.

20 Options and corporate finance

BHP Billiton —Olympic Dam mine	Reviews the options open to BHP Billiton in relation to the Olympic Dam mine project.

21 International financial management

The mining industry	Relates how the Australian mining industry can use its resources and expertise to expand into Africa.

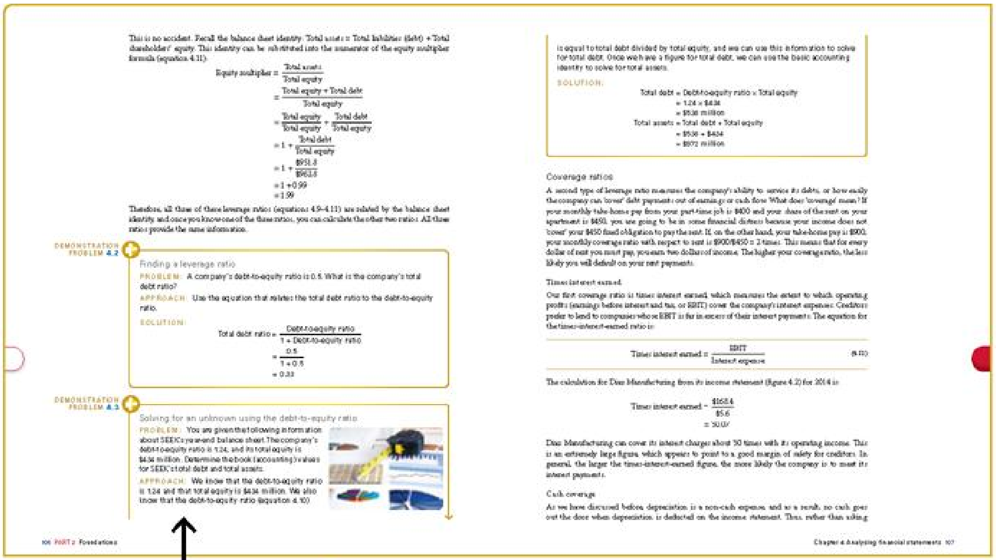
How to Use this Book

Fundamentals of corporate finance, 2nd edition, has been designed with you — the student — in mind. The design is our attempt to provide you with a book that both communicates the subject matter and will facilitate learning. We have tried to accomplish these goals through the following elements.

Chapter scene setter

Each chapter begins with a vignette that describes a real company application. The vignettes illustrate concepts that will be presented in the chapter and are meant to heighten student interest, motivate learning and demonstrate the real-life relevance of the material in the chapter.

Learning objectives The opening vignette is accompanied by learning objectives that identify the most important material for students to understand while reading the chapter. At the end of the chapter, the summary of learning objectives summarises the chapter content in the context of the learning objectives.



This is no accident. Recall the balance sheet identity: Total assets = Total liabilities (debt) + Total shareholders' equity. This identity can be substituted into the numerator of the equity multiplier formula (equation 4.11):

$$\begin{aligned}\text{Equity multiplier} &= \frac{\text{Total assets}}{\text{Total equity}}\\ &= \frac{\text{Total equity} + \text{Total debt}}{\text{Total equity}}\\ &= \frac{\text{Total equity}}{\text{Total equity}} + \frac{\text{Total debt}}{\text{Total equity}}\\ &= 1 + \frac{\text{Total debt}}{\text{Total equity}}\\ &= 1 + \frac{\$951.8}{\$962.8}\\ &= 1 + 0.99\\ &= 1.99\end{aligned}$$

Therefore, all three of these leverage ratios (equations 4.9–4.11) are related by the balance sheet identity and once you know one of the three ratios, you can calculate the other two ratios. All three ratios provide the same information.

DEMONSTRATION PROBLEM 4.2

Finding a leverage ratio

PROBLEM: A company's debt-to-equity ratio is 0.5. What is the company's total debt ratio?

APPROACH: Use the equation that relates the total debt ratio to the debt-to-equity ratio.

SOLUTION:

$$\begin{aligned}\text{Total debt ratio} &= \frac{\text{Debt-to-equity ratio}}{1 + \text{Debt-to-equity ratio}}\\ &= \frac{0.5}{1 + 0.5}\\ &= 0.33\end{aligned}$$

DEMONSTRATION PROBLEM 4.3

Solving for an unknown using the debt-to-equity ratio

PROBLEM: You are given the following information about SEEK's year-end balance sheet. The company's debt-to-equity ratio is 1.24, and its total equity is \$434 million. Determine the book (accounting) values for SEEK's total debt and total assets.

APPROACH: We know that the debt-to-equity ratio is 1.24 and that total equity is \$434 million. We also know that the debt-to-equity ratio (equation 4.10) is equal to total debt divided by total equity, and we can use this information to solve for total debt. Once we have a figure for total debt, we can use the basic accounting identity to solve for total assets.

SOLUTION:

$$\begin{aligned}\text{Total debt} &= \text{Debt-to-equity ratio} \times \text{Total equity}\\ &= 1.24 \times \$434\\ &= \$538 \text{ million}\\ \text{Total assets} &= \text{Total debt} + \text{Total equity}\\ &= \$538 + \$434\\ &= \$972 \text{ million}\end{aligned}$$

Coverage ratios

A second type of leverage ratio measures the company's ability to service its debts, or how easily the company can 'cover' debt payments out of earnings or cash flow. What does 'coverage' mean? If your monthly take-home pay from your part-time job is \$400 and your share of the rent on your apartment is \$450, you are going to be in some financial distress because your income does not 'cover' your \$450 fixed obligation to pay the rent. If, on the other hand, your take-home pay is \$900, your monthly coverage ratio with respect to rent is \$900/\$450 = 2 times. This means that for every dollar of rent you must pay, you earn two dollars of income. The higher your coverage ratio, the less likely you will default on your rent payments.

Times interest earned

Our first coverage ratio is times interest earned, which measures the extent to which operating profits (earnings before interest and tax, or EBIT) cover the company's interest expenses. Creditors prefer to lend to companies whose EBIT is far in excess of their interest payments. The equation for the times-interest-earned ratio is:

$$\text{Times interest earned} = \frac{\text{EBIT}}{\text{Interest expense}} \quad (4.12)$$

The calculation for Diaz Manufacturing from its income statement (figure 4.2) for 2014 is:

$$\begin{aligned}\text{Times interest earned} &= \frac{\$168.4}{\$5.6}\\ &= 30.07\end{aligned}$$

Diaz Manufacturing can cover its interest charges about 30 times with its operating income. This is an extremely large figure, which appears to point to a good margin of safety for creditors. In general, the larger the times-interest-earned figure, the more likely the company is to meet its interest payments.

Cash coverage

As we have discussed before, depreciation is a non-cash expense and as a result, no cash goes out the door when depreciation is deducted on the income statement. Thus, rather than asking

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DEMONSTRATION PROBLEM

Along with a generous number of in-text examples, most chapters include several demonstration problems. These demonstrations contain quantitative problems with step-by-step solutions to help students better understand how to apply their intuition and analytical skills to solve important problems. By including these exercises, we provide students with additional practice in the application of the concepts, tools and methods that are discussed in the text.

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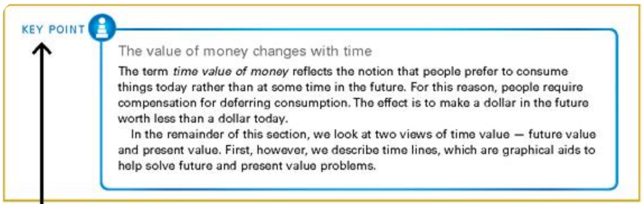


KEY POINT

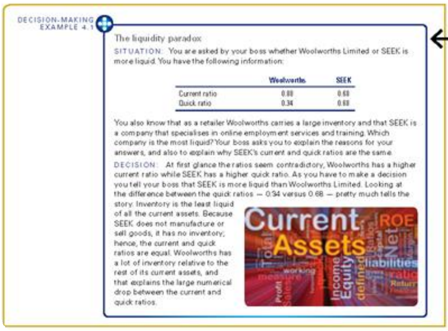
The value of money changes with time

The term *time value of money* reflects the notion that people prefer to consume things today rather than at some time in the future. For this reason, people require compensation for deferring consumption. The effect is to make a dollar in the future worth less than a dollar today.

In the remainder of this section, we look at two views of time value — future value and present value. First, however, we describe time lines, which are graphical aids to help solve future and present value problems.

KEY POINT

Students must have an intuitive understanding of a number of important principles and concepts to successfully master the finance curriculum. Throughout the book, we emphasise these important concepts by presenting them in key point boxes. These boxes provide a statement of an important finance concept, such as the relation between risk and expected returns, along with an intuitive example or explanation to help the student 'get' the concept. These boxes help the students develop finance intuition. Collectively the key point boxes cover the most important concepts in corporate finance.



DECISION-MAKING EXAMPLE 4.1

The liquidity paradox

SITUATION: You are asked by your boss whether Woolworths Limited or SEEK is more liquid. You have the following information:

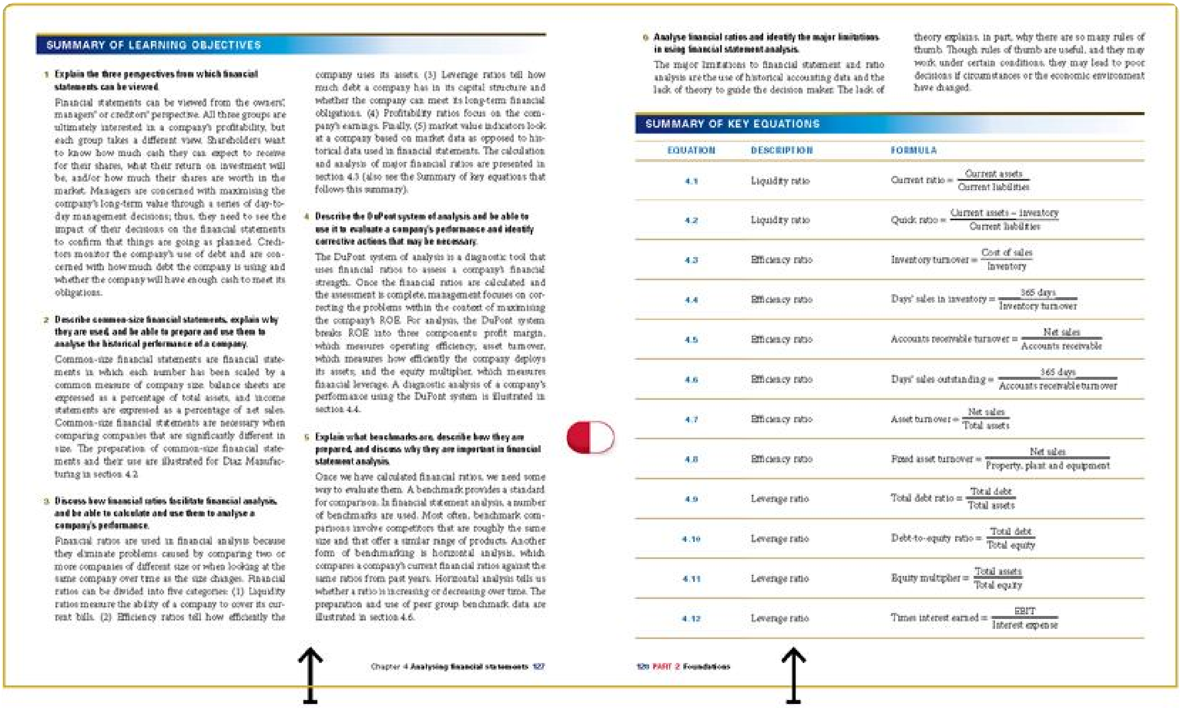
	Woolworths	SEEK
Current ratio	0.88	0.68
Quick ratio	0.34	0.68

You also know that as a retailer Woolworths carries a large inventory and that SEEK is a company that specialises in online employment services and training. Which company is the most liquid? Your boss asks you to explain the reasons for your answers, and also to explain why SEEK's current and quick ratios are the same.

DECISION: At first glance the ratios seem contradictory. Woolworths has a higher current ratio while SEEK has a higher quick ratio. As you have to make a decision you tell your boss that SEEK is more liquid than Woolworths Limited. Looking at the difference between the quick ratios — 0.34 versus 0.68 — pretty much tells the story. Inventory is the least liquid of all the current assets. Because SEEK does not manufacture or sell goods, it has no inventory; hence, the current and quick ratios are equal. Woolworths has a lot of inventory relative to the rest of its current assets, and that explains the large numerical drop between the current and quick ratios.

DECISION-MAKING EXAMPLE

Throughout the book, we emphasise the role of the financial manager as a decision maker. To that end, nearly every chapter includes decision-making examples. These examples, which emphasise the decision-making process rather than computation, provide students with experience in financial decision making. Each decision-making example outlines a scenario and asks the student to make a decision based on the information presented.



SUMMARY OF LEARNING OBJECTIVES

1 Explain the three perspectives from which financial statements can be viewed.

Financial statements can be viewed from the owners', managers' or creditors' perspective. All three groups are ultimately interested in a company's profitability, but each group takes a different view. Shareholders want to know how much cash they can expect to receive for their shares, what their return on investment will be, and/or how much their shares are worth in the market. Managers are concerned with maximising the company's long-term value through a series of day-to-day management decisions; thus, they need to see the impact of their decisions on the financial statements to confirm that things are going as planned. Creditors monitor the company's use of debt and are concerned with how much debt the company is using and whether the company will have enough cash to meet its obligations.

2 Describe common-size financial statements, explain why they are used, and be able to prepare and use them to analyse the historical performance of a company.

Common-size financial statements are financial statements in which each number has been scaled by a common measure of company size: balance sheets are expressed as a percentage of total assets, and income statements are expressed as a percentage of net sales. Common-size financial statements are necessary when comparing companies that are significantly different in size. The preparation of common-size financial statements and their use are illustrated for Diaz Manufacturing in section 4.2.

3 Discuss how financial ratios facilitate financial analysis, and be able to calculate and use them to analyse a company's performance.

Financial ratios are used in financial analysis because they eliminate problems caused by comparing two or more companies of different size or when looking at the same company over time as the size changes. Financial ratios can be divided into five categories: (1) Liquidity ratios measure the ability of a company to cover its current bills. (2) Efficiency ratios tell how efficiently the company uses its assets. (3) Leverage ratios tell how much debt a company has in its capital structure and whether the company can meet its long-term financial obligations. (4) Profitability ratios focus on the company's earnings. Finally, (5) market value indicators look at a company based on market data as opposed to historical data used in financial statements. The calculation and analysis of major financial ratios are presented in section 4.3 (also see the Summary of key equations that follows this summary).

4 Describe the DuPont system of analysis and be able to use it to evaluate a company's performance and identify corrective actions that may be necessary.

The DuPont system of analysis is a diagnostic tool that uses financial ratios to assess a company's financial strength. Once the financial ratios are calculated and the assessment is complete, management focuses on correcting the problems within the context of maximising the company's ROE. For analysis, the DuPont system breaks ROE into three components: profit margin, which measures operating efficiency; asset turnover, which measures how efficiently the company deploys its assets; and the equity multiplier, which measures financial leverage. A diagnostic analysis of a company's performance using the DuPont system is illustrated in section 4.4.

5 Explain what benchmarks are, describe how they are prepared, and discuss why they are important in financial statement analysis.

Once we have calculated financial ratios, we need some way to evaluate them. A benchmark provides a standard for comparison. In financial statement analysis, a number of benchmarks are used. Most often, benchmark comparisons involve competitors that are roughly the same size and that offer a similar range of products. Another form of benchmarking is horizontal analysis, which compares a company's current financial ratios against the same ratios from past years. Horizontal analysis tells us whether a ratio is increasing or decreasing over time. The preparation and use of peer group benchmark data are illustrated in section 4.6.

6 Analyse financial ratios and identify the major limitations in using financial statement analysis.

The major limitations to financial statement and ratio analysis are the use of historical accounting data and the lack of theory to guide the decision maker. The lack of theory explains, in part, why there are so many rules of thumb. Though rules of thumb are useful, and they may work under certain conditions, they may lead to poor decisions if circumstances or the economic environment have changed.

SUMMARY OF KEY EQUATIONS

EQUATION	DESCRIPTION	FORMULA
4.1	Liquidity ratio	$\text{Current ratio} = \dfrac{\text{Current assets}}{\text{Current liabilities}}$
4.2	Liquidity ratio	$\text{Quick ratio} = \dfrac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$
4.3	Efficiency ratio	$\text{Inventory turnover} = \dfrac{\text{Cost of sales}}{\text{Inventory}}$
4.4	Efficiency ratio	$\text{Days' sales in inventory} = \dfrac{\text{365 days}}{\text{Inventory turnover}}$
4.5	Efficiency ratio	$\text{Accounts receivable turnover} = \dfrac{\text{Net sales}}{\text{Accounts receivable}}$
4.6	Efficiency ratio	$\text{Days' sales outstanding} = \dfrac{\text{365 days}}{\text{Accounts receivable turnover}}$
4.7	Efficiency ratio	$\text{Asset turnover} = \dfrac{\text{Net sales}}{\text{Total assets}}$
4.8	Efficiency ratio	$\text{Fixed asset turnover} = \dfrac{\text{Net sales}}{\text{Property, plant and equipment}}$
4.9	Leverage ratio	$\text{Total debt ratio} = \dfrac{\text{Total debt}}{\text{Total assets}}$
4.10	Leverage ratio	$\text{Debt-to-equity ratio} = \dfrac{\text{Total debt}}{\text{Total equity}}$
4.11	Leverage ratio	$\text{Equity multiplier} = \dfrac{\text{Total assets}}{\text{Total equity}}$
4.12	Leverage ratio	$\text{Times interest earned} = \dfrac{\text{EBIT}}{\text{Interest expense}}$

Summary of learning objectives and key equations At the end of the chapter, you will find a summary of the key chapter content related to each of the learning objectives listed at the beginning of the chapter, as well as an exhibit listing the key equations in the chapter.

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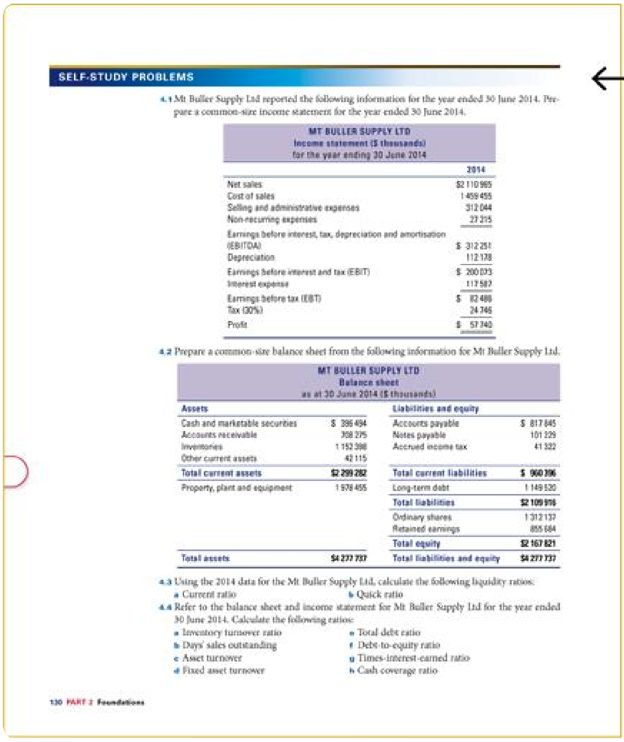

SELF-STUDY PROBLEMS

4.1 Mt Buller Supply Ltd reported the following information for the year ended 30 June 2014. Prepare a common-size income statement for the year ended 30 June 2014.

MT BULLER SUPPLY LTD
Income statement ($ thousands)
for the year ending 30 June 2014

	2014
Net sales	$2 110 965
Cost of sales	1 459 455
Selling and administrative expenses	312 044
Non-recurring expenses	27 215
Earnings before interest, tax, depreciation and amortisation (EBITDA)	$ 312 251
Depreciation	112 178
Earnings before interest and tax (EBIT)	$ 200 073
Interest expense	117 587
Earnings before tax (EBT)	$ 82 486
Tax (30%)	24 746
Profit	$ 57 740

4.2 Prepare a common-size balance sheet from the following information for Mt Buller Supply Ltd.

MT BULLER SUPPLY LTD
Balance sheet
as at 30 June 2014 ($ thousands)

Assets		Liabilities and equity	
Cash and marketable securities	$ 396 494	Accounts payable	$ 817 845
Accounts receivable	708 275	Notes payable	101 229
Inventories	1 152 398	Accrued income tax	41 322
Other current assets	42 115		
Total current assets	**$2 299 282**	**Total current liabilities**	**$ 960 396**
Property, plant and equipment	1 978 455	Long-term debt	1 149 520
		Total liabilities	**$2 109 916**
		Ordinary shares	1 312 137
		Retained earnings	855 684
		Total equity	**$2 167 821**
Total assets	**$4 277 737**	**Total liabilities and equity**	**$4 277 737**

4.3 Using the 2014 data for the Mt Buller Supply Ltd, calculate the following liquidity ratios:

a Current ratio
b Quick ratio

4.4 Refer to the balance sheet and income statement for Mt Buller Supply Ltd for the year ended 30 June 2014. Calculate the following ratios:

a Inventory turnover ratio
b Days' sales outstanding
c Asset turnover
d Fixed asset turnover
e Total debt ratio
f Debt-to-equity ratio
g Times-interest-earned ratio
h Cash coverage ratio

Self-study problems Five problems similar to the in-text demonstration problems follow the summary and provide additional examples with step-by-step solutions to help students further develop their problem-solving and computational skills. Solutions are found in appendix B.

Critical thinking questions At least ten qualitative questions, called critical thinking questions, require students to think through their understanding of key concepts and apply those concepts to a problem.

Questions and problems
The questions and problems, numbering 30 to 40 per chapter, are primarily quantitative and are classified as Basic, Moderate or Challenging.

4.5 Refer to the balance sheet and income statement for Mt Buller Supply Ltd for the year ended 30 June 2014. Use the DuPont equation to calculate the return on equity (ROE). In the process, calculate the following ratios: profit margin, asset turnover, equity multiplier, EBIT return on assets, and return on assets.

CRITICAL THINKING QUESTIONS

4.1 What does it mean when a company's return on assets (ROA) is equal to its return on equity (ROE)?
4.2 Why is too much liquidity not a good thing?
4.3 Inventory is excluded when the quick ratio or acid-test ratio is calculated because inventory is the most difficult current asset to convert to cash without loss of value. What types of inventory are likely to be most easily converted to cash?
4.4 What does a very high inventory turnover ratio signify?
4.5 How would one explain a low receivables turnover ratio?
4.6 What additional information does the fixed asset turnover ratio provide over the asset turnover ratio? For which industries does it carry greater significance?
4.7 How does financial leverage help shareholders?
4.8 Why do banks have a low ROA (relative to other industries) but a high ROE?
4.9 Why is the ROE a more appropriate proxy of wealth maximisation for smaller companies than for larger ones?
4.10 Why is it not enough for an analyst to look at just the short-term and long-term debt on a company's balance sheet?

QUESTIONS AND PROBLEMS • BASIC •• MODERATE ••• CHALLENGING

• BASIC

4.1 **Liquidity ratios:** Explain why the quick ratio or acid-test ratio is a better measure of a company's liquidity than the current ratio.
4.2 **Liquidity ratios:** Flying Penguins Ltd has total current assets of $11 845 175, current liabilities of $5 311 020, and a quick ratio of 0.89. What is its level of inventory?
4.3 **Efficiency ratio:** If Newton Manufacturers has an accounts receivable turnover of 4.8 times and net sales of $7 812 379, what is its level of receivables?
4.4 **Efficiency ratio:** Bunyip Ltd has a gross profit margin of 33.7 per cent, sales of $47 112 365, and inventories of $14 595 435. What is its inventory turnover ratio?
4.5 **Efficiency ratio:** Sorenson Ltd has sales of $3 112 489, a gross profit margin of 23.1 per cent and inventory of $833 145. What are the company's inventory turnover ratio and days' sales in inventory?
4.6 **Leverage ratios:** U-Beauty Ski Ltd has total assets of $422 235 811 and a debt ratio of 29.5 per cent. Calculate the company's debt-to-equity ratio and the equity multiplier.
4.7 **Leverage ratios:** Norton Ltd has a debt-to-equity ratio of 1.65, ROA of 11.3 per cent, and total equity of $1 322 796. What are the company's equity multiplier, debt ratio and ROE?
4.8 **DuPont equation:** Queenstown Timber Ltd has the following relationships:
Sales/Total assets = 2.23; ROA = 9.69%; ROE = 16.4%
What are Queenstown's profit margin and debt ratio?
4.9 **Benchmark analysis:** List the ways a company's financial manager can benchmark the company's own performance.
4.10 **Benchmark analysis:** Trademark Ltd's financial manager collected the following information for its peer group so that it can compare its own performance against that of its peers.

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Text

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Fundamentals of corporate finance, 2nd edition, is supported by an extensive teaching and learning resource package. Driven by the same beliefs and philosophy as the textbook, the supplement package provides a supportive and well-integrated learning and teaching system. With its emphasis on interactive exercises and technology-assisted learning, the package will encourage students to take an active role in the course and prepare them for financial decision making in a real-world context.

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- Online assessment materials in Blackboard and Moodle format for easy upload and assignment creation.
- A PowerPoint presentation developed by Sarod Khandaker and Chee Jin Yap (both from Swinburne University) outlining key concepts from each chapter and containing media, data, art and colourful figures from the text. This presentation can be customised or modified to suit the particular requirements of any instructor.
- Videos and accompanying cases and activities to highlight management theory in practice.

Selected abbreviations and notation