finance

applications & theory

Cornett | Adair | Nofsinger

fourth edition

finance

applications & theory

The McGraw-Hill/Irwin Series in Finance, Insurance and Real Estate

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fourth edition

Marcia Millon Cornett

Bentley University

Troy A. Adair Jr.

Harvard Business School

John Nofsinger

University of Alaska Anchorage

McGraw Hill Education

dedicated

to my parents, Tom and Sue—Marcia Millon Cornett

to Kieran, the love of my life—Troy A. Adair Jr.

to Anna, my wife and best friend—John Nofsinger

about the authors

Marcia Millon Cornett *Robert A. and Julia E. Dorn Professor of Finance at Bentley University.* She received her B.S. degree in economics from Knox College in Galesburg, Illinois, and her M.B.A. and Ph.D. degrees in finance from Indiana University in Bloomington, Indiana. Dr. Cornett has written and published several articles in the areas of bank performance, bank regulation, corporate finance, and investments. Articles authored by Dr. Cornett have appeared in such academic journals as the *Journal of Finance;* the *Journal of Money, Credit, and Banking;* the *Journal of Financial Economics; Financial Management;* and the *Journal of Banking and Finance.* She was recently ranked the 124th most published out of more than 17,600 authors and the number five female author in finance literature over the last 50 years. Along with Anthony Saunders, Dr. Cornett has recently completed work on the ninth edition of *Financial Institutions Management* (McGraw-Hill Education) and the sixth edition of *Financial Markets and Institutions* (McGraw-Hill Education). Professor Cornett serves as an associate editor for the *Journal of Banking and Finance,* the *Journal of Financial Services Research, Review of Financial Economics, Financial Review,* and *Multinational Finance Journal.* Dr. Cornett has served as a member of the board of directors, the executive committee, and the finance committee of the SIU Credit Union. Dr. Cornett has also taught at Southern Illinois University at Carbondale, the University of Colorado, Boston College, and Southern Methodist University. She is a member of the Financial Management Association, the American Finance Association, and the Western Finance Association.

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John Nofsinger *Professor and William H. Seward Endowed Chair of International Finance at the University of Alaska Anchorage.* He earned his BS degree in electrical engineering from Washington State University, his MBA degree from Chapman University, and his PhD degree in finance from Washington State University. Dr. Nofsinger has written over 50 articles in the areas of investments, corporate finance, and behavioral finance. These papers have appeared in the scholarly journals *Journal of Finance, Journal of Business, Journal of Financial and Quantitative Analysis, Financial Management, Journal of Corporate Finance, Journal of Banking and Finance,* and *Journal of Behavioral Decision Making,* among others. Dr. Nofsinger has also authored (or coauthored) ten trade books, scholarly books, and textbooks that have been translated into eleven different languages. The most prominent of these books is the industry book, *The Psychology of Investing.* Dr. Nofsinger is a leading expert in behavioral finance and is a frequent speaker on this topic at industry conferences, universities, and academic conferences. He is frequently quoted or appears in the financial media, including *The Wall Street Journal, Financial Times, Fortune, Bloomberg Business Week, Smart Money, The Washington Post,* and *CNBC,* and other media from *The Dolans* to *The Street.com.*

a note from the authors

"There is a lot to cover in this course so I focus on the core concepts, theories, and problems."

"I like to teach the course by using examples from their own individual lives."

"My students come into this course with varying levels of math skills."

How many of these quotes might you have said while teaching the undergraduate corporate finance course? Our many years of teaching certainly reflect such sentiments, and as we prepared to write this book, we conducted many market research studies that confirm just how much these statements—or ones similar—are common across the country. This critical course covers so many crucial topics that instructors need to focus on core ideas to ensure that students are getting the preparation they need for future classes—and for their lives beyond college.

We did not set out to write this book to change the way finance is taught, but rather to parallel and support the way that instructors from across the country currently teach finance. Well over 600 instructors teaching this course have shared their class experiences and ideas via a variety of research methods that we used to develop the framework for this text. We are excited to have authored a book that we think you will find fits your classroom style perfectly.

KEY THEMES

This book's framework emphasizes three themes. See the next section in this preface for a description of features in our book that support these themes.

- **Finance is about connecting core concepts.** We all struggle with fitting so many topics into this course, so this text strives to make it easier for you by getting back to the core concepts, key research, and current topics. We realize that today's students expect to learn more in class from lectures than in closely studying their textbooks, so we've created brief chapters that clearly lead students to crucial material that they need to review if they are to understand how to approach core financial concepts. The text is also organized around learning goals, making it easier for you to prep your course and for students to study the right topics.

- **Finance can be taught using a personal perspective.** Most long-term finance instructors have often heard students ask "How is this course relevant to me?" on the first day of class. We no longer teach classes dedicated solely to finance majors; many of us now must teach the first finance course to a mix of business majors. We need to give finance majors the rigor they need while not overwhelming class members from other majors. For years, instructors have used individual examples to help teach these concepts, but this is the first text to integrate this personal way of teaching into the chapters.

- **Finance focuses on solving problems and decision making.** This isn't to say that concepts and theories aren't important, but students will typically need to solve some kind of mathematical problem—or at least understand the impact of different

numerical scenarios—to make the right decision on common finance issues. If you, as an instructor, either assign problems for homework or create exams made up almost entirely of mathematical material, you understand the need for good problems (and plenty of them). You also understand from experience the number of office hours you spend tutoring students and grading homework. Students have different learning styles, and this text aims to address that challenge to allow you more time in class to get through the critical topics.

CHANGES IN THE FOURTH EDITION

Based on feedback from users and reviewers, we undertook an ambitious revision in order to make the book follow your teaching strategy even more closely. Below are the changes we made for this fourth edition, broken out by chapter.

Overall

- Simplified figures where appropriate and added captions to emphasize the main "takeaways"
- Updated data, company names, and scenarios to reflect latest available data and real-world changes
- Cross-referenced numbered examples with similar end-of-chapter problems and self-test problems so students can easily model their homework
- Updated the numbers in the end-of-chapter problems to provide variety and limit the transfer of answers from previous classes

Chapter 1: Introduction to Financial Management

- Updated the Personal Application with information on firms that have filed for bankruptcy more recently
- Changed Learning Goal 1-9 to address the ramifications of China's slowdown and the drop in the price of oil
- Revised the Finance at Work—Markets box to discuss quantitative easing in the United States and around the world
- Revised the Finance at Work—Corporate box to cover the proposed merger of AB InBev and SABMiller
- Updated the data in Example 1-2 on executive compensation
- Replaced Section 1.7 on the financial crisis with a new Section 1.7: Big Picture Environment, including discussions of the ramifications of plummeting oil prices and China's economic slowdown
- Revised the Research It! exercise to address environment, society, and governance
- Changed the Mini-Case problem to cover Volkswagen's emission test cheating

Chapter 2: Reviewing Financial Statements

- Added a discussion of difference between EBIT and operating income
- Included extended definitions of net sales, cost of goods sold, and operating expenses
- Added a discussion of the interpretation of a cash-based income statement
- Added a new Finance at Work box
- Added an Excel solution for the Integrated Mini-Case

Chapter 3: Analyzing Financial Statements

- Added more discussion of debt ratios
- Added an Excel solution for the Integrated Mini-Case

Chapter 4: Time Value of Money 1: Analyzing Single Cash Flows

- Updated the data in Figure 4.5 on gold prices
- Added equation functions to Table 4.2 and Table 4.4
- Updated the gold return data in the Mini-Case
- Revised the data for the end-of-chapter Excel problem
- Added a new end-of-chapter Excel problem

Chapter 5: Time Value of Money 2: Analyzing Annuity Cash Flows

- Revised the chapter introduction to discuss Boeing
- Added equation functions to Tables 5.1, 5.2, 5.5, and 5.6
- Updated the present value of multiple annuities example to discuss the new David Price contract with the Boston Red Sox
- Changed the Finance at Work—Behavioral box to address the record Powerball jackpot of $1.5 billion on January 12, 2016
- Added a new end-of-chapter Excel problem

Chapter 6: Understanding Financial Markets and Institutions

- Updated all figures, tables, and values in the body of the chapter
- Added a section on the loanable funds theory/determination of equilibrium interest rates
- Added new end-of-chapter problems
- Decreased the coverage of the financial crisis (detailed information is available in the Web Appendix for Chapter 6 available in Connect or at **mhhe.com/Cornett4e**)
- Added an Excel solution for the Integrated Mini-Case

Chapter 7: Valuing Bonds

- Updated the Personal Application with new data
- Updated Figures 7.1–7.5 on bond issuance, interest rate path, yield to maturities, new bond quotes, and a summary of the bond market
- Added equation functions to Tables 7.3 and 7.5
- Revised the data for the end-of-chapter Excel problem
- Added a new end-of-chapter Excel problem

Chapter 8: Valuing Stocks

- Updated all table and figure values in the body of the chapter
- Updated the coverage of the stock market exchange in Section 8.2 to discuss the changes that have occurred in the NYSE and elsewhere
- Revised Example 8-1 to include new Coca-Cola data
- Updated Example 8-4 with new P/E data for Caterpillar
- Updated the data in the Mini-Case problem
- Added a new end-of-chapter Excel problem

Chapter 9: Characterizing Risk and Return

- Revised the example that runs throughout the chapter to discuss Staples
- Updated all table and figure values in the body of the chapter
- Added equation functions to Table 9.3 and Table 9.5
- Updated Example 9-2 to include new Mattel data
- Updated the data in the Finance at Work—Markets box
- Revised the data for the end-of-chapter Excel problem
- Added a new end-of-chapter Excel problem
- Updated the data in the Mini-Case problem

Chapter 10: Estimating Risk and Return

- Updated values and data in Tables 10.1–10.4
- Changed the Mini-Case to cover finding Disney's beta
- Added a new end-of-chapter Excel problem

Chapter 11: Calculating the Cost of Capital

- Clarified and expanded the discussion of use of market values versus book values in the calculation of WACC
- Expanded the discussion of when to use CAPM versus the constant-growth model when estimating the cost of equity
- Expanded the discussion of computation of marginal tax rate for WACC
- Enhanced the discussion of use of firm versus project WACCs
- Enhanced the discussion of appropriateness of divisional WACCs

Chapter 12: Estimating Cash Flows on Capital Budgeting Projects

- Clarified the definition of salvage value
- Expanded the discussion of substitutionary and complementary effects
- Enhanced the discussion of income tax shield from a project having taxable losses
- Enhanced the discussion of NWC changes "leading" changes in sales
- Expanded the discussion of the half-year convention in depreciation

Chapter 13: Weighing Net Present Value and Other Capital Budgeting Criteria

- Clarified the discussion of the goal of capital budgeting decision rules and the differing environments of investment and capital budgeting decisions
- Expanded the discussion of why using rate-based and time-based decision statistics to choose across projects can be misleading with regards to NPV

Chapter 14: Working Capital Management and Policies

- Expanded the discussion of the rationale for NWC and the tradeoffs inherent in having too little or too much
- Refined discussion of cash flows vs. the cash account

Chapter 15: Financial Planning and Forecasting

- Clarified the discussion of deseasonalizing sales

Chapter 16: Assessing Long-Term Debt, Equity, and Capital Structure

- Refined the discussion of active versus passive capital structure changes
- Expanded the discussion of effects of no-taxation and no-bankruptcy assumptions of M&M's "perfect world" on optimal choice of capital structure
- Expanded the discussion of the effects of financial distress on capital structure choices

Chapter 17: Sharing Firm Wealth: Dividends, Share Repurchases, and Other Payouts

- Expanded the discussion of information effect on dividend policy
- Updated the example of real-world dividend policies

Chapter 18: Issuing Capital and the Investment Banking Process

- Updated all figures, tables, and values in the body of the chapter
- Added additional coverage of small business lending
- Added an Excel solution for the Mini-Case

Chapter 19: International Corporate Finance

- Revised the chapter introduction to include new data about Starbucks
- Updated all table and figure values and data in the body of the chapter
- Updated Example 9-1 to include new exchange rate data
- Revised the Mini-Case with new exchange rate data
- Revised the data for the end-of-chapter Excel problem

Chapter 20: Mergers and Acquisitions and Financial Distress

- Added Herfindahl-Hirschman Index (HHI)
- Increased discussion of debtor in possession and cramdown
- New Finance at Work box on American Airline bankruptcy
- Added M&A calculation in Excel format
- Added new end-of-chapter problems

Unique Features

CONNECTING CORE CONCEPTS

Learning Goals appear at the beginning of each chapter and are indicated throughout the text next to headings, examples, summary, and end-of-chapter problems to which they relate. These outcomes help instructors structure their classes and assign readings and homework. The accompanying test bank provides instructors with hundreds of questions organized by level and learning goals to make customization even easier!

Learning Goals

LG5-1 Compound multiple cash flows to the future.

LG5-2 Compute the future value of frequent, level cash flows.

LG5-3 Discount multiple cash flows to the present.

LG5-4 Compute the present value of an annuity.

LG5-5 Figure cash flows and present value of a perpetuity.

LG5-6 Adjust values for beginning-of-period annuity payments.

LG5-7 Explain the impact of compound frequency and the difference between the annual percentage rate and the effective annual rate.

LG5-8 Compute the interest rate of annuity payments.

LG5-9 Compute payments and amortization schedules for car and mortgage loans.

LG5-10 Calculate the number of payments on a loan.

finance at work — markets

JP MORGAN'S $2 BILLION BLUNDER

JP Morgan Chase & Co. is reeling after a huge trading bet backfired and left the bank with at least $2 billion in losses from the bad trade. This may be the end of chief executive James Dimon's run as the so-called "King of Wall Street." The bank's Chief Investment Office (CIO), responsible for managing the New York company's risk, placed a series of risky bets and trades. In an article published last month, *The Wall Street Journal* reported that "large positions taken in that office by a trader nicknamed 'the London whale' had roiled a sector of the debt markets. The bank, betting on a continued economic recovery with a complex web of trades tied to the values of corporate bonds, was hit hard when prices moved against it starting last month, causing losses in many of its derivatives positions. The losses occurred while J.P. Morgan tried to scale back that trade."

In April of 2012, *The Wall Street Journal* reported that investors and hedge funds were trying to take advantage of trades made by Chase's London whale, Bruno Iksil, who worked out of the CIO, by making bets in the market on credit default swaps (CDSs). The CIO group previously had stopgaps in place to protect and prevent the company from significant losses during periods of downturn in the economy. However, the *Journal* reports that earlier in 2012, "it began reducing that position, [taking] a bullish stance on the financial health of certain companies and selling protection that would compensate buyers if those companies defaulted on debts. Mr. Iksil was a heavy seller of CDS contracts tied to a

basket, or index, of companies." In April of 2012, these protection costs began to go up, which further contributed to the bank's losses.

According to JP Morgan Chase company filings, Mr. Iksil's group had approximately $350 billion in investment securities, about 15% of the bank's total assets, on December 31, 2011. Mr. Dimon said the bank has an extensive review under way of what went wrong. "These were grievous mistakes, they were self-inflicted, we were accountable and we happened to violate our own standards and principles by how we want to operate the company. This is not how we want to run a business."

Mr. Dimon held a conference call with investors and analysts on May 10, stating, "In hindsight, the . . . strategy was flawed, complex, poorly reviewed, poorly executed, and poorly monitored. The portfolio has proven to be riskier, more volatile and less effective . . . than we thought." Dimon resolves, "We will learn from it, we will fix it, we will move on, hopefully in the end, it will make us a better company." Though JP Morgan Chase came through the financial crisis better off than many other financial institutions, this trading loss certainly tarnishes their reputation. Mr. Dimon reports that the loss is "slightly more than $2 billion" in the second quarter of this year.

Sources: Dan Fitzpatrick, Gregory Zuckerman, and Liz Rappaport, "J.P. Morgan's $2 Billion Blunder," *The Wall Street Journal Online*, May 11, 2012. JP Morgan Chase & Co. Business Update Call, May 10, 2012.

❗ Want to Know More?

Key Words to Search for Updates: JPMorgan, London whale, derivative trading losses

Finance at Work boxes highlight current events and hot topics noted in the news. The *Want to Know More?* feature in each box contains suggested words to use for searching the Internet for updates. These features are great to use for class discussion or as homework assignments.

Time Out boxes, featured at the end of sections, test students' understanding of the key terms and core concepts just presented. Answers to the Time Out questions appear at the end of each chapter.

TIME OUT

3-1 What are the three major liquidity ratios used in evaluating financial statements?

3-2 How do the three major liquidity ratios used in evaluating financial statements differ?

3-3 Does a firm generally want to have high or low liquidity ratios? Why?

ANSWERS TO TIME OUT

3-1 The three most commonly used liquidity ratios are the current ratio, the quick (or acid-test) ratio, and the cash ratio.

3-2 The current ratio measures the dollars of current assets available to pay each dollar of current liabilities. The quick ratio measures the dollars of more liquid assets (cash and marketable securities and accounts receivable) available to pay each dollar of current liabilities. The cash ratio measures the dollars of cash and marketable securities available to pay each dollar of current liabilities

Research It! projects, perfect for individual assignments or as group projects, are included at the end of each chapter and require students to search the Web for data and other information to answer the questions.

PERSONAL PERSPECTIVE

viewpoints

Business Application

The managers of DPH Tree Farm, Inc., have released public statements that the firm's performance surpasses that of other firms in the industry. They cite the firm's liquidity and asset management positions as particularly strong. DPH's superior performance in these areas has resulted in superior overall returns for their stockholders. What are the key financial ratios that DPH Tree Farm, Inc., needs to calculate and evaluate in order to justify these statements? (**See the solution at the end of the chapter.**)

Personal Application

Chris Ryan is looking to invest in DPH Tree Farm, Inc. Chris has the most recent set of financial statements from DPH Tree Farm's annual report but is not sure how to evaluate them or measure the firm's performance relative to other firms in the industry. What are the financial ratios with which Chris should measure the performance of DPH Tree Farm, Inc.? How can Chris use these ratios to evaluate the firm's performance? (**See the solution at the end of the chapter.**)

Viewpoints, a unique feature presented at the beginning of each chapter, pose both a business and a personal problem using key chapter topics. These Viewpoints scenarios immediately set a context for the chapter and allow instructors to take class discussion in multiple directions to make key concepts clearer. **Viewpoints Revisited** at the end of the chapter show how these problems are solved. **Viewpoints Extended** leverage a variety of media to provide an extended look at each personal application raised. These are accessible online in Connect or at **mhhe. com/Cornett4e**.

PROBLEM-SOLVING AND LEARNING STYLES

Numbered examples in each chapter feature various perspectives, so students gain practice in solving problems in both business and individual contexts. Each example contains a list of end-of-chapter problems that are similar, in order to better model the solution process.

EXAMPLE 4-1

LG4-3

Graduation Celebration Loan

Dominic is a fourth-year business student who wants to go on a graduation celebration/vacation in Mexico but he has no money to pay for the trip. After the vacation, Dominic will start his career. His job will require moving to a new town and buying professional clothes. He asked his parents to lend him $1,500, which he figures he will be able to pay back in three years. His parents agree to lend him the money, but they will charge 7 percent interest per year. What amount will Dominic need to pay back? How much interest will he pay? How much of what he pays is interest-on-interest?

For interactive versions of this example, log in to Connect or go to mhhe.com/cornett4e.

SOLUTION: Dominic will have to pay:

$$FV_3 = \$1,500 \times (1.07)^3 = \$1,500 \times 1.225 = \$1,837.56$$

Of the $1,837.56 he owes his parents, $337.56 (= $1,837.56 − $1,500) is interest. We can illustrate this time-value problem in the following time line.

Period	0	7%	1	7%	2	7%	3 years
Cash flow	PV = 1,500					FV = −1,837.56	

Compare this compound interest with simple interest. Simple interest would be 7 percent of $1,500 (which is $105) per year. The three-year cost would then be $315 (= 3 × $105). The difference between the compound interest of $337.56 and the total simple interest of $315 is the interest-on-interest of $22.56.

Similar to Problems 4-3, 4-4, 4-5, 4-6, 4-21, 4-22, 4-33, 4-34, Self-Test Problem 1

CALCULATOR HINTS

N = 3
I = 7
PV = 1500
PMT = 0
CPT FV = −1837.56

Each numbered example is accompanied by **video guided examples.** These exciting, unique features detail the solution to a key problem or concept within the chapter. For each example, students can click or tap within the eBook or follow the direct URL to find the following additional support.

- The exact example in the book is worked out in a visual, narrated format.

- A similar example is presented in a video format, which stops at decision points in the problem and asks the students to identify the next step. The video continues, explaining why the student is correct or incorrect, and continues solving the problem. This feature allows students to apply and check their learning before doing homework.

- The solution to the example in the book is demonstrated using multiple calculator formats—reducing the class time needed to teach students how to use their calculators.

- The solution to the example in the book is demonstrated using Excel, to help you and your students get a basic understanding of how to set up the spreadsheets.

Coefficient of Variation

$$CoV_{1950s} = \frac{4.9\%}{0.0\%} = NA \qquad CoV_{1960s} = \frac{6.2\%}{1.6\%} = 3.88$$

$$CoV_{1970s} = \frac{6.8\%}{5.7\%} = 1.19 \qquad CoV_{1980s} = \frac{15.1\%}{13.5\%} = 1.12$$

$$CoV_{1990s} = \frac{12.8\%}{9.5\%} = 1.35 \qquad CoV_{2000s} = \frac{6.7\%}{8.7\%} = 0.77$$

Which decade had the best bond risk-return relationship?

A. 1950s   B. 1960s
C. 1970s   D. 1980s
E. 1990s   F. 2000s

02:20 / 02:28

Math Coach boxes are featured in many chapters to help avoid the most common mathematical mistakes in a particular problem.

Future Value of Multiple Annuities
At times, multiple annuities can occur in both business and personal life. For example, you may find that you can increase the amount of money you save each year because of a promotion or a new and better job. As an illustration, reconsider the annual $100 deposits made for five years at 8 percent per year. This time, the deposit can be increased to $150 for the fourth and fifth years. How can we use the annuity equation to compute the future value when we have two levels of cash flows? In this case, the cash flow can be categorized as two annuities. The first annuity is a $100 cash flow for five years. The second annuity is a $50 cash flow for two years. We demonstrate this as

MATH COACH

ANNUITIES AND THE FINANCIAL CALCULATOR

In the previous chapter, the level payment button (PMT) in the financial calculator was always set to zero because no constant payments were made every period. We use the PMT button to input the annuity amount. For calculators, the present value is of the opposite sign (positive versus negative) from the future value. This is also the case with annuities. The level cash flow will be of the opposite sign as the future value, as the time line on page 143 shows.

You would use the financial calculator to solve the problem of depositing $100 for five years via the following inputs: N = 5, I = 8, PV = 0, PMT = –100. In this case, the input for present value is zero because no deposit is made today. The result of computing the future value is 586.66.

Self-Test Problems with Solutions appear before the gradable problem sets so students can test themselves before diving into their homework.

self-test problems with solutions

1 Future Value and Annuity Payments Chandler and Monica are trying to decide if   LG5-2, 5-9
they will have enough money to retire early in 12 years, at age 60. Their current assets are $300,000 in retirement plans and they have $100,000 in other investments. Together, they contribute $28,000 per year to their retirement plans and another $6,000 to other investments. If their assets grow at 8 percent per year, how much money will they have when they turn 60? After they retire, they will invest their wealth more conservatively and it will earn 5 percent per year. Is this enough to fund a $100,000 per year retirement for 40 years?

Solution:
Chandler and Monica's current assets of $400,000 will grow to $1,007,268 (= $400,000 × 1.08^12) in 12 years. Their annuity contributions of $34,000 (= $28,000 + $6,000) will add another

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Integrated Mini-Cases at the end of each chapter combine the chapter's key concepts into a more complex problem to help students understand how concepts and methods tie together.

integrated mini-case Working with Financial Statements

Listed are the 2018 financial statements for Garners' Platoon Mental Health Care, Inc. Spread the balance sheet and income statement. Calculate the financial ratios for the firm, including the internal and sustainable growth rates. Using the DuPont system of analysis and the industry ratios reported, evaluate the performance of the firm.

GARNERS' PLATOON MENTAL HEALTH CARE, INC.
Balance Sheet as of December 31, 2018
(in millions of dollars)

Assets		Liabilities and Equity	
Current assets		Current liabilities	
Cash and marketable securities	$ 421	Accrued wages and taxes	$ 316
Accounts receivable	1,109	Accounts payable	867
Inventory	1,760	Notes payable	872
Total	$ 3,290	Total	$ 2,055
Fixed assets		Long-term debt	$ 3,090
Gross plant and equipment	$ 5,812	Stockholders' equity	
Less: Depreciation	840	Preferred stock (30 million	
		shares)	$ 60
Net plant and equipment	$ 4,972	Common stock and paid-in	
		surplus (200 million shares)	637
Other long-term assets	892	Retained earnings	3,312
Total	$ 5,864	Total	$ 4,009
Total assets	$ 9,154	Total liabilities and equity	$ 9,154

Supplements

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- **Test Bank** Revised by Peggy Ward, Wichita State University, and reviewed by Susan He, Washington State University, the test bank contains hundreds of questions that complement the material presented in the book. The Test Bank is tagged by level of difficulty, learning goal, AACSB knowledge categories, and Bloom's taxonomy—making it easy for instructors to customize exams to reflect the material stressed in class. The test bank is available in Word files and tests can also be created in McGraw-Hill's Connect or through TestGen.

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- **Solutions Manual** Developed by authors Marcia Cornett, Troy Adair, and John Nofsinger, this resource contains the worked-out solutions to all the end-of-chapter problems, in the consistent voice and method of the book. The solutions have been class-tested and checked by multiple instructors to ensure accuracy.

- **PowerPoint Presentations** The PowerPoint presentations have been carefully updated for the fourth edition by Jennifer McCune, Western Iowa Tech Community College. These slides contain lecture notes, which closely follow the book content, enhanced with the tables and figures from the chapters. Several chapters are also supplemented with additional presentations that contain notes and examples using financial calculators. Instructors can easily customize these slides to suit their classroom needs and various presentation styles.

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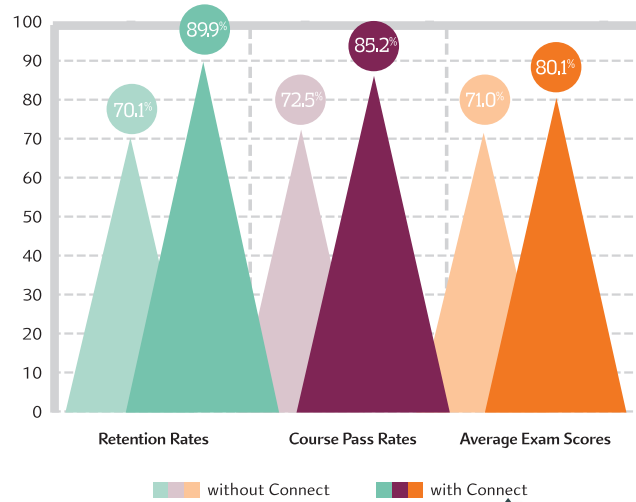
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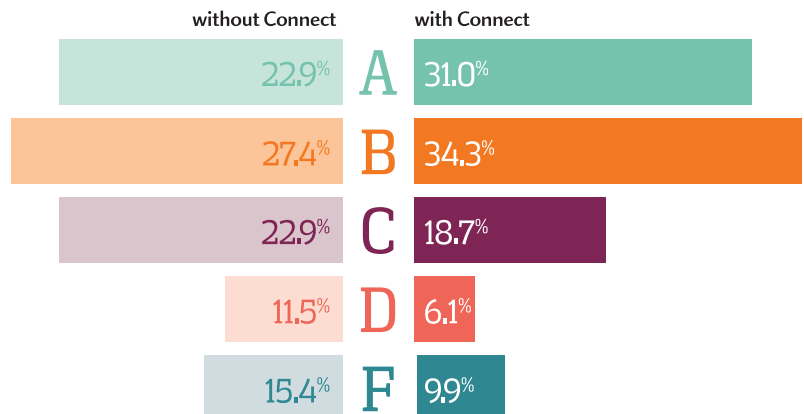
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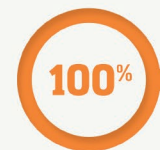
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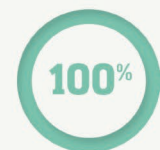
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acknowledgments

Development of the first edition of this book series started with a course survey that was completed by 400 instructors across the country. The following is a list of the reviewers that became part of the many review stages, focus groups, and class-testing for the revisions that followed—all of which were invaluable to us during the development of this book.

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finance

applications & theory

1 | Introduction to Financial Management

viewpoints

Business Application

Caleb has worked very hard to create and expand his juice stand at the mall. He has finally perfected his products and feels that he is offering the right combination of juice and food. As a result, the stand is making a nice profit. Caleb would like to open more stands at malls all over his state and eventually all over the country.

Caleb knows he needs more money to expand. He needs money to buy more equipment, buy more inventory, and hire and train more people. How can Caleb get the capital he needs to expand? (**See the solution at the end of the chapter.**)

Personal Application

Dagmar is becoming interested in investing some of her money. However, she has heard about several corporations in which the investors lost all of their money. Recently, Dagmar has heard that RadioShack (2015), Wet Seal (2015), and THQ (2013) have all filed for bankruptcy. These firms' stockholders lost their entire investments in these firms.

Many of the stockholders who lost money were employees of these companies who had invested some of their retirement money in the company stock. Dagmar wonders what guarantee she has as an investor against losing her money. (**See the solution at the end of the chapter.**)

What is the best way for Dagmar to ensure a happy retirement?

Learning Goals

LG1-1 Define the major areas of finance as they apply to corporate financial management.

LG1-2 Show how finance is at the heart of sound business decisions.

LG1-3 Learn the financial principles that govern your personal decisions.

LG1-4 Examine the three most common forms of business organization in the United States today.

LG1-5 Distinguish among appropriate and inappropriate goals for financial managers.

LG1-6 Identify a firm's primary agency relationship and discuss the possible conflicts that may arise.

LG1-7 Discuss how ethical decision making is part of the study of financial management.

LG1-8 Describe the complex, necessary relationships among firms, financial institutions, and financial markets.

LG1-9 Explain the business ramifications of the decline in the price of oil and China's economic slowdown.

Do you know: What finance entails? How financial management functions within the business world? Why you might benefit from studying financial principles? This chapter is the ideal place to get answers to those questions. **Finance** is the study of *applying specific value* to things we own, services we use, and decisions we make. Examples are as varied as shares of stock in a company, payments on a home mortgage, the purchase of an entire firm, and the personal decision to retire early. In this text, we focus primarily on one area of finance, **financial management,** which concentrates on valuing things from the perspective of a company, or firm.

Financial management is critically important to the success of any business organization, and throughout the text we concentrate on describing the key financial concepts in corporate finance. As a bonus, you will find that many tools and techniques for handling the financial management of a firm also apply to broader types of financial problems, such as personal finance decisions.

In finance, *cash flow* is the term that describes the process of paying and receiving money. It makes sense to start our discussion of finance with an illustration of various financial cash flows. We use simple graphics to help explain the nature of finance and to demonstrate the different *subareas* of the field of finance.

After we have an overall picture of finance, we will discuss three important variables in the business environment that can and do have significant impact on the firm's financial decisions. These are (1) the organizational form of the business, (2) the agency relationship between the managers and owners of a firm, and (3) ethical considerations as finance is applied in the real world.

finance

The study of applying specific value to things we own, services we use, and decisions we make.

financial management

The process for and the analysis of making financial decisions in the business context.

1.1 • Finance in Business and in Life

If your career leads you to making financial decisions, then this book will be indispensable. If not, it is likely that your activities in a business will involve interacting with the finance functions. After all, the important investments of a firm involve capital and, therefore, finance. Expanding marketing channels, developing new products, and upgrading a factory all cost money. A firm spends its capital on these projects to foster growth. Understanding how finance professionals evaluate those projects will help you be successful in your business focus. In addition, everyone will benefit in their personal life from learning finance and understanding financial decisions.

And what exactly makes up this engine of financial decision making? Successful application of *financial theories* helps money flow from individuals who want to improve their financial future to businesses that want to expand the scale or scope of their operations. These exchanges lead to a growing economy and more employment opportunities for people at all income levels. So, two important things result from this simple exchange: The economy will be more productive, and individuals' wealth will grow into the future.

In this first section, we develop a comprehensive description of finance and its subareas, and we look at the specific decisions that professionals in each subarea must make. As you will see, all areas of finance share a common set of ideas and application tools.

What Is Finance?

To get the clearest possible picture of how finance works, let's begin by grouping all of an economy's participants along two dimensions. The first dimension is made up of those who may have "extra" money (i.e., money above and beyond their current spending needs) for investment. The second dimension is made up of those who have an ability to develop viable business ideas, a sense of business creativity. Both money and ideas are fuel for the financial engine. In our simple model, these two dimensions result in four groups representing economic roles in society, as shown in Figure 1.1. Of course, people can move from one group to another over time.

Type 1 people in our model do not lend significant sums of money (*capital*) or spend much money in a business context, so they play no direct role in **financial markets,** the mechanisms by which capital is exchanged. Although these people probably play indirect roles by providing labor to economic enterprises or by consuming their products, for simplicity we focus on those who play direct roles. Therefore, type 1 participants will be asked to step aside.

Type 4 people use financial tools to evaluate their own business concepts and then choose the ideas with the most potential. From there, they create their own enterprises to implement their best ideas efficiently and effectively. Type 4 individuals, however, are self-funded and do not need financial markets. The financial tools they use and the types of decisions they make are narrowly focused or specific to their own purposes. For our discussion, then, type 4 individuals also are asked to move to the sidelines.

Now for our financial role players, the type 2 and type 3 people. Financial markets and financial institutions allow these people to participate in a mutually advantageous exchange. Type 2 people temporarily lend their money to type 3 people, who put that money to use with their good business ideas.

financial markets

> The arenas through which funds flow.

FIGURE 1.1

Participants in Our Hypothetical Economy		No Extra Money	Extra Money
Four groups form according to the availability of money and ideas.	**No Economically Viable Business Ideas**	Type 1: No money and no ideas	Type 2: Money but no ideas
	Economically Viable Business Ideas	Type 3: No money but ideas	Type 4: Both money and ideas

FIGURE 1.2
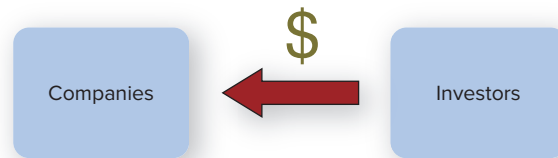
FIGURE 1.3
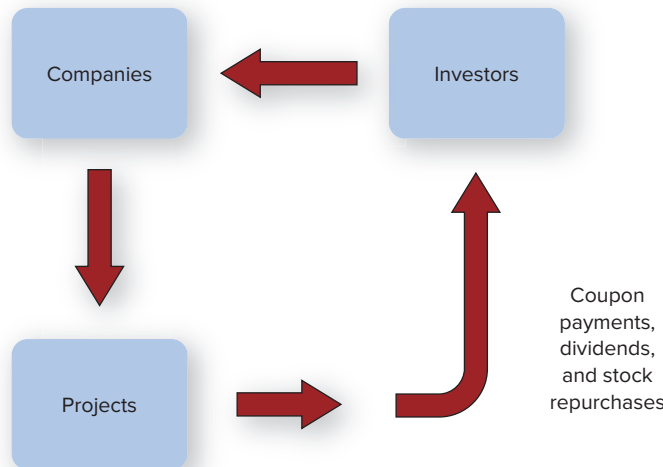
Return of Capital to Investors
In this basic process, the company can expand its business, hire more employees, and create a promising future for its own growth. Meanwhile, the investor can increase wealth for the future.

In most developed economies, type 2 participants are usually individual **investors.** *You* will likely be an individual investor for most of your life. Each of us separately may not have a lot of extra money at any one time, but by aggregating our available funds, we can provide sizable amounts for investment.

Type 3 participants, the idea generators, may be individuals, but they are more commonly corporations or other types of companies with research and development (R&D) departments dedicated to developing innovative ideas. It's easy to see that investors and companies can help one another. If investors lend their "extra" capital to companies, as shown in Figure 1.2, then companies can use this capital to fund expansion projects. Economically successful projects will eventually be able to repay the money (plus profit) to investors, as Figure 1.3 shows.

Of course, not all of the cash will return to the investors. In reality, sources of friction arise in this system, and the amount of capital returned to investors is reduced. Two primary sources of friction are **retained earnings,** which are basically funds the firm keeps for its ongoing operations, and *taxes,* which the government imposes on the company and individuals to help fund public services. Figure 1.4 shows an analysis of cash flows with the associated retained earnings and tax payments. In a very simple way, this figure provides an intuitive overall explanation of finance and of its major subareas. For example, individuals must assess which investment opportunities are right for their needs and risk tolerance; financial institutions and markets must efficiently distribute the capital; and companies must evaluate their potential projects and wisely decide which projects to fund, what kind of capital to use, and how much capital to return to investors. All of these types of decisions deal with the basic cash flows of finance shown in Figure 1.4, but from different perspectives.

investors

Those who buy securities or other assets in hopes of earning a return and getting more money back in the future.

retained earnings

The portion of company profits that are kept by the company rather than distributed to the stockholders as cash dividends.

FIGURE 1.4

The Complete Cash Flows of Finance
All the subareas of the financial system interact, with retained earnings and taxes playing a role in the flows.
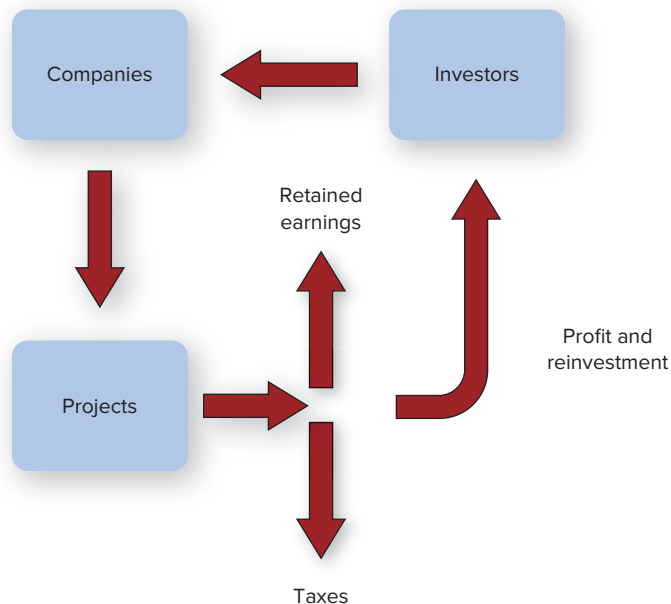
FIGURE 1.5

Investments
Investors mark the start and end of the financial process; they put money in and reap the rewards (or take the risk).
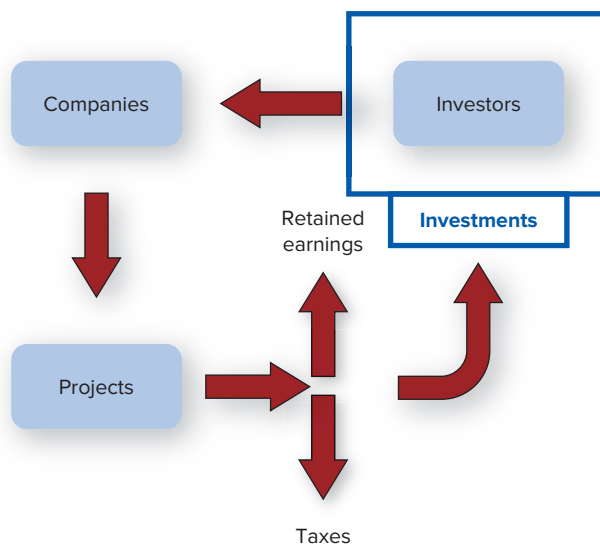
Subareas of Finance

investment

The analysis and process of choosing securities and other assets to purchase.

Investments is the subarea of finance that involves methods and techniques for making decisions about what kinds of *securities* to own (e.g., bonds or stocks), which firms' securities to buy, and how to pay the investor back in the form that the investor wishes (e.g., the timing and certainty of the promised cash flows). Figure 1.5 models cash flows from the investor's perspective. The concerns of the investments subarea of finance are shown (with the movement of red arrows) from the investor's viewpoint (seen as the blue box).

Financial management is the subarea that deals with a firm's decisions in acquiring and using the cash that is received from investors or from retained earnings. Figure 1.6 depicts the financial management process very simply. As we know, this text focuses

FIGURE 1.6
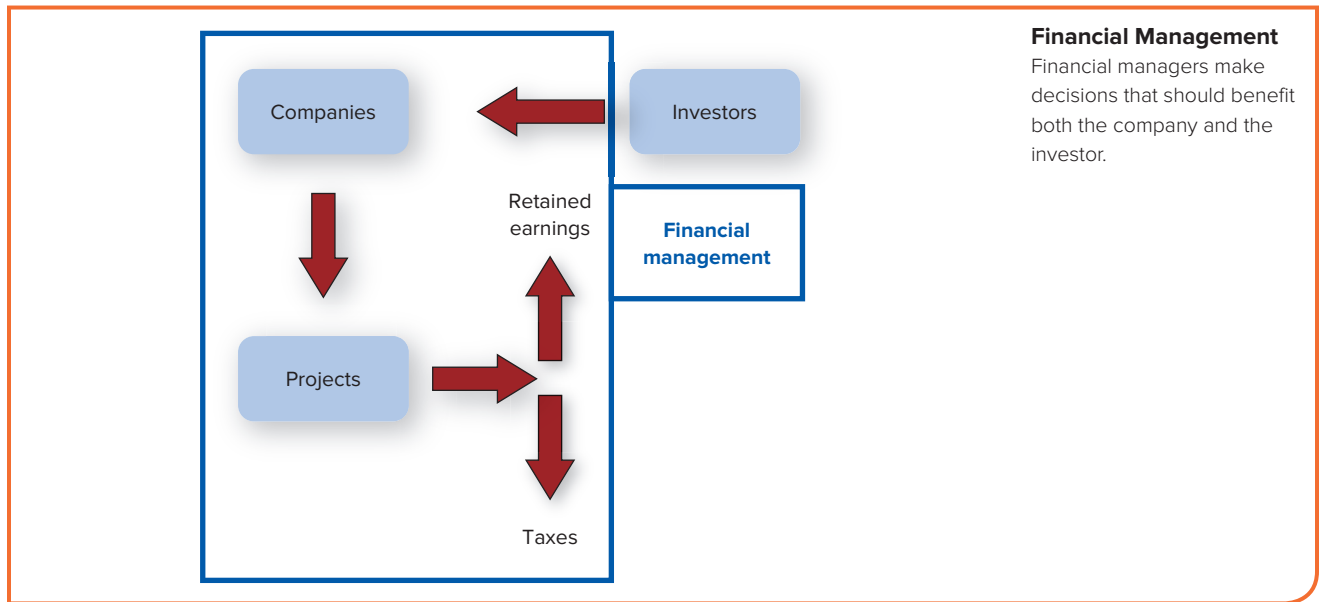
Financial Management
Financial managers make decisions that should benefit both the company and the investor.

FIGURE 1.7
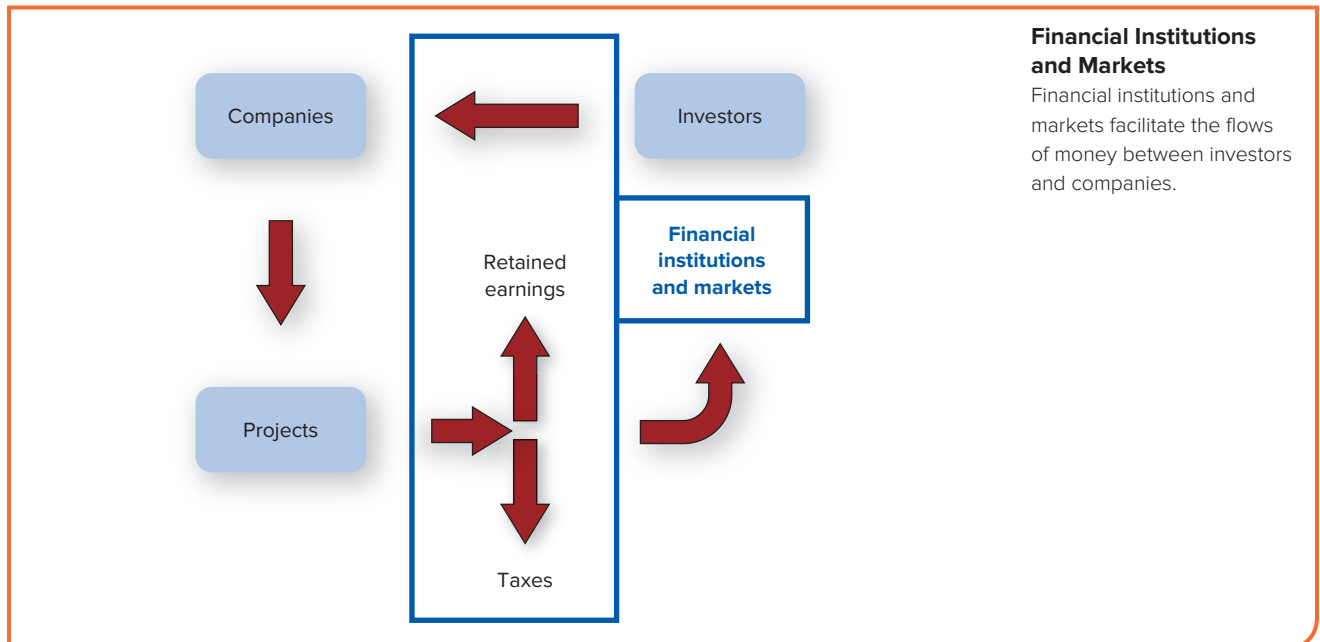
Financial Institutions and Markets
Financial institutions and markets facilitate the flows of money between investors and companies.

primarily on financial management. We'll see that this critical area of finance involves decisions about

- How to organize the firm in a manner that will attract capital.
- How to raise capital (e.g., bonds versus stocks).
- Which projects to fund.
- How much capital to retain for ongoing operations and new projects.
- How to minimize taxation.
- How to pay back capital providers.

All of these decisions are quite involved, and we will discuss them throughout later chapters.

Financial institutions and markets make up another major subarea of finance. These two dynamic entities work in different ways to facilitate capital flows between investors and companies. Figure 1.7 illustrates the process in which the firm acquires capital and

financial institutions and markets

The organizations that facilitate the flow of capital between investors and companies.

FIGURE 1.8

International Finance
Laws, risks, and business relationships are variable across different countries but can interact profitably.
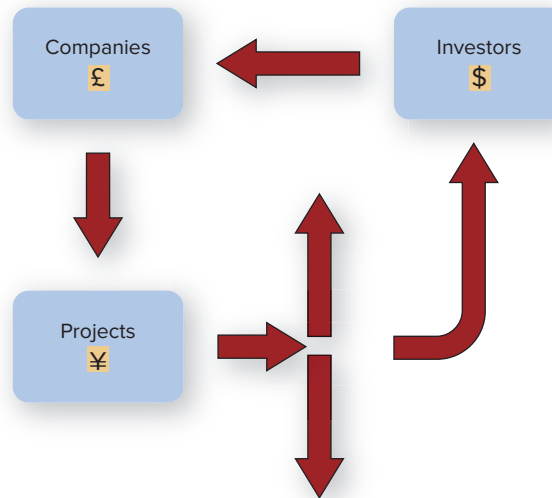
investors take part in ongoing securities trading to increase that capital. Financial institutions, such as banks and pension administrators, are vital players that contribute to the dynamics of interest rates.

International finance is the final major subarea of finance we will study. As the world has transformed into a global economy, finance has had to become much more innovative and sensitive to changes in other countries. Investors, companies, business operations, and capital markets may all be located in different countries. Adapting to this environment requires understanding of international dynamics, as Figure 1.8 shows. In the past, international financial decisions were considered to be a straightforward application of the other three financial subareas. But experience has shown that the uncertainty about future exchange rates, political risk, and changing business laws across the globe adds enough complexity to these decisions to classify international finance as a subarea of finance in its own right.

international finance

The use of finance theory in a global business environment.

Application and Theory for Financial Decisions

*Cash flows are neither instantaneous nor guaranteed.* We need to keep this in mind as we begin to apply finance theory to real decisions. Future cash flows are uncertain in terms of both timing and size, and we refer to this uncertainty as **risk.** Investors experience risk about the return of their capital. Companies experience risk in funding and operating their business projects. Most financial decisions involve comparing the rewards of a decision to the risks that decision may generate.

Comparing rewards with risks frequently involves assessing the value today of cash flows that we expect to receive in the future. For example, the price of a **financial asset,** something worth money, such as a stock or a bond, should depend on the cash flows you expect to receive from that asset in the future. A stock that's expected to deliver high cash flows in the future will be more valuable today than a stock with low expected future cash flows. Of course, investors would like to buy stocks whose market prices are currently lower than their actual values. They want to get stocks on sale! Similarly, a firm's goal is to fund projects that will give them more value than their costs.

Financial assets are normally grouped into **asset classes** according to their risk and return characteristics. The most commonly accepted groups of asset classes are stocks, bonds, money market instruments, real estate, and derivative securities, all of which we

risk

A potential future negative impact to value and/or cash flows. It is often discussed in terms of the probability of loss and the expected magnitude of the loss.

financial asset

A general term for securities like stocks, bonds, and other assets that represent ownership in a cash flow.

asset classes

A group of securities that exhibit similar characteristics, behave similarly in the marketplace, and are subject to the same laws and regulations.

QUANTITATIVE EASING IN THE UNITED STATES AND AROUND THE WORLD

The Financial Crisis of 2007 to 2008 led to a global recession that ended in the United States in 2009. The severe recession is often referred to as the "Great Recession" to give it a Great Depression flavor. However, the ensuing economic recovery was slow. It did not have the typical bounce-back that often occurs after an acute recession.

To foster economic growth and give the financial sector time to recover, the U.S. Federal Reserve embarked on a grand experiment called *quantitative easing (QE)*. QE is a monetary policy designed to increase the money supply in the economy through buying securities in the market and lowering short-term interest rates. The first round of QE involved the Fed buying potentially toxic mortgage-backed securities (see Chapter 7), primarily from banks. This removed the suspect securities from the banks' balance sheets and allowed them time to get financially stronger. Also, short-term interest rates were cut to zero.

This initial round of QE ended in early 2010 after the Fed had purchased $1.25 trillion of mortgage-backed securities. Chapter 6 discusses QE's impact on the financial system. By the end of 2010, the economy was still not as strong as desired. The Fed's mission has been to foster maximum employment in an environment of 2 percent inflation. But the employment market was still lackluster and inflation was near zero in 2010.

In the fourth quarter of 2010 the Fed began QE 2, in which it bought $600 billion of long-term U.S. Treasury securities over the ensuing nine months. This was an attempt to lower long-term interest rates. It did not have the desired impact on long-term rates, so QE 3 was implemented in late 2012 and continued through 2013. For QE 3, the Fed sold short-term bonds in order to purchase more long-term securities. Short-term interest rates were kept near zero. The low interest rates had profound impacts on the bond market (see Chapter 7) and companies' cost of capital (see Chapter 11).

Instead of ending QE 3, the Fed decided to reduce its purchases each month through most of 2014. This QE taper was an attempt to wean the economy from the constant Fed influence. QE 3 finally tapered out at the end of 2014. Speculation then grew about when the Fed would start raising interest rates. The Fed finally raised its key interest rate to 0.25% on December 16, 2015. It was the first rate hike in nearly 10 years.

One ramification of declining interest rates, or near zero rates, is that a country's currency weakens against foreign currencies (see Chapter 19). This is likely to increase exports and decrease imports.

The economies of other countries and regions have also struggled to grow since the Financial Crisis, and many of them have also implemented quantitative easing programs—two notable examples are the European Central Bank and Japan. With the U.S. ending its QE programs and raising interest rates while these other countries are continuing their monetary expansion, the U.S. dollar is likely to strengthen. That would make exports more expensive and imports cheaper.

! Want to Know More?

Key Words to Search for Updates: quantitative easing, zero rate environment, QE taper, currency exchange rates

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will discuss in more detail later in the book. As the risk and return profiles of each of these asset classes differ widely between classes, the mathematical models, terminology, and expertise of each class tend to be very specialized and trading tends to happen in distinct, separate financial markets for each asset class.

Despite the large number of stories about investors who've struck it rich in the stock market, it's actually more likely that a firm will find "bargain" projects, projects that may yield profit for a reasonable investment, than investors will find underpriced stocks. Firms can find bargains because business projects involve **real assets** trading in **real markets** (markets in tangible assets). In the real environment, some level of monopoly power, special knowledge, and expertise possibly can make such projects worth more than they cost. Investors, however, are trading financial assets in financial markets, where the assets are more likely to be worth, on average, exactly what they cost.

The method for relating expected or future cash flows to today's value, called *present value,* is known as **time value of money (TVM).** Chapters 4 and 5 cover this critical financial concept in detail and apply it to the financial world (as well as daily life). Since the expected cash flows of either a business project or an investment are likely to be uncertain, any TVM analysis must account for both the timing and the risk level of the cash flows.

real assets

Physical property like gold, machinery, equipment, or real estate.

real markets

The places and processes that facilitate the trading of real assets.

time value of money (TVM)

The theory and application of valuing cash flows at various points in time.