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Westerfield

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Twelfth Edition

FUNDAMENTALS OF Corporate Finance

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Fundamentals of CORPORATE FINANCE

Twelfth Edition

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To Stephen A. Ross and family

Our great friend, colleague, and coauthor Steve Ross passed away on March 3, 2017, while we were working on this edition of *Fundamentals of Corporate Finance*. Steve's influence on our textbook is seminal, deep, and enduring, and we will miss him greatly. We are confident that on the foundation of Steve's lasting and invaluable contributions, our textbook will continue to reach the highest level of excellence that we all aspire to.

R.W.W. B.D.J.

About the Authors

STEPHEN A. ROSS

Stephen A. Ross was the Franco Modigliani Professor of Finance and Economics at the Sloan School of Management, Massachusetts Institute of Technology. One of the most widely published authors in finance and economics, Professor Ross was widely recognized for his work in developing the Arbitrage Pricing Theory and his substantial contributions to the discipline through his research in signaling, agency theory, option pricing, and the theory of the term structure of interest rates, among other topics. A past president of the American Finance Association, he also served as an associate editor of several academic and practitioner journals. He was a trustee of CalTech. He died suddenly in March of 2017.

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Randolph W. Westerfield is Dean Emeritus and the Charles B. Thornton Professor in Finance Emeritus of the University of Southern California's Marshall School of Business. Professor Westerfield came to USC from the Wharton School, University of Pennsylvania, where he was the chairman of the finance department and a member of the finance faculty for 20 years. He is a member of the board of trustees of Oaktree Capital mutual funds. His areas of expertise include corporate financial policy, investment management, and stock market price behavior.

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Bradford D. Jordan is Professor of Finance and holder of the duPont Endowed Chair in Banking and Financial Services at the University of Kentucky. He has a long-standing interest in both applied and theoretical issues in corporate finance and has extensive experience teaching all levels of corporate finance and financial management policy. Professor Jordan has published numerous articles on issues such as cost of capital, capital structure, and the behavior of security prices. He is a past president of the Southern Finance Association, and he is coauthor of *Fundamentals of Investments: Valuation and Management*, 8e, a leading investments text, also published by McGraw-Hill.

Preface from the Authors

When the three of us decided to write a book, we were united by one strongly held principle: Corporate finance should be developed in terms of a few integrated, powerful ideas. We believed that the subject was all too often presented as a collection of loosely related topics, unified primarily by virtue of being bound together in one book, and we thought there must be a better way.

One thing we knew for certain was that we didn't want to write a "me-too" book. So, with a lot of help, we took a hard look at what was truly important and useful. In doing so, we were led to eliminate topics of dubious relevance, downplay purely theoretical issues, and minimize the use of extensive and elaborate calculations to illustrate points that are either intuitively obvious or of limited practical use.

As a result of this process, three basic themes became our central focus in writing *Fundamentals of Corporate Finance:*

AN EMPHASIS ON INTUITION

We always try to separate and explain the principles at work on a commonsense, intuitive level before launching into any specifics. The underlying ideas are discussed first in very general terms and then by way of examples that illustrate in more concrete terms how a financial manager might proceed in a given situation.

A UNIFIED VALUATION APPROACH

We treat net present value (NPV) as the basic concept underlying corporate finance. Many texts stop well short of consistently integrating this important principle. The most basic and important notion, that NPV represents the excess of market value over cost, often is lost in an overly mechanical approach that emphasizes computation at the expense of comprehension. In contrast, every subject we cover is firmly rooted in valuation, and care is taken throughout to explain how particular decisions have valuation effects.

A MANAGERIAL FOCUS

Students shouldn't lose sight of the fact that financial management concerns management. We emphasize the role of the financial manager as decision maker, and we stress the need for managerial input and judgment. We consciously avoid "black box" approaches to finance, and, where appropriate, the approximate, pragmatic nature of financial analysis is made explicit, possible pitfalls are described, and limitations are discussed.

In retrospect, looking back to our 1991 first edition IPO, we had the same hopes and fears as any entrepreneurs. How would we be received in the market? At the time, we had no idea that 26 years later, we would be working on a twelfth edition. We certainly never dreamed that in those years we would work with friends and colleagues from around the world to create country-specific Australian, Canadian, and South African editions, an International edition, Chinese, French, Polish, Portuguese, Thai, Russian, Korean, and Spanish language editions, and an entirely separate book, *Essentials of Corporate Finance*, now in its ninth edition.

Today, as we prepare to once more enter the market, our goal is to stick with the basic principles that have brought us this far. However, based on the enormous amount of feedback we have received from you and your colleagues, we have made this edition and its package even *more flexible* than previous editions. We offer flexibility in coverage, as customized editions of this text can be crafted in any combination through McGraw-Hill's *CREATE* system, and flexibility in pedagogy, by providing a wide variety

of features in the book to help students to learn about corporate finance. We also provide flexibility in package options by offering the most extensive collection of teaching, learning, and technology aids of any corporate finance text. Whether you use only the textbook, or the book in conjunction with our other products, we believe you will find a combination with this edition that will meet your current as well as your changing course needs.

Stephen A. Ross
Randolph W. Westerfield
Bradford D. Jordan

THE TAX CUTS AND JOBS ACT (TCJA) IS INCORPORATED THROUGHOUT ROSS FUNDAMENTALS OF CORPORATE FINANCE, 12E.

There are six primary areas of change and will be reflected in the 12th edition:

1. Corporate tax. The new, flat-rate 21 percent corporate rate is discussed and compared to the old progressive system. The new rate is used throughout the text in examples and problems. Entities other than C corporations still face progressive taxation, so the discussion of marginal versus average tax rates remains relevant and is retained.
2. Bonus depreciation. For a limited time, businesses can take a 100 percent depreciation charge the first year for most non-real estate, MACRS-qualified investments. This "bonus depreciation" ends in a few years and MACRS returns, so the MACRS material remains relevant and is retained. The impact of bonus depreciation is illustrated in various problems.
3. Limitations on interest deductions. The amount of interest that may be deducted for tax purposes is limited. Interest that cannot be deducted can be carried forward to future tax years (but not carried back; see next).
4. Carrybacks. Net operating loss (NOL) carrybacks have been eliminated and NOL carryforward deductions are limited in any one tax year.
5. Dividends received tax break. The tax break on dividends received by a corporation has been reduced, meaning that the portion subject to taxation has increased.
6. Repatriation. The distinction between U.S. and non-U.S. profits has been essentially eliminated. All "overseas" assets, both liquid and illiquid, are subject to a one-time "deemed" tax.

With the 12e we've also included coverage of:

- Clawbacks and deferred compensation
- Inversions
- Negative interest rates

- NYSE market operations
- Direct Listings and Cryptocurrency Initial Coin Offerings (ICOs)
- Regulation CF
- Brexit
- Repatriation
- Changes in lease accounting

Coverage

This book was designed and developed explicitly for a first course in business or corporate finance, for both finance majors and non-majors alike. In terms of background or prerequisites, the book is nearly self-contained, assuming some familiarity with basic algebra and accounting concepts, while still reviewing important accounting principles very early on. The organization of this text has been developed to give instructors the flexibility they need.

The following grid presents, for each chapter, some of the most significant features as well as a few selected chapter highlights of the 12th edition of *Fundamentals*. Of course, in every chapter, opening vignettes, boxed features, in-chapter illustrated examples using real companies, and end-of-chapter material have been thoroughly updated as well.

Chapters	Selected Topics of Interest	Benefits to You
PART 1 Overview of Corporate Finance		
CHAPTER 1 Introduction to Corporate Finance	Goal of the firm and agency problems.	Stresses value creation as the most fundamental aspect of management and describes agency issues that can arise.
	Ethics, financial management, and executive compensation.	Brings in real-world issues concerning conflicts of interest and current controversies surrounding ethical conduct and management pay.
	Sarbanes-Oxley.	Up-to-date discussion of Sarbanes-Oxley and its implications and impact.
	New: Clawbacks and deferred compensation.	Discusses new rules on bonus clawbacks and deferred compensation.
	Minicase: The McGee Cake Company.	Examines the choice of organization form for a small business.
CHAPTER 2 Financial Statements, Taxes, and Cash Flow	Cash flow vs. earnings.	Clearly defines cash flow and spells out the differences between cash flow and earnings.
	Market values vs. book values.	Emphasizes the relevance of market values over book values.
	Brief discussion of average corporate tax rates.	Highlights the variation in corporate tax rates across industries in practice.
	New: Inversions.	Discusses the controversial issue of mergers that are also tax inversions.
	Minicase: Cash Flows and Financial.	Reinforces key cash flow concepts in a small business setting.
	Statements at Sunset Boards, Inc.	

Chapters	Selected Topics of Interest	Benefits to You
PART 2 Financial Statements and Long-Term Financial Planning		
CHAPTER 3 Working with Financial Statements	Expanded DuPont analysis.	Expands the basic DuPont equation to better explore the interrelationships between operating and financial performance.
	DuPont analysis for real companies using data from S&P *Market Insight.*	Analysis shows students how to get and use real-world data, thereby applying key chapter ideas.
	Ratio and financial statement analysis using smaller firm data.	Uses firm data from *RMA* to show students how to actually get and evaluate financial statement benchmarks.
	Understanding financial statements.	Thorough coverage of standardized financial statements and key ratios.
	The enterprise value-EBITDA ratio.	Defines enterprise value (EV) and discusses the widely used EV-EBITDA ratio.
	Minicase: Ratio Analysis at S&S Air, Inc.	Illustrates the use of ratios and some pitfalls in a small business context.
CHAPTER 4 Long-Term Financial Planning and Growth	Expanded discussion of sustainable growth calculations.	Illustrates the importance of financial planning in a small firm.
	Explanation of alternative formulas for sustainable and internal growth rates.	Explanation of growth rate formulas clears up a common misunderstanding about these formulas and the circumstances under which alternative formulas are correct.
	Thorough coverage of sustainable growth as a planning tool.	Provides a vehicle for examining the interrelationships between operations, financing, and growth.
	Long-range financial planning.	Covers the percentage of sales approach to creating pro forma statements.
	Minicase: Planning for Growth at S&S Air.	Discusses the importance of a financial plan and capacity utilization for a small business.
PART 3 Valuation of Future Cash Flows		
CHAPTER 5 Introduction to Valuation: The Time Value of Money	First of two chapters on time value of money.	Relatively short chapter introduces just the basic ideas on time value of money to get students started on this traditionally difficult topic.
CHAPTER 6 Discounted Cash Flow Valuation	Growing annuities and perpetuities.	Covers more advanced time value topics with numerous examples, calculator tips, and Excel spreadsheet exhibits. Contains many real-world examples.
	Second of two chapters on time value of money.	Explores the financial pros and cons of pursuing an MBA degree.
	Minicase: The MBA Decision.	

Chapters	Selected Topics of Interest	Benefits to You
CHAPTER 7 Interest Rates and Bond Valuation	*New:* Negative interest rates.	New chapter opener explores the recent phenomenon of negative interest on government bonds.
	Bond valuation.	Complete coverage of bond valuation and bond features.
	Interest rates.	Discusses real versus nominal rates and the determinants of the term structure.
	"Clean" vs. "dirty" bond prices and accrued interest.	Clears up the pricing of bonds between coupon payment dates and also bond market quoting conventions.
	TRACE system and transparency in the corporate bond market.	Up-to-date discussion of new developments in fixed income with regard to price, volume, and transactions reporting.
	"Make-whole" call provisions.	Up-to-date discussion of a relatively new type of call provision that has become very common.
	Islamic finance.	Provides basics of some important concepts in Islamic finance.
	Minicase: Financing S&S Air's Expansion Plans with a Bond Issue.	Discusses the issues that come up in selling bonds to the public.
CHAPTER 8 Stock Valuation	Stock valuation.	Thorough coverage of constant and non-constant growth models.
	New: NYSE market operations.	Up-to-date description of major stock market operations.
	Valuation using multiples.	Illustrates using PE and price/sales ratios for equity valuation.
	Minicase: Stock Valuation at Ragan, Inc.	Illustrates the difficulties and issues surrounding small business valuation.
PART 4 Capital Budgeting		
CHAPTER 9 Net Present Value and Other Investment Criteria	First of three chapters on capital budgeting.	Relatively short chapter introduces key ideas on an intuitive level to help students with this traditionally difficult topic.
	NPV, IRR, payback, discounted payback, MIRR, and accounting rate of return.	Consistent, balanced examination of advantages and disadvantages of various criteria.
	Minicase: Bullock Gold Mining.	Explores different capital budgeting techniques with nonstandard cash flows.
CHAPTER 10 Making Capital Investment Decisions	Project cash flow.	Thorough coverage of project cash flows and the relevant numbers for a project analysis.
	Alternative cash flow definitions.	Emphasizes the equivalence of various formulas, thereby removing common misunderstandings.
	Special cases of DCF analysis.	Considers important applications of chapter tools.
	Minicase: Conch Republic Electronics, Part 1.	Analyzes capital budgeting issues and complexities.
CHAPTER 11 Project Analysis and Evaluation	Sources of value.	Stresses the need to understand the economic basis for value creation in a project.
	Scenario and sensitivity "what-if" analyses.	Illustrates how to actually apply and interpret these tools in a project analysis.
	Break-even analysis.	Covers cash, accounting, and financial break-even levels.
	Minicase: Conch Republic Electronics, Part 2.	Illustrates the use of sensitivity analysis in capital budgeting.

Chapters	Selected Topics of Interest	Benefits to You
PART 5 Risk and Return		
CHAPTER 12 Some Lessons from Capital Market History	Expanded discussion of geometric vs. arithmetic returns.	Discusses calculation and interpretation of geometric returns. Clarifies common misconceptions regarding appropriate use of arithmetic vs. geometric average returns.
	Capital market history.	Extensive coverage of historical returns, volatilities, and risk premiums.
	Market efficiency.	Efficient markets hypothesis discussed along with common misconceptions.
	The equity risk premium.	Section discusses the equity premium puzzle and latest international evidence.
	The 2008 experience.	Section on the stock market turmoil of 2008.
	Minicase: A Job at S&S Air.	Discusses selection of investments for a 401(k) plan.
CHAPTER 13 Return, Risk, and the Security Market Line	Diversification and systematic and unsystematic risk.	Illustrates basics of risk and return in a straightforward fashion.
	Beta and the security market line.	Develops the security market line with an intuitive approach that bypasses much of the usual portfolio theory and statistics.
	Minicase: The Beta for Colgate-Palmolive.	Detailed discussion of beta estimation.
PART 6 Cost of Capital and Long-Term Financial Policy		
CHAPTER 14 Cost of Capital	Cost of capital estimation.	Contains a complete, web-based illustration of cost of capital for a real company.
	Geometric vs. arithmetic growth rates.	Both approaches are used in practice. Clears up issues surrounding growth rate estimates.
	Firm valuation.	Develops the free cash flow approach to firm valuation.
	Minicase: Cost of Capital for Swan Motors.	Covers pure play approach to cost of capital estimation.
CHAPTER 15 Raising Capital	Dutch auction IPOs.	Explains uniform price auctions.
	New: Regulation CF.	Explains the new Regulation CF for crowdfunding and provides some examples.
	IPO "quiet periods."	Explains the SEC's quiet period rules.
	Rights vs. warrants.	Clarifies the optionlike nature of rights prior to their expiration dates.
	IPO valuation.	Extensive, up-to-date discussion of IPOs, including the 1999–2000 period.
	Minicase: S&S Air Goes Public.	Covers the key parts of the IPO process for a small firm.
CHAPTER 16 Financial Leverage and Capital Structure Policy	Basics of financial leverage.	Illustrates effect of leverage on risk and return.
	Optimal capital structure.	Describes the basic trade-offs leading to an optimal capital structure.
	Financial distress and bankruptcy.	Briefly surveys the bankruptcy process.
	Minicase: Stephenson Real Estate Recapitalization.	Discusses optimal capital structure for a medium-sized firm.

Chapters	Selected Topics of Interest	Benefits to You
CHAPTER 17 Dividends and Payout Policy	Very recent survey evidence on dividend policy.	New survey results show the most important (and least important) factors considered by financial managers in setting dividend policy.
	Effect of new tax laws.	Discusses implications of new, lower dividend and capital gains rates.
	Dividends and dividend policy.	Describes dividend payments and the factors favoring higher and lower payout policies.
	Optimal payout policy.	Extensive discussion of the latest research and survey evidence on dividend policy, including life-cycle theory.
	Stock repurchases.	Thorough coverage of buybacks as an alternative to cash dividends.
	Minicase: Electronic Timing, Inc.	Describes the dividend/share repurchase issue for a small company.
PART 7 Short-Term Financial Planning and Management		
CHAPTER 18 Short-Term Finance and Planning	Operating and cash cycles.	Stresses the importance of cash flow timing.
	Short-term financial planning.	Illustrates creation of cash budgets and potential need for financing.
	Purchase order financing.	Brief discussion of PO financing, which is popular with small and medium-sized firms.
	Minicase: Piepkorn Manufacturing Working Capital Management.	Illustrates the construction of a cash budget and short-term financial plan for a small company.
CHAPTER 19 Cash and Liquidity Management	Float management.	Thorough coverage of float management and potential ethical issues.
	Cash collection and disbursement.	Examination of systems used by firms to handle cash inflows and outflows.
	Minicase: Cash Management at Webb Corporation.	Evaluates alternative cash concentration systems for a small firm.
CHAPTER 20 Credit and Inventory Management	Credit management.	Analysis of credit policy and implementation.
	Inventory management.	Brief overview of important inventory concepts.
	Minicase: Credit Policy at Howlett Industries.	Evaluates working capital issues for a small firm.
PART 8 Topics in Corporate Finance		
CHAPTER 21 International Corporate Finance	Foreign exchange.	Covers essentials of exchange rates and their determination.
	International capital budgeting.	Shows how to adapt basic DCF approach to handle exchange rates.
	Exchange rate and political risk.	Discusses hedging and issues surrounding sovereign risk.
	New: Brexit.	Uses "Brexit" as an illustration of political risk.
	New: Repatriation.	New opener and in-chapter discussion of the immense overseas cash holdings by U.S. corporations.
	Minicase: S&S Air Goes International.	Discusses factors in an international expansion for a small firm.

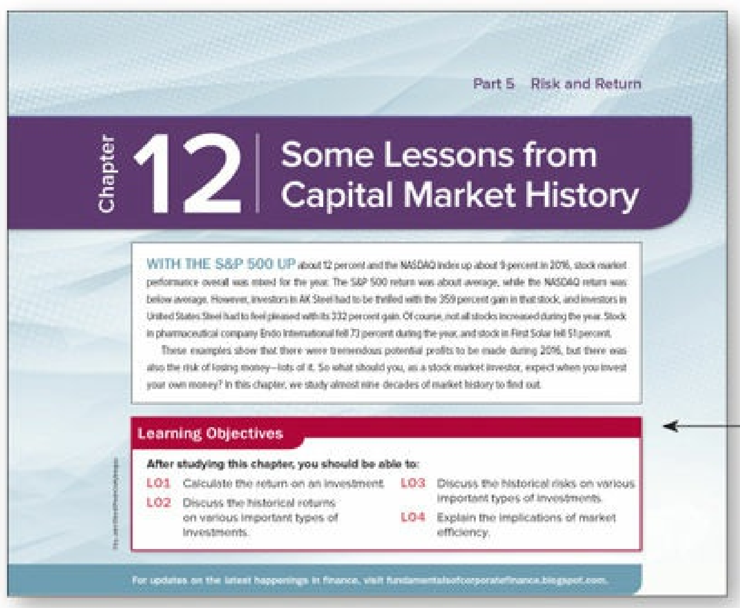
Chapters	Selected Topics of Interest	Benefits to You
CHAPTER 22 Behavioral Finance: Implications for Financial Management	Behavioral finance.	Unique and innovative coverage of the effects of biases and heuristics on financial management decisions. "In Their Own Words" box by Hersh Shefrin.
	Case against efficient markets.	Presents the behavioral case for market inefficiency and related evidence pro and con.
	Minicase: Your 401(k) Account at S&S Air.	Illustrates the considerations to be taken when selecting investment options.
CHAPTER 23 Enterprise Risk Management	Volatility and risk.	Illustrates need to manage risk and some of the most important types of risk.
	Hedging with forwards, options, and swaps.	Shows how many risks can be managed with financial derivatives.
	Minicase: Chatman Mortgage, Inc.	Analyzes hedging of interest rate risk.
CHAPTER 24 Options and Corporate Finance	Stock options, employee stock options, and real options.	Discusses the basics of these important option types.
	Option-embedded securities.	Describes the different types of options found in corporate securities.
	Minicase: S&S Air's Convertible Bond.	Examines security issuance issues for a small firm.
CHAPTER 25 Option Valuation	Put-call parity and Black-Scholes.	Develops modern option valuation and factors influencing option values.
	Options and corporate finance.	Applies option valuation to a variety of corporate issues, including mergers and capital budgeting.
	Minicase: Exotic Cuisines Employee Stock Options.	Illustrates complexities that arise in valuing employee stock options.
CHAPTER 26 Mergers and Acquisitions	Alternatives to mergers and acquisitions.	Covers strategic alliances and joint ventures and why they are important alternatives.
	Defensive tactics.	Expanded discussion of antitakeover provisions.
	Divestitures and restructurings.	Examines important actions such as equity carve-outs, spins-offs, and split-ups.
	Mergers and acquisitions.	Develops essentials of M&A analysis, including financial, tax, and accounting issues.
	Minicase: The Birdie Golf–Hybrid Golf Merger.	Covers small business valuation for acquisition purposes.
CHAPTER 27 Leasing	*New:* Changes in lease accounting.	Discusses upcoming changes in lease accounting rules and the curtailment of "off-balance-sheet" financing.
	Leases and lease valuation.	Examines essentials of leasing, good and bad reasons for leasing, and NPV of leasing.
	Minicase: The Decision to Lease or Buy at Warf Computers.	Covers lease-or-buy and related issues for a small business.

In-Text Study Features

To meet the varied needs of its intended audience, *Fundamentals of Corporate Finance* is rich in valuable learning tools and support.

CHAPTER-OPENING VIGNETTES

Vignettes drawn from real-world events introduce students to the chapter concepts.

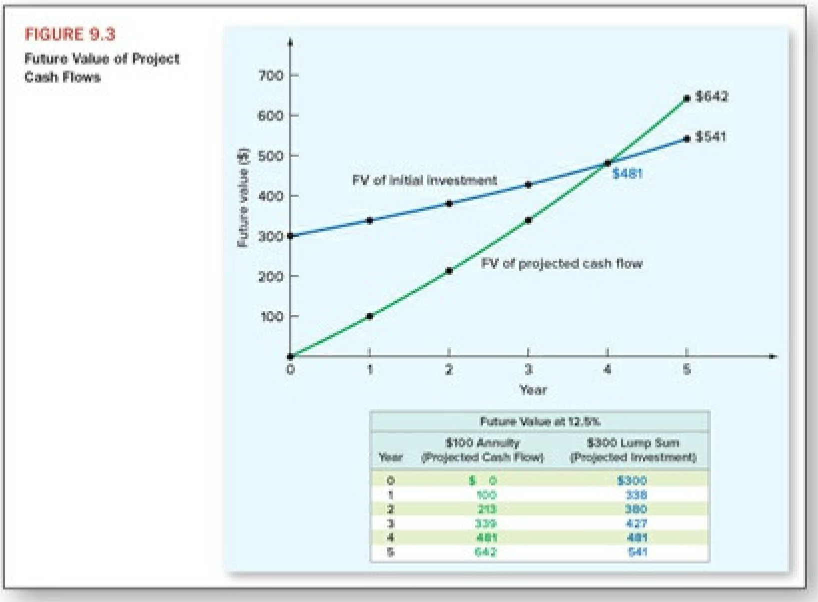


CHAPTER LEARNING OBJECTIVES

This feature maps out the topics and learning goals in every chapter. Each end-of-chapter problem and test bank question is linked to a learning objective, to help you organize your assessment of knowledge and comprehension.

PEDAGOGICAL USE OF COLOR

This learning tool continues to be an important feature of *Fundamentals of Corporate Finance*. In almost every chapter, color plays an extensive, nonschematic, and largely self-evident role. A guide to the functional use of color is on pages xlv-xlvi of this front matter.



IN THEIR OWN WORDS BOXES

This series of boxes features popular articles on key topics in the text written by distinguished scholars and practitioners. Boxes include essays by Merton Miller on capital structure, Fischer Black on dividends, and Roger Ibbotson on capital market history. A complete list of "In Their Own Words" boxes appears on page xliv.

IN THEIR OWN WORDS ...

Robert C. Higgins on Sustainable Growth

Most financial officers know intuitively that it takes money to make money. Rapid sales growth requires increased assets in the form of accounts receivable, inventory, and fixed plant, which, in turn, require money to pay for assets. They also know that if their company does not have the money when needed, it can literally "grow broke." The sustainable growth equation states these intuitive truths explicitly.

Sustainable growth is often used by bankers and other external analysts to assess a company's creditworthiness. They are aided in this exercise by several sophisticated computer software packages that provide detailed analyses of the company's past financial performance, including its annual sustainable growth rate.

Bankers use this information in several ways. Quick comparison of a company's actual growth rate to its sustainable rate tells the banker what issues will be at the top of management's financial agenda. If actual growth consistently exceeds sustainable growth, management's problem will be where to get the cash to finance growth. The banker thus can anticipate interest in loan products. Conversely, if sustainable growth consistently exceeds actual, the banker had best be prepared to talk about investment products, because management's problem will be what to do with all the cash that keeps piling up in the till.

Bankers also find the sustainable growth equation useful for explaining to financially inexperienced small business owners and overly optimistic entrepreneurs that, for the long-run viability of their business, it is necessary to keep growth and profitability in proper balance.

Finally, comparison of actual to sustainable growth rates helps a banker understand why a loan applicant needs money and for how long the need might continue. In one instance, a loan applicant requested $100,000 to pay off several insistent suppliers and promised to repay in a few months when he collected some accounts receivable that were coming due. A sustainable growth analysis revealed that the firm had been growing at four to six times its sustainable growth rate and that this pattern was likely to continue in the foreseeable future. This alerted the banker to the fact that impatient suppliers were only a symptom of the much more fundamental disease of overly rapid growth, and that a $100,000 loan would likely prove to be only the down payment on a much larger, multiyear commitment.

Robert C. Higgins is the Marguerite Reimers Professor of Finance, Emeritus, at the Foster School of Business at the University of Washington. He pioneered the use of sustainable growth as a tool for financial analysis.

A NOTE ABOUT SUSTAINABLE GROWTH RATE CALCULATIONS

Very commonly, the sustainable growth rate is calculated using just the numerator in our expression, ROE $\times$ b. This causes some confusion, which we can clear up here. The issue has to do with how ROE is computed. Recall that ROE is calculated as net income divided by total equity. If total equity is taken from an ending balance sheet (as we have done consistently, and is commonly done in practice), then our formula is the right one. However, if total equity is from the beginning of the period, then the simpler formula is the correct one.

WORK THE WEB

As we discussed in this chapter, ratios are an important tool for examining a company's performance. Gathering the necessary financial statements to calculate ratios can be tedious and time-consuming. Fortunately, many sites on the web provide this information for free. One of the best is www.reuters.com. We went there, entered the ticker symbol "HD" (for Home Depot), and then went to the "Financials" page. Here is an abbreviated look at the results:

	Company	industry	sector
Quick Ratio (MRQ)	0.42	1.03	1.26
Current Ratio (MRQ)	1.34	1.91	1.58
LT Debt to Equity (MRQ)	397.33	84.80	34.40
Total Debt to Equity (MRQ)	406.99	98.04	64.39
Interest Coverage (TTM)	18.56	14.73	3.63

The website reports the company, industry, and sector ratios. As you can see, Home Depot has lower quick and current ratios than the industry.

Questions

1. *Go to www.reuters.com and find the major ratio categories listed on this website. How do the categories differ from the categories listed in this textbook?*
2. *Go to www.reuters.com and find all the ratios for Home Depot. How does the company compare to the industry for the ratios presented on this website?*

WORK THE WEB BOXES

These boxes show students how to research financial issues using the web and then how to use the information they find to make business decisions. Work the Web boxes also include interactive follow-up questions and exercises.

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REAL-WORLD EXAMPLES

Actual events are integrated throughout the text, tying chapter concepts to real life through illustration and reinforcing the relevance of the material. Some examples tie into the chapter-opening vignette for added reinforcement.

SPREADSHEET STRATEGIES

How to Calculate Present Values with Multiple Future Cash Flows Using a Spreadsheet

Just as we did in our previous chapter, we can set up a basic spreadsheet to calculate the present values of the individual cash flows as follows. Notice that we have calculated the present values one at a time and added them up:

	A	B	C	D	E
1					
2	Using a spreadsheet to value multiple future cash flows				
3					
4	What is the present value of $200 in one year, $400 the next year, $600 the next year, and				
5	$800 the last year if the discount rate is 12 percent?				
6					
7	Rate:	.12			
8					
9	Year	Cash flows	Present values	Formula used	
10	1	$200	$178.57	=PV(B7,A10,0,−B10)	
11	2	$400	$318.88	=PV(B7,A11,0,−B11)	
12	3	$600	$427.07	=PV(B7,A12,0,−B12)	
13	4	$800	$508.41	=PV(B7,A13,0,−B13)	
14					
15		Total PV:	$1,432.93	=SUM(C10:C13)	
16					
17	Notice the negative signs inserted in the PV formulas. These just make the present values have				
18	positive signs. Also, the discount rate in cell B7 is entered as B7 (an "absolute" reference)				
19	because it is used over and over. We could have just entered ".12" instead, but our approach is				
20	more flexible.				
21					
22					

Source: Microsoft Excel

SPREADSHEET STRATEGIES

This feature introduces students to Excel and shows them how to set up spreadsheets in order to analyze common financial problems-a vital part of every business student's education.

CALCULATOR HINTS

How to Calculate Present Values with Multiple Future Cash Flows Using a Financial Calculator

To calculate the present value of multiple cash flows with a financial calculator, we will discount the individual cash flows one at a time using the same technique we used in our previous chapter, so this is not really new. However, we can show you a shortcut. We will use the numbers in Example 6.3 to illustrate.

To begin, of course, we first remember to clear out the calculator! Next, from Example 6.3, the first cash flow is $200 to be received in one year and the discount rate is 12 percent, so we do the following:

Enter	1	12			200
	N	I/Y	PMT	PV	FV
Solve for				−178.57	

Now, you can write down this answer to save it, but that's inefficient. All calculators have a memory where you can store numbers. Why not just save it there? Doing so cuts down on mistakes because you don't have to write down and/or rekey numbers, and it's much faster.

Next, we value the second cash flow. We need to change N to 2 and FV to 400. As long as we haven't changed anything else, we don't have to reenter I/Y or clear out the calculator, so we have:

Enter	2				400
	N	I/Y	PMT	PV	FV
Solve for				−318.88	

CALCULATOR HINTS

Brief calculator tutorials appear in selected chapters to help students learn or brush up on their financial calculator skills. These complement the Spreadsheet Strategies.

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Concept Questions

3.3a What are the five groups of ratios? Give two or three examples of each kind.

3.3b Given the total debt ratio, what other two ratios can be computed? Explain how.

3.3c Turnover ratios all have one of two figures as the numerator. What are these two figures? What do these ratios measure? How do you interpret the results?

3.3d Profitability ratios all have the same figure in the numerator. What is it? What do these ratios measure? How do you interpret the results?

CONCEPT BUILDING

Chapter sections are intentionally kept short to promote a step-by-step, building block approach to learning. Each section is then followed by a series of short concept questions that highlight the key ideas just presented. Students use these questions to make sure they can identify and understand the most important concepts as they read.

SUMMARY TABLES

These tables succinctly restate key principles, results, and equations. They appear whenever it is useful to emphasize and summarize a group of related concepts. For an example, see Chapter 3, page 68.

PV for a perpetuity = C/r 6.4

For example, an investment offers a perpetual cash flow of $500 every year. The return you require on such an investment is 8 percent. What is the value of this investment? The value of this perpetuity is:

Perpetuity PV = C/r = $500/.08 = $6,250

For future reference, Table 6.2 contains a summary of the annuity and perpetuity basic calculations we have described in this section. By now, you probably think that you'll just use online calculators to handle annuity problems. Before you do, see our nearby *Work the Web* box!

Preferred Stock **EXAMPLE 6.7**

Preferred stock (or preference stock) is an important example of a perpetuity. When a corporation sells preferred stock, the buyer is promised a fixed cash dividend every period (usually every quarter) forever. This dividend must be paid before any dividend can be paid to regular stockholders—hence the term *preferred*.

Suppose the Fellini Co. wants to sell preferred stock at $100 per share. A similar issue of preferred stock already outstanding has a price of $40 per share and offers a dividend of $1 every quarter. What dividend will Fellini have to offer if the preferred stock is going to sell?

LABELED EXAMPLES

Separate numbered and titled examples are extensively integrated into the chapters. These examples provide detailed applications and illustrations of the text material in a step-by-step format. Each example is completely self-contained so students don't have to search for additional information. Based on our classroom testing, these examples are among the most useful learning aids because they provide both detail and explanation.

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KEY TERMS

Key Terms are printed in bold type and defined within the text the first time they appear. They also appear in the margins with definitions for easy location and identification by the student.

EXPLANATORY WEB LINKS

These web links are provided in the margins of the text. They are specifically selected to accompany text material and provide students and instructors with a quick way to check for additional information using the Internet.

The SEC has a good overview of the bankruptcy process in its "Online Publications" section at www.sec.gov.

1. A petition is filed in a federal court. Corporations may file a voluntary petition, or involuntary petitions may be filed against the corporation by several of its creditors.
2. A trustee-in-bankruptcy is elected by the creditors to take over the assets of the debtor corporation. The trustee will attempt to liquidate the assets.
3. When the assets are liquidated, after payment of the bankruptcy administration costs, the proceeds are distributed among the creditors.
4. If any proceeds remain, after expenses and payments to creditors, they are distributed to the shareholders.

KEY EQUATIONS

Called out in the text, key equations are identified by an equation number. The list in Appendix B shows the key equations by chapter, providing students with a convenient reference.

Based on our examples, we can now write the general expression for the value of a bond. If a bond has (1) a face value of F paid at maturity, (2) a coupon of C paid per period, (3) t periods to maturity, and (4) a yield of r per period, its value is:

$$\text{Bond value} = C \times [1 - 1/(1+r)^t]/r \quad + \quad F/(1+r)^t$$

$$\text{Bond value} = \text{Present value of the coupons} + \text{Present value of the face amount} \qquad (7.1)$$

Average Returns: The First Lesson

12.3

Excel Master It! Excel Master coverage online

As you've probably begun to notice, the history of capital market returns is too complicated to be of much use in its undigested form. We need to begin summarizing all these numbers. Accordingly, we discuss how to go about condensing the detailed data. We start out by calculating average returns.

CALCULATING AVERAGE RETURNS

The obvious way to calculate the average returns on the different investments in Table 12.1 is to add up the yearly returns and divide by 91. The result is the historical average of the individual values.

For example, if you add up the returns for the large-company stocks in Figure 12.5 for the 91 years, you will get about 10.88. The average annual return is 10.88/91 = .120, or 12.0%. You interpret this 12.0 percent just like any other average. If you were to pick a year at random from the 91-year history and you had to guess what the return in that year was, the best guess would be 12.0 percent.

AVERAGE RETURNS: THE HISTORICAL RECORD

Table 12.2 shows the average returns for the investments we have discussed. As shown, in a typical year, the small-company stocks increased in value by 16.6 percent. Notice also how much larger the returns are for stocks, compared to the returns on bonds.

These averages are, of course, nominal because we haven't worried about inflation. Notice that the average inflation rate was 3.0 percent per year over this 91-year span. The nominal return on U.S. Treasury bills was 3.4 percent per year. The average real return on

HIGHLIGHTED CONCEPTS

Throughout the text, important ideas are pulled out and presented in a highlighted box-signaling to students that this material is particularly relevant and critical for their understanding. For examples, Chapter 10, page 313; Chapter 13, page 434.

EXCEL MASTER

Icons in the margin identify concepts and skills covered in our unique, RWJ-created Excel Master program. For more training in Excel functions for finance, and for more practice, log on to McGraw-Hill's *Connect Finance* for *Fundamentals of Corporate Finance* to access the Excel Master files. This pedagogically superior tool will help get your students the practice they need to succeed—and to exceed expectations.

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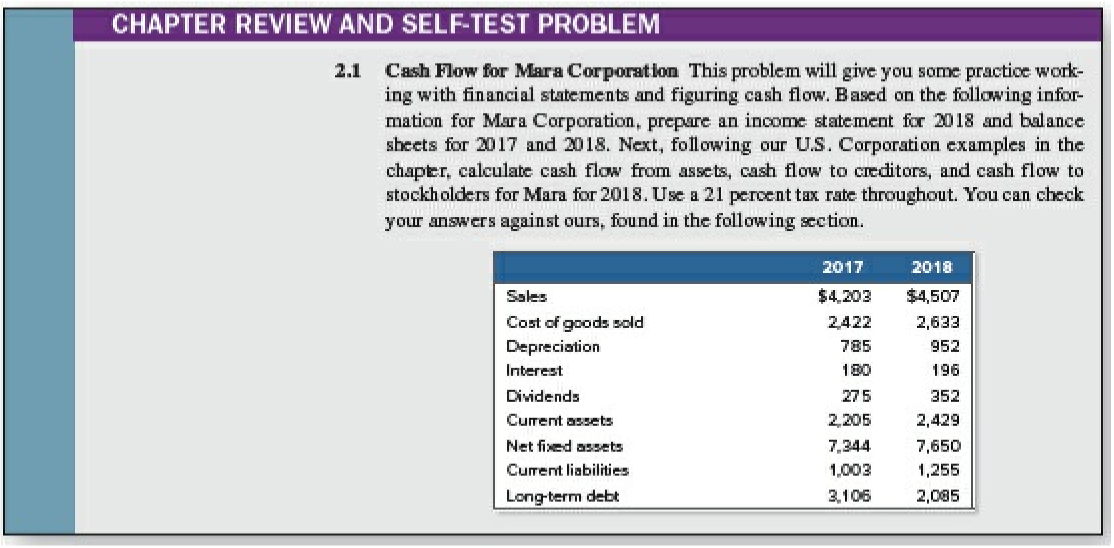
CHAPTER SUMMARY AND CONCLUSIONS

Every chapter ends with a concise, but thorough, summary of the important ideas–helping students review the key points and providing closure to the chapter.



CHAPTER REVIEW AND SELF-TEST PROBLEM

2.1 **Cash Flow for Mara Corporation** This problem will give you some practice working with financial statements and figuring cash flow. Based on the following information for Mara Corporation, prepare an income statement for 2018 and balance sheets for 2017 and 2018. Next, following our U.S. Corporation examples in the chapter, calculate cash flow from assets, cash flow to creditors, and cash flow to stockholders for Mara for 2018. Use a 21 percent tax rate throughout. You can check your answers against ours, found in the following section.

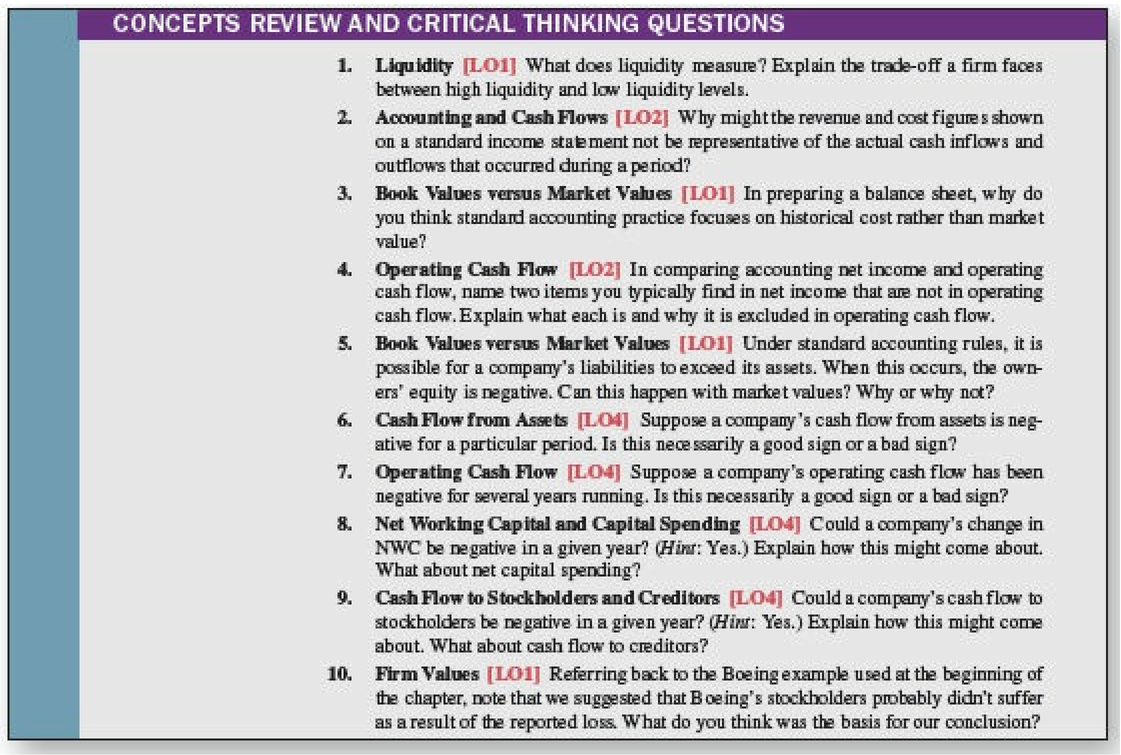
	2017	2018
Sales	$4,203	$4,507
Cost of goods sold	2,422	2,633
Depreciation	785	952
Interest	180	196
Dividends	275	352
Current assets	2,205	2,429
Net fixed assets	7,344	7,650
Current liabilities	1,003	1,255
Long-term debt	3,106	2,085

CHAPTER REVIEW AND SELF-TEST PROBLEMS

Appearing after the Summary and Conclusions, each chapter includes a Chapter Review and Self-Test Problem section. These questions and answers allow students to test their abilities in solving key problems related to the chapter content and provide instant reinforcement.

CONCEPTS REVIEW AND CRITICAL THINKING QUESTIONS

This successful end-of-chapter section facilitates your students' knowledge of key principles, as well as their intuitive understanding of the chapter concepts. A number of the questions relate to the chapter-opening vignette–reinforcing student critical thinking skills and the learning of chapter material.



CONCEPTS REVIEW AND CRITICAL THINKING QUESTIONS

1. **Liquidity** [LO1] What does liquidity measure? Explain the trade-off a firm faces between high liquidity and low liquidity levels.
2. **Accounting and Cash Flows** [LO2] Why might the revenue and cost figures shown on a standard income statement not be representative of the actual cash inflows and outflows that occurred during a period?
3. **Book Values versus Market Values** [LO1] In preparing a balance sheet, why do you think standard accounting practice focuses on historical cost rather than market value?
4. **Operating Cash Flow** [LO2] In comparing accounting net income and operating cash flow, name two items you typically find in net income that are not in operating cash flow. Explain what each is and why it is excluded in operating cash flow.
5. **Book Values versus Market Values** [LO1] Under standard accounting rules, it is possible for a company's liabilities to exceed its assets. When this occurs, the owners' equity is negative. Can this happen with market values? Why or why not?
6. **Cash Flow from Assets** [LO4] Suppose a company's cash flow from assets is negative for a particular period. Is this necessarily a good sign or a bad sign?
7. **Operating Cash Flow** [LO4] Suppose a company's operating cash flow has been negative for several years running. Is this necessarily a good sign or a bad sign?
8. **Net Working Capital and Capital Spending** [LO4] Could a company's change in NWC be negative in a given year? (*Hint*: Yes.) Explain how this might come about. What about net capital spending?
9. **Cash Flow to Stockholders and Creditors** [LO4] Could a company's cash flow to stockholders be negative in a given year? (*Hint*: Yes.) Explain how this might come about. What about cash flow to creditors?
10. **Firm Values** [LO1] Referring back to the Boeing example used at the beginning of the chapter, note that we suggested that Boeing's stockholders probably didn't suffer as a result of the reported loss. What do you think was the basis for our conclusion?

END-OF-CHAPTER QUESTIONS AND PROBLEMS

Students learn better when they have plenty of opportunity to practice; therefore, *Fundamentals*, 12e, provides extensive end-