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Chad J. Zutter | Scott B. Smart



Principles of Managerial Finance

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Principles of Managerial Finance

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*Dedicated to my parents who
have always been there for me.*

CJZ

*Dedicated to
my father, Kenneth Smart.*

SBS

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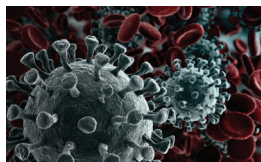
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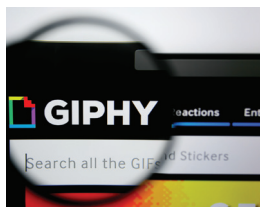
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Preface

NEW TO THIS EDITION

Finance is a dynamic discipline, and as we made plans to publish the sixteenth edition, we were mindful of feedback from users of the fifteenth edition and of changes in managerial finance practices that have taken hold in recent years. For example, firms now operate in an environment in which they are judged not only by their financial results, but also by their performance on environmental, social, and governance metrics. In this edition we highlight how companies may tap specialized bond markets to fund green investments, how diversity influences board decisions, and how leaders of some of the world's largest businesses are engaging in new debates about the goals their firms should pursue.

In every chapter, our changes focused on keeping the material current and relevant for students. In appropriate places, new topics were added and new or updated features appear in each chapter. Here is a list of some of the revisions:

- We replaced or updated all of the chapter-opening vignettes that feature stories gathered from the business press that illustrate key ideas or concepts in each chapter. Many of the chapter openers feature companies such as Rolls-Royce, Tesla, Tesco, TikTok, Coca-Cola, Emirates, Aramco, and Diageo that are familiar to students. We designed these opening vignettes to impress upon students that the material they will see in each chapter is relevant for business in the “real world.”
- To add further value to the chapter-opening vignettes, at the end of each chapter we provide an Opener-In-Review question that asks students to apply a concept they have learned in the chapter to the business situation described in the chapter opener.
- We have updated many of the *Focus on Practice* and *Focus on Ethics* boxes that appear throughout the chapters, and we have added a *Focus on People/Planet/Profits* box in most chapters. The Focus on People/Planet/Profits boxes highlight how firms' decisions and prices in financial markets reflect societal concerns about issues ranging from climate change to diversity and inclusion.
- In this edition we added more in-chapter examples and end-of-chapter problems that expose students to real-world data.

The chapter sequence is essentially unchanged from the prior edition, though there is new content in every chapter, and some chapters (especially Chapter 13) were heavily revised. This edition contains nineteen chapters divided into eight parts. Each part is introduced by a brief overview, which is intended to give students an advance sense for the collective value of the chapters included in the part.

Part 1 contains two chapters. Chapter 1 provides an overview of the role of managerial finance in a business enterprise and emphasizes the goal of the firm and the broad principles that financial managers use in their pursuit of that goal. This edition highlights the renewed debate, sparked in part by The Business Roundtable, about whether firms should act in the interests of their shareholders or on behalf of a larger group of stakeholders. Chapter 2 describes the financial market

environment in which firms operate and interact with investors through the various financial institutions and markets. This edition includes expanded discussion of the efficient market hypothesis and security price movements, as well as new content on the effects of the COVID-19 pandemic on financial markets.

Part 2 contains three chapters focused on basic financial skills such as financial statement analysis, cash flow analysis, and time-value-of-money calculations. Chapter 3 provides an overview of financial statements and in-depth financial ratio analysis using real data from Target Corporation. The financial ratio analysis provides opportunities for interesting discussion about Target's financial performance for its three most recent fiscal years and relative to some of its key competitors. Chapter 4 emphasizes first the broad goals of strategic and operational financial planning and then the importance of cash flow within any financial plan. Chapter 5 provides straightforward and intuitive coverage of all time-value-of-money concepts used throughout the textbook. Chapter 5 also introduces newly formatted calculator screenshots that demonstrate the exact keystrokes used to complete time-value-of-money calculations. Figure 5.5 offers a new visual representation of how simple and compound interest accumulate over time.

Part 3 focuses on bond and stock valuation. We placed these two chapters just ahead of the risk and return chapter to provide students with exposure to basic material on bonds and stocks that is easier to grasp than are some of the more theoretical concepts in the next part. New in Chapter 6 is an expanded discussion of bond price sensitivity to interest rate changes and Figure 6.6 that illustrates this relation for several bonds with varying characteristics. Chapter 7 continues to provide comprehensive coverage of methods for stock valuation with rewritten examples valuing Rocky Mountain Chocolate Factory, Procter & Gamble, and Broadcom with (respectively) the zero-growth, constant-growth, and variable-growth dividend models. The chapter also includes a free-cash-flow valuation of Ruth's Chris Steak House.

Part 4 contains the risk and return chapter as well as the chapter on the cost of capital. We believe that following the risk and return chapter with the cost of capital material helps students understand the important principle that the expectations of a firm's investors shape how the firm should approach major investment decisions (which are covered in Part 5). In other words, Part 4 helps students understand where a project "hurdle rate" comes from before they start using hurdle rates in capital budgeting problems. Updates to Chapter 8 include expanded coverage of the role that correlation plays in portfolio formation using data on JPMorgan, Morgan Stanley, and Medtronic. Chapter 9 now emphasizes finding the cost of debt by calculating a bond's YTM using a calculator or Excel rather than an algebraic approximation. Chapter 9 also has a new section that discusses when the WACC is the correct hurdle rate for investment analysis versus when it is not.

Part 5 contains three chapters on various capital budgeting topics. Chapter 10 focuses on capital budgeting methods such as payback and net present value analysis. New presentations in Chapter 10 include discounted payback period, project EVA for a finite-lived project, and modified internal rate of return (MIRR). Chapter 11 explains how financial analysts construct cash flow projections, and this edition includes a revised discussion of how to determine which cash flows are incremental and which are not, as well as expanded coverage of why analysts ignore financing cash flows such as interest expense when calculating an investment project's cash flows. Chapter 12 describes how firms analyze the risks associated with capital investments and make refinements to the capital budgeting process. In addition to new discussion of operating-leverage and its impact on project risk, much of the discussion in this chapter has been revised or expanded.

Part 6 deals with the topics of capital structure and payout policy. We revised Chapter 13 extensively so that it now follows a more contemporary format that, after introducing financial leverage and its effects, follows the seminal work of Modigliani and Miller before discussing roles of trade-off theory, agency theory, and signaling theory. Chapter 14 also includes expanded treatment of the Modigliani and Miller theory of payout policy and a new section that discusses recent criticisms of corporate share buybacks.

Part 7 contains two chapters centered on working capital issues. A major development in business has been the extent to which firms have found new ways to economize on working capital investments. The first chapter in Part 7 explains why and how firms work hard to squeeze resources from their investments in current assets such as cash and inventory. The second chapter in this part focuses more on management of current liabilities.

Finally, Part 8 has three chapters covering a variety of topics, including hybrid securities, mergers and other forms of restructurings, and international finance. These subjects are some of the most dynamic areas in financial practice, and we have made a number of changes here to reflect current practices. Chapter 17 contains new examples of convertible securities issued by firms such as Southwest Airlines and Tesla. Chapter 18 covers important merger concepts with examples featuring recent transactions involving Anthem-Cigna, Fiat-Chrysler, Dow-DuPont, Berkshire Hathaway-Dominion Energy Transmission, and Broadcom Ltd.-Maxlinear. Chapter 19 discusses the Regional Comprehensive Economic Partnership signed by China and 14 other countries in November 2020. The chapter adds new material on purchasing power and interest rate parity relationships that link exchange rate movements to differences in inflation and interest rates across countries.

Although the text content is sequential, instructors can assign almost any chapter as a self-contained unit, enabling instructors to customize the text to various teaching strategies and course lengths.

Like the previous editions, the sixteenth edition incorporates a proven learning system, which integrates pedagogy with concepts and practical applications. It concentrates on the knowledge that is needed to make keen financial decisions in an increasingly competitive business environment. The strong pedagogy and generous use of examples—many of which use real data from markets or companies—make the text an easily accessible resource for in-class learning or out-of-class learning, such as online courses and self-study programs.

SOLVING TEACHING AND LEARNING CHALLENGES

The desire to write *Principles of Managerial Finance* came from the experience of teaching the introductory managerial finance course. Those who have taught the introductory course many times can appreciate the difficulties that some students have absorbing and applying financial concepts. Students want a book that speaks to them in plain English and explains how to apply financial concepts to solve real-world problems. These students want more than just description; they also want demonstration of concepts, tools, and techniques. This book is written with the needs of students in mind, and it effectively delivers the resources that students need to succeed in the introductory finance course.

Courses and students have changed since the first edition of this book, but the goals of the text have not changed. The conversational tone and wide use of examples set off in the text still characterize *Principles of Managerial Finance*. Building on those strengths, sixteen editions, and numerous translations,

Principles has evolved based on feedback from both instructors and students, from adopters, nonadopters, and practitioners. In this edition, we have worked to ensure that the book reflects contemporary thinking and pedagogy to further strengthen the delivery of the classic topics that our users have come to expect. Below are descriptions of the most important resources in *Principles* that help meet teaching and learning challenges.

Users of *Principles of Managerial Finance* have praised the effectiveness of the book's **Teaching and Learning System**, which they hail as one of its hallmarks. The system, driven by a set of carefully developed learning goals, has been retained and polished in this sixteenth edition. The “walkthrough” on the pages that follow illustrates and describes the key elements of the Teaching and Learning System. We encourage both students and instructors to acquaint themselves at the start of the semester with the many useful features the book offers.

CHAPTER 1

The Role of Managerial Finance

LEARNING GOALS

- LG1** Define finance and the managerial finance function.
- LG2** Describe some goals that financial managers pursue, and link achievement of those objectives to the general goal of maximizing the wealth of the firm's owners.
- LG3** Identify the primary activities of the financial manager.
- LG4** Explain the key principles that financial managers use when making business decisions.
- LG5** Describe the legal forms of business organization.
- LG6** Describe the nature of the principal-agent relationship between the owners and managers of a corporation, and explain how various corporate governance mechanisms attempt to manage agency problems.

WHY THIS CHAPTER MATTERS TO YOU

In your *professional* life

ACCOUNTING You need to understand the relationships between the accounting and finance functions within the firm, how decision makers rely on the financial statements you prepare, why maximizing a firm's value is not the same as maximizing its profits, and the ethical duty you have when reporting financial results to investors and other stakeholders.

INFORMATION SYSTEMS You need to understand why financial information is important to managers in all functional areas, the documentation that firms must produce to comply with various regulations, and how manipulating information for personal gain can get managers into serious trouble.

MANAGEMENT You need to understand the various legal forms of a business organization, how to communicate the goal of the firm to employees and other stakeholders, the advantages and disadvantages of the agency relationship between a firm's managers and its owners, and how compensation systems can align or misalign the interests of managers and investors.

MARKETING You need to understand why increasing a firm's revenues or market share is not always a good thing, how financial managers evaluate aspects of customer relations such as cash and credit management policies, and why a firm's brands are an important part of its value to investors.

OPERATIONS You need to understand the financial benefits of increasing a firm's production efficiency, why maximizing profit by cutting costs may not increase the firm's value, and how managers have a duty to act on behalf of investors when operating a corporation.

In your *personal* life

Many principles of managerial finance also apply to your personal life. Learning a few simple principles can help you manage your own money more effectively.

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Six **Learning Goals** at the start of the chapter highlight the most important concepts and techniques in the chapter. Students are reminded to think about the learning goals while working through the chapter by strategically placed **learning goal icons**.

Every chapter opens with a feature, titled **Why This Chapter Matters to You**, that helps motivate student interest by highlighting both professional and personal benefits from achieving the chapter learning goals.

Its first part, **In Your Professional Life**, discusses the intersection of the finance topics covered in the chapter with the concerns of other major business disciplines. It encourages students majoring in accounting, information systems, management, marketing, and operations to appreciate how financial acumen will help them achieve their professional goals.

The second part, **In Your Personal Life**, identifies topics in the chapter that will have particular application to personal finance. This feature also helps students appreciate the tasks performed in a business setting by pointing out that the tasks are not necessarily different from those that are relevant in their personal lives.



WEWORK

WeWork's IPO Doesn't

As the coronavirus outbreak looked down much of the U.S. economy in March 2020, executives at Softbank, Japan's second largest company, were backing out of a deal. Three years earlier it had invested \$1.3 billion to buy an initial stake of 7.7% of the common stock of WeWork, a company that leased shared office space to high-tech startups. With its 2010 co-founder, Adam Neumann, serving as CEO, WeWork looked like one of the hottest startups in the market, growing its operations by 100% in 2015. WeWork's growth was funded by venture capital partnerships such as DAG in the U.S. and Aleph in Israel, investment banks such as JPMorgan Chase and Goldman Sachs, and even the Harvard University endowment. Collectively, this group invested nearly \$14 billion from 2009 to 2019, but no one invested more than Softbank. After an additional \$2 billion Softbank investment in January 2019, WeWork's estimated market value hit \$47 billion.

WeWork decided it was time to "go public" by conducting an initial public offering (IPO). As part of that process, the U.S. Securities and Exchange Commission requires companies seeking to do an IPO to disclose financials and other details about the business in a document called a prospectus. The August 2019 prospectus was a revelation, and not in a good way. The company had racked up huge losses, and Wall Street experts combing over the documents questioned whether the company could ever become profitable. Questions surfaced about Neumann's erratic and perhaps unethical behavior, such as charging the company \$5.9 million to license the name "We Company" from an entity that he personally controlled. Just a few weeks after filing the prospectus, WeWork announced that it would postpone its IPO, and by the end of the year the company's estimated value had dropped 83% to \$8 billion. In November WeWork laid off 2,400 workers, nearly 20% of its workforce.

Softbank had pledged to buy \$3 billion in stock from existing investors and employees, but a few months later, with office buildings empty due to the "shelter-in-place" orders in many states, WeWork's already precarious prospects dimmed. Softbank rescinded its promise to inject new funds into WeWork, claiming that ongoing S.E.C. investigations of WeWork gave it an "out" from its contractual obligations.¹

1. "Softbank Backs Away From Part of Planned WeWork Buyout," by Lu Hoffman and Elise Brown, *wej.com*, March 18, 2020; "WeWork Funding Round, Valuations, and Investors," *crack.co*, April 11, 2020.

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Each chapter begins with a short **opening vignette** that describes a recent real-company event related to the chapter topic. These stories raise interest in the chapter by demonstrating its relevance in the business world. Most of these opening vignettes are entirely new to this edition.

LC 1 LC 2

1.1 Finance and the Firm

The field of finance is broad and dynamic. Finance influences everything that firms do, from hiring personnel to building factories to launching new advertising campaigns. Because almost any aspect of business has important financial dimensions, many financially oriented careers await those who understand the principles of finance. Even if you see yourself pursuing a career in another discipline such as marketing, operations, accounting, supply chain, or human resources, you'll find that understanding a few crucial ideas in finance will enhance your professional success. Knowing how financial managers think is important, especially if you're not one yourself, because they are often the gatekeepers of corporate resources. Fluency in the language of finance will improve your ability to communicate the value of your ideas to your employer. Financial knowledge will also make you a smarter consumer and a wiser investor.

Learning goal icons tie chapter content to the learning goals and appear next to related text sections and again in the chapter-end summary, end-of-chapter problems, and exercises.

business ethics
Standards of conduct or moral judgment that apply to persons engaged in commerce.

THE ROLE OF BUSINESS ETHICS

Business ethics are standards of conduct or moral judgment that apply to persons engaged in commerce. Violations of these standards involve a variety of actions: "creative accounting," earnings management, misleading financial forecasts, insider trading, fraud, bribery, and kickbacks. The press has reported many such violations in recent years, involving such well-known companies as Facebook, which was hit with a record \$5 billion fine for mishandling users' information, and Volkswagen, where engineers set up elaborate deceptions to get around pollution controls. In these and similar cases, the offending companies suffered various penalties, including fines levied by government agencies, damages paid to plaintiffs in lawsuits, or lost revenues from customers who abandoned the firms because of their errant behavior. Most companies have

For help in study and review, boldfaced **key terms** and their definitions appear in the margin where they are first introduced. These terms are also boldfaced in the book's index and appear in the end-of-book glossary.

MATTER OF FACT

Consolidation in the U.S. Banking Industry

The U.S. banking industry has been going through a long period of consolidation. According to the Federal Deposit Insurance Corporation (FDIC), the number of commercial banks in the United States declined from 14,400 in early 1984 to 4,492 by October 2019, a decline of almost 69%. The decline is concentrated among small community banks, which larger institutions have been acquiring at a rapid pace.

Matter of Fact boxes provide interesting empirical facts, usually featuring recent data that add background and depth to the material covered in the chapter.

IRF

EXAMPLE 5.10

Timeline for present value of an ordinary annuity with \$700 end-of-year cash flows, discounted at 4%, over five years

Present Value \$3,240.93

2ND

[BGN]

2ND

[SET]

2ND

[P/Y]

1

[ENTER]

2ND

[QUIT]

5

[N]

4

[I/Y]

700

[PMT]

CPT

[PV]

-3,240.93

Calculator use Remember for annuity due calculations you must switch your calculator to beginning-of-period mode using the BGN function key, depending on your specific calculator. Then, using the inputs shown at the left, you can verify that the present value of the annuity due equals \$3,240.93. (Note: Don't forget to switch your financial calculator back to end-of-period payment mode.)

Spreadsheet use The following spreadsheet shows how to calculate the present value of the annuity due.

	A	B
1	PRESENT VALUE OF AN ANNUITY DUE	
2	Annual annuity payment	\$700
3	Annual rate of interest	4%
4	Number of years	5
5	Present value	-\$3,240.93

Entry in Cell B5 is =PV(B3,B4,B2,0,1).
The minus sign appears before the \$3,240.93 in B5 because the annuity's present value is a cost and therefore a cash outflow.

Examples are an important component of the book's learning system. Numbered and clearly set off from the text, they provide an immediate and concrete demonstration of how to apply financial concepts, tools, and techniques. Many of these feature real-world data.

Examples illustrating time-value-of-money techniques often show the use of time lines, equations, financial calculators, and spreadsheets (with cell formulas). For instructors who prefer to use tables with interest rate factors, an IRF icon appearing with some examples indicates that the example can be solved using the interest rate factors.

IRF

PERSONAL FINANCE EXAMPLE 5.7

Fran Abrams wishes to determine how much money she will have after five years if she chooses annuity A, the ordinary annuity. She will deposit the \$1,000 annual payments that the annuity provides each year into a savings account paying 7% annual interest. The following timeline depicts the situation.

\$5,750.74 Future Value

The timeline shows after five years, Fran will have \$5,750.74 in her account. Note that because she makes deposits at the end of the year, the first deposit will

Personal Finance Examples demonstrate how students can apply managerial finance concepts, tools, and techniques to their personal financial decisions.

$$PV_0 = CF_1 \div r$$

(5.7)

Key Equations appear in green boxes throughout the text to help readers identify the most important mathematical relationships.

→ REVIEW QUESTIONS

- 5-10 What is the difference between an ordinary annuity and an annuity due? Which is more valuable? Why?
- 5-11 What are the most efficient ways to calculate the present value of an ordinary annuity?
- 5-12 How can the formula for the future value of an annuity be modified to find the future value of an annuity due?
- 5-13 How can the formula for the present value of an ordinary annuity be modified to find the present value of an annuity due?
- 5-14 What is a perpetuity? Why is the present value of a perpetuity equal to the annual cash payment divided by the interest rate? Why doesn't this chapter provide an equation showing you how to calculate the future value of a perpetuity?

→ EXCEL REVIEW QUESTIONS

- 5-15 Because tax time comes around every year, you smartly decide to make equal \$5,000 contributions to your IRA at the end of every year for 30 years. Assuming a 9.5% annual rate of return, use Excel to calculate the future value of your IRA contributions when you retire in 30 years.
- 5-16 Rather than making contributions to an IRA at the end of each year, you decide to make equal \$5,000 contributions at the beginning of each year for 30 years. Assuming a 9.5% annual rate of return, use Excel to solve for the future value of your IRA contributions when you retire.

Review Questions appear at the end of each major text section. These questions challenge readers to stop and test their understanding of key concepts, tools, techniques, and practices before moving on to the next section.

Some sections have dedicated **Excel Review Questions** that ask students to demonstrate their ability to solve a financial problem using Excel.

FOCUS ON ETHICS

The Cost of Capital Also Rises

Gertrude Stein—who shaped 20th-century art and literature through discussions in her 1920s Paris home with the likes of Pablo Picasso and Ernest Hemingway—famously wrote of Oakland, California, “There is no

millions of unauthorized accounts. When the dust settled, CEO John Stumpf was out, and the bank faced a \$185 million fine from the Consumer Financial Protection Bureau in addition to \$110 million in civil settlements with

debt. Going into 2016, Wells had not reported a loss in 45 years—a record in part traceable to emphasis on consumer financial products and services, which rank among the most steady business lines for commercial banks.

FOCUS ON PRACTICE

I-Bonds Adjust for Inflation

One disadvantage of bonds is that they usually offer a fixed interest rate. Once a bond is issued, its interest rate

in this index indicates that inflation has occurred. As the rate of inflation moves up and down, I-bond interest

occurs, the change in the CPI-U is negative, and the adjustable portion of an I-bond's interest also turns neg-

FOCUS ON GLOBAL FINANCE

An International Flavor to Diversification

Earlier in this chapter (see Table 8.5), we learned that from 1900 through 2019, the U.S. stock market produced an average annual nominal return of

risk can be a factor. Political risk is the risk that a government may take actions harmful to foreign investors or that political turmoil will endanger

returns on a portfolio that included U.S. stocks as well as stocks from 22 other countries. This diversified portfolio produced returns that were not

-rate
s and
ently,
nomi-
st 1.5%
s on an
no mat-
place. In

FOCUS ON PEOPLE/PLANET/PROFITS

Diverse Boards Borrow Less

Central to the WACC calculation are the capital structure weights, the percentages of debt and equity that make up a firm's total financing. A recent study found an interesting connection between the diversity of a firm's board of directors and its borrowing habits. Specifically, companies whose boards exhibited more diversity in terms of age, gender, ethnicity, and other characteristics of board members relied less heavily on debt compared to firms with less diverse boards. Because they borrowed less,

firms with more diverse boards were less risky in the sense that their stock returns were less volatile compared with their peers having fewer diverse board members. The study's authors suggested that a diversity in the boardroom leads to moderated group decision making, and indeed they found that corporate policies focused on investment decisions and branding were relatively stable over time. The same policies at companies with less diverse boards were prone to greater year-to-year changes.⁸

► Through his character Polonius, William Shakespeare offered financial advice in his classic play, *Hamlet*. “Neither a borrower nor a lender be” was an admonition against borrowing from or lending to a friend. Tables 9.1 and 9.3 show that not many firms follow this advice. Most use at least some debt in their capital structures. What are some of the pros and cons of using leverage?

Focus On... boxes offer insights into important topics in managerial finance through the experiences of real companies, both large and small. There are four categories of *Focus On...* boxes:

Focus on Ethics boxes in every chapter help readers understand and appreciate important ethical issues and problems related to managerial finance.

Focus on Practice boxes take a corporate focus that relates a business event or situation to a specific financial concept or technique.

Focus on Global Finance boxes look specifically at the managerial finance experiences of international companies.

Focus on People/Planet/Profits boxes highlight how firms' decisions and prices in financial markets reflect societal concerns about issues ranging from climate change to diversity and inclusion.

All four types of *Focus On...* boxes end with one or more *critical thinking questions* to help readers broaden the lesson from the content of the box.

SUMMARY

FOCUS ON VALUE

The time value of money is a tool that managers and investors use to compare cash inflows and outflows occurring at different times. Because firms routinely make investments that produce cash inflows over long periods, the effective application of time-value-of-money techniques is extremely important. These techniques allow managers to compare the costs of investments they make today

REVIEW OF LEARNING GOALS

LG 1 Discuss the role of time value in finance, the use of computational tools, and the basic patterns of cash flow. Financial managers and investors use time-value-of-money techniques when assessing the value of expected cash flow streams. Alternatives can be assessed by either compounding to find future value or discounting to find present value. Financial managers rely primarily on present-value techniques. Financial calculators and electronic spreadsheets

The end-of-chapter **Summary** consists of two sections. The first section, **Focus on Value**, explains how the chapter's content relates to the firm's goal of maximizing owner wealth. This feature helps reinforce understanding of the link between the financial manager's actions and share value.

The second part of the Summary, the **Review of Learning Goals**, restates each learning goal and summarizes the key material that was presented to support mastery of the goal. This review provides students with an opportunity to reconcile what they have learned with the learning goal and to confirm their understanding before moving forward.

OPENER-IN-REVIEW

In the chapter opener, you learned that the shareholders of Kirin want the management to distribute some of the cash reserves as dividends. Kirin's shares are currently trading at ¥2,500. One market analyst has estimated that Kirin can pay dividends of ¥1,500 per share and the share value will remain at ¥1,500 after the dividends have been paid. Will the shareholders of Kirin be better or worse off with dividend payment? Calculate the percentage change in the shareholders' wealth including the cash they received and

Opener-In-Review questions at the end of each chapter revisit the opening vignette and ask students to apply lessons from the chapter to that business situation.

SELF-TEST PROBLEMS

(Solutions in Appendix)

LG 2 LG 5
IRF

- STS-1** Future values for various compounding frequencies Delia Martin has \$10,000 that she can deposit in any of three savings accounts for a three-year period. Old Reliable Bank compounds interest on an annual basis, Third National Bank compounds interest twice each year, and Friendly Credit Union compounds interest each quarter. All three have a stated annual interest rate of 4%.
- What amount would Ms. Martin have after three years, leaving all interest paid on deposit, in each financial institution?
 - What effective annual rate (EAR) would she earn in each situation?
 - On the basis of your findings in parts a and b, which institution should Ms. Martin deal with? Why?
 - If American Bank, also with a 4% stated interest rate, compounds interest continuously, how much would Ms. Martin have after three years? Does this alternative change your recommendation in part c? Explain why or why not.

Self-Test Problems, keyed to the learning goals, give readers an opportunity to strengthen their understanding of topics by doing a sample problem. For reinforcement, solutions to the Self-Test Problems appear in the appendix at the back of the book.

WARM-UP EXERCISES

LG 2


- ES-1** Assume that Amaya Chidori makes a ¥40,000 deposit into an investment account in a bank in Sendai, Japan. If this account is currently paying 0.5% per annum, what will the account balance be after two years?

LG 2 LG 5

- ES-2** Paul Jackson saved £6,200 over last two years and decided to invest in an individual savings account (ISA), which is a type of savings account that offers tax exemptions to residents of the United Kingdom. If the ISA pays 3% annual interest, what will the account balance be after three years?

Warm-Up Exercises follow the Self-Test Problems. These short, numerical exercises give students practice in applying tools and techniques presented in the chapter.

PROBLEMS

The  icon indicates auto-graded Excel projects available in MyLab Finance. Excel templates for end-of-chapter problems are also available in MyLab Finance.

LG 1

- P5-1 Using a timeline** Barnaby PLC is considering starting a new branch of its business in Northern Ireland that requires an initial outlay of £280,000 and is expected to produce cash inflows of £80,000 at the end of years 1, 2, and 3; £70,000 at the end of years 4 and 5; and £90,000 at the end of year 6.
- Draw and label a timeline depicting the cash flows associated with Barnaby's proposed investment.
 - Use arrows to demonstrate, on the timeline in part a, how compounding to find future value can be used to measure all cash flows at the end of year 6.
 - Use arrows to demonstrate, on the timeline in part a, how discounting to find present value can be used to measure all cash flows at the beginning of the period (time zero).
 - Which of the approaches—future value or present value—do you think financial managers rely on most often for decision making?

LG 4

LG 6

- P7-23 Integrative: Risk and valuation** The Best Equipment Company just released a successful new and innovative product. It is expected that the product will bring huge profits to the company, and its dividend will grow at 7% every year from now on. The last annual dividend of the company was \$0.50 per share. The current risk-free rate of return is 5%, and you require a 6% risk premium to hold the stock. How much will you pay for a share of the stock? Assume that the share price is \$50.

LG 2

Personal Finance Problem

- P5-6 Time value** Isabella wishes to purchase a Nissan GTR. The car costs £85,000 today and, after completing her graduation, she has secured a well-paying job and is able to save for the car. The price trend indicates that its price will increase by 3% to 6% every year. Isabella wants to save enough to buy the car in five years from today.

LG 6

- P5-66 ETHICS PROBLEM** Samantha Fong sold her home in San Francisco in 2020 for \$1.34 million, which was the median home price for that city. Samantha had lived in that house for 17 years, having purchased it from Michael Shoven in 2003 for \$711,000. What average annual rate of return did Samantha earn on her home, ignoring things such as property taxes and the costs of maintaining the home? Would you say that Samantha somehow “swindled” Michael? Would your answer to that question be influenced by the knowledge that over those 17 years, the average annual return on U.S. stocks was a little more than 10%?

SPREADSHEET EXERCISE

Excel

At the end of 2019, Uma Corporation is considering a major long-term project in an effort to remain competitive in its industry. The production and sales departments have determined the potential annual cash flow savings that could accrue to the firm if it acts soon. Specifically, they estimate that a mixed stream of future cash flow savings will occur at the end of the years 2020 through 2025. The years 2026 through 2030 will see consecutive \$90,000 cash flow savings at the end of each year. The firm estimates that its discount rate over the first six years will be 7%. The expected discount rate over the years 2026 through 2030 will be 11%.

Comprehensive Problems, keyed to the learning goals, are longer and more complex than the Warm-Up Exercises. In this section, instructors will find multiple problems that address the important concepts, tools, and techniques in the chapter.

A short descriptor identifies the essential concept or technique of the problem. Problems labeled as **Integrative** tie together related topics.

On MyLab Finance, students can find Excel templates that help them set up a structure for solving end-of-chapter problems. These templates not only help them get started on a problem, but they also provide examples of how to begin to set up basic Excel models.

Personal Finance Problems

specifically relate to personal finance situations and Personal Finance Examples in each chapter. These problems will help students see how they can apply the tools and techniques of managerial finance in managing their own finances.

Every chapter includes a **Spreadsheet Exercise**. This exercise gives students an opportunity to use Excel software to create one or more spreadsheets with which to analyze a financial problem. The spreadsheet to be created is often modeled on a table or Excel screenshot located in the chapter.

Integrative Case 1

South Trading Ltd.

Jatin Koorgi, CFO of South Trading Ltd., is working on the financial plans and projections for his next board meeting. South Trading trades in coffee and tea produced across India, and is one of the world's largest suppliers for multinational tea and coffee brands. It now plans to acquire coffee plantations in Asia, South America, and Africa and vertically integrate its supply chain. It is expected that this vertical integration will allow South Trading more control on the quality and supply of varieties of tea and coffee and charge premium prices for its products. South Trading is expected to invest ₹6 billion in this plan. Jatin's immediate task is to brief the board on the possible ways of raising this required capital for this expansion.

So far, South Trading has been operating as a private company, mostly using internal sources of capital and borrowing from its bankers to finance any capital investments. Jatin has outlined two possible options for the board to consider.

Option 1: South Trading could approach its banker, DFHC Bank, with whom it has a long-term relationship. The firm has ongoing long-term loans with this bank and uses its seasonal credit lines for procurement on a regular basis. However, Rajesh Kumar, DFHC Bank's representative to South Trading, has informed Jatin that it is unlikely for the bank to lend the entire sum of ₹6 billion to the firm. Rajesh has further explained that DFHC will gather a group of banks and each bank will share a portion of that loan. As a condition to lending such a large sum, the group of banks will demand that South Trading limits further borrowing and provides DFHC with periodic financial disclosure so that the group of banks can monitor the firm's financial condition.

An **Integrative Case** at the end of each part of the book challenges students to use what they have learned over the course of several chapters.

DEVELOPING EMPLOYABILITY SKILLS

For students to succeed in a rapidly changing job market, they should be aware of their career options and how to go about developing a variety of skills. We focus on developing these skills in a variety of ways.

Excel modeling skills—Each chapter contains a Spreadsheet Exercise that asks students to build an Excel model to help solve a business problem. Many chapters provide screenshots showing completed Excel models designed to solve in-chapter examples. Many chapters contain Excel Review Questions that prompt students to practice using Excel to solve specific types of problems. Excel templates are available on MyLab Finance that help students structure end-of-chapter problems so they can solve them in Excel.

Ethical reasoning skills—The *Focus on Ethics* boxes appearing in each chapter describe situations in which business professionals have violated ethical (and in some cases even legal) standards and have suffered consequences as a result. These boxes will help students recognize the ethical temptations they are likely to face while pursuing a finance career and the consequences that they may suffer if they behave unethically. Each chapter ends with an Ethics Problem that asks students to consider the ethical dimensions of some business decision.

Critical thinking skills—Nearly every significant financial decision requires critical thinking because making optimal decisions means weighing the marginal benefits and costs of alternative plans. To weigh those benefits and costs, one must first identify and quantify them. Nearly every chapter in this textbook discusses how financial analysts place a value on the net benefits associated with a particular decision. Students who master this material will be prepared to ask the tough questions necessary to assess whether a particular course of action creates value for shareholders.

Data analysis skills—Financial work is about data. Financial analysts have to identify the data that are relevant for a particular business problem, and they must know how to process that data in a way that leads to good decision making. In-chapter examples and end-of-chapter problems require students to sort out relevant from irrelevant data and to use the data that they have to make a clear recommendation about what course of action a firm should take.

TABLE OF CONTENTS OVERVIEW

The text's organization conceptually links the firm's actions and its value as determined in the financial market. We discuss every significant financial problem or decision in terms of both risk and return to assess the potential impact on owners' wealth. A Focus on Value element in each chapter's Summary helps reinforce the student's understanding of the link between the financial manager's actions and the firm's share value.

In organizing each chapter, we have adhered to a managerial decision-making perspective, relating decisions to the firm's overall goal of wealth maximization. Once a particular concept has been developed, its application is illustrated by an example, which is a hallmark feature of this book. These examples demonstrate, and solidify in the student's thought, financial decision-making considerations and their consequences.

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Introduction to Managerial Finance

CHAPTERS IN THIS PART

- 1 The Role of Managerial Finance
- 2 The Financial Market Environment

INTEGRATIVE CASE 1 Merit Enterprise Corp.

In Part 1 of *Principles of Managerial Finance*, we discuss the role of financial managers in businesses and the financial market environment in which firms operate. We outline the goals managers pursue, the decisions they make in pursuit of those goals, and the financial principles that guide those decisions. A key principle guiding managers is to take actions that benefit the firm's owners, the shareholders. Financial managers accomplish that by making operating and investment decisions expected to generate greater benefits than costs. Such decisions create wealth for shareholders, which is important because firms have to compete for the funds necessary to finance the production of goods and services. In other words, firms need money to spend on everyday operating expenses as well as on major projects like building new facilities or conducting research and development. Funds flow from investors to firms through the financial markets. Those markets offer many different choices to investors who are looking for places to invest their money with the expectation of increasing their wealth. Managers must deliver value to investors to persuade them to provide the funding firms need to thrive.

The Role of Managerial Finance

LEARNING GOALS

- LG 1** Define finance and the managerial finance function.
- LG 2** Describe some goals that financial managers pursue, and link achievement of those objectives to the general goal of maximizing the wealth of the firm's owners.
- LG 3** Identify the primary activities of the financial manager.
- LG 4** Explain the key principles that financial managers use when making business decisions.
- LG 5** Describe the legal forms of business organization.
- LG 6** Describe the nature of the principal-agent relationship between the owners and managers of a corporation, and explain how various corporate governance mechanisms attempt to manage agency problems.

WHY THIS CHAPTER MATTERS TO YOU

In your *professional* life

ACCOUNTING You need to understand the relationships between the accounting and finance functions within the firm, how decision makers rely on the financial statements you prepare, why maximizing a firm's value is not the same as maximizing its profits, and the ethical duty you have when reporting financial results to investors and other stakeholders.

INFORMATION SYSTEMS You need to understand why financial information is important to managers in all functional areas, the documentation that firms must produce to comply with various regulations, and how manipulating information for personal gain can get managers into serious trouble.

MANAGEMENT You need to understand the various legal forms of a business organization, how to communicate the goal of the firm to employees and other stakeholders, the advantages and disadvantages of the agency relationship between a firm's managers and its owners, and how compensation systems can align or misalign the interests of managers and investors.

MARKETING You need to understand why increasing a firm's revenues or market share is not always a good thing, how financial managers evaluate aspects of customer relations such as cash and credit management policies, and why a firm's brands are an important part of its value to investors.

OPERATIONS You need to understand the financial benefits of increasing a firm's production efficiency, why maximizing profit by cutting costs may not increase the firm's value, and how managers have a duty to act on behalf of investors when operating a corporation.

In your *personal* life

Many principles of managerial finance also apply to your personal life. Learning a few simple principles can help you manage your own money more effectively.

KIRIN GROUP

Making Financial Decisions

The finance team in any business needs to work closely with other teams in the organization to make myriad decisions related to pricing, marketing, cash flows, etc. They also need to put appropriate systems in place to prevent fraud and misappropriation of funds. On a strategic level, a CFO is involved in making decisions such as whether funds should be procured by borrowing from a bank, issuing bonds, or simply using up reserve cash; whether to diversify the business and, if so, which locations and ventures to diversify in; and the proportion of profit that should be reinvested in the business and the proportion that should be handed back to shareholders as dividend. The Kirin group's Chief Financial Officer, Noriya Yokota, faced a similar decision.

Kirin Beer is the second largest beer brand in Japan with operations spread over beer, nonalcoholic drinks, and a range of other products across the world.¹ In the years leading to 2020, Kirin's board of directors embarked on a mission to diversify its business using the cash reserves it had accumulated over the years.² This strategy saw Kirin buying businesses from industries as diverse as cosmetics, biotechnology, pharmaceuticals, and food and in locations as far as Brazil, Taiwan, and Myanmar. This strategy intended to further invest close to \$3 billion between 2020 and 2023.

However, this has not gone down well with the investors, and a group of shareholders has started to challenge these decisions of the board. They expect the board to hand back these reserves to shareholders through dividend or share buyback if the beer business does not need these for investments. This disagreement has led to the appointment of more independent directors to the board on behalf of shareholders.³

This illustrates several key ideas in finance. First, Kirin's shareholders believe that management has a responsibility to operate the firm in a manner that maximizes the value of the company's stock. Second, the actions of Kirin's management team seem to be at odds with what is desired by at least some of the firm's shareholders. Third, if a firm's financial performance becomes a concern, investors and other outside entities may try to reverse that trend by intervening.



Paul Andreassen/Alamy Stock Photo

1. <https://www.kirinholdings.co.jp/english/company/board/>
2. <https://www.ft.com/content/b197a5e1-4e60-4e61-9430-9c3ef0b04049>
3. <https://www.ft.com/content/c161bb06-521e-11ea-8841-482eed0038b1>

LG 1 LG 2

1.1 Finance and the Firm

The field of finance is broad and dynamic. Finance influences everything that firms do, from hiring personnel to building factories to launching new advertising campaigns. Because almost any aspect of business has important financial dimensions, many financially oriented careers await those who understand the principles of finance. Even if you see yourself pursuing a career in another discipline such as marketing, operations, accounting, supply chain, or human resources, you'll find that understanding a few crucial ideas in finance will enhance your professional success. Knowing how financial managers think is important, especially if you're not one yourself, because they are often the gatekeepers of corporate resources. Fluency in the language of finance will improve your ability to communicate the value of your ideas to your employer. Financial knowledge will also make you a smarter consumer and a wiser investor.

WHAT IS FINANCE?

finance

The science and art of how individuals and firms raise, allocate, and invest money.

managerial finance

Concerns the duties of the financial manager in a business.

Finance is the science and art of how individuals and firms raise, allocate, and invest money. The science of finance utilizes theories and concepts to establish general rules that can guide managers' decisions. The art of finance involves adapting theory to particular business situations with unique circumstances. **Managerial finance** is concerned with the responsibilities of a financial manager working in a business. Though business finance is the primary focus here, the principles of finance apply to both personal and professional decisions. At the personal level, for instance, finance helps individuals decide how much of their earnings to spend, how much to save, and how to invest their savings. Financial thinking helps consumers decide when borrowing money is appropriate and enables them to critically evaluate loan offers with different terms. In a business context, finance involves similar decisions: how firms raise money from investors, how they invest money to create value for their investors, and how they decide whether to reinvest earnings in the business or distribute them back to investors. The keys to good financial decisions are much the same for businesses and individuals, which is why most students will benefit from an understanding of finance regardless of their profession. Learning

MATTER OF FACT

Finance Professors Aren't Like Everyone Else

Financial advisors know that many people are willing to invest in the stock market if it has been rising and are reluctant to do so if it has been falling. Such "trend-chasing" behavior often leaves investors worse off than if they had invested consistently over time. Finance theory suggests that past performance of the stock market is a very poor predictor of future performance, and therefore individuals should not base investment decisions on the market's recent history. A survey found that at least one group of investors did not fall prey to trend chasing. When deciding whether to invest in stocks, finance professors were not influenced by the market's recent trend, presumably because they know that past performance does not predict the future. That's just one of the lessons in this book that can help you make better choices with your own money.⁴

4. Hibbert, Lawrence, and Prakash, 2012, "Do finance professors invest like everyone else?" *Financial Analysts Journal*.

the techniques of good financial analysis will not only help you make better financial decisions as a consumer but will also help you understand the consequences of important business decisions, no matter what career path you follow.

WHAT IS A FIRM?

What is a firm? Put simply, a firm is a business organization that sells goods or services. However, a more complete answer attempts to explain why firms exist. They exist because investors want access to risky investment opportunities. In other words, firms are risky business organizations that, if not for investors' willingness to bear risk, would have difficulty generating the necessary funds to operate. For example, most investors do not have the expertise or wealth required to start a high-tech company, so instead they invest in a company like Apple. Even though just a few individuals founded Apple in 1976, millions of investors poured vast amounts of additional money (i.e., investment capital) into the company to make it what it is today. So, ultimately, firms are intermediaries that bring together investors and risky investment opportunities. Firms pool investment capital, make risky investment decisions, and manage risky investments all on behalf of investors who would otherwise not be able to do so effectively or efficiently on their own.

WHAT IS THE GOAL OF THE FIRM?

What goal should managers pursue? This question has no shortage of possible answers. Some might argue that managers should focus entirely on satisfying customers. Firms pursuing this goal could measure their products' market shares to gauge progress. Others suggest that managers must first inspire and motivate employees; in that case, employee turnover might be the key success metric to watch. Clearly, the goal or goals that managers select will affect many of the decisions they make, so choosing an objective is a critical determinant of how businesses operate.

Maximize Shareholder Wealth

Finance teaches that the primary goal of managers should be to maximize the wealth of the firm's owners—the stockholders or shareholders. Through the years, that recommendation has generated a lot of controversy. *The Economist* magazine once referred to shareholder value maximization as “the most powerful idea in business,” and Berkshire Hathaway CEO Warren Buffett has been a long-time proponent of the need for managers to put shareholders' interests first. In contrast, Jack Welch, the former Chief Executive Officer (CEO) of General Electric and a man *Fortune* magazine named “Manager of the Century,” once called maximizing shareholder value “the dumbest idea in the world.” Welch's assessment is particularly ironic because during his leadership, almost no company generated more wealth for its shareholders than General Electric. A \$1,000 investment in GE stock made in 1981 when Welch took the reins as CEO would have grown to roughly \$67,000 by the time he retired in 2001. The simplest and best measure of stockholder wealth is the share price, so most finance textbooks (including ours) instruct managers to take actions that increase the firm's share price.

A common misconception is that when firms strive to make their shareholders happy, they do so at the expense of other constituencies such as customers, employees, or suppliers. This line of thinking ignores that a firm's relationships

with its broader stakeholders are valuable to shareholders, and in most cases, enriching shareholders requires managers to first satisfy the demands of other stakeholders. Dividends ultimately received by stockholders come from the firm's profits. It is unlikely, then, that a firm whose customers are unhappy with its products or services, whose employees are looking for jobs at other firms, whose suppliers are reluctant to ship raw materials, or whose creditors have cut it off will make shareholders rich because such a firm will likely be less profitable in the long run than one that better manages its relations with these stakeholder groups. In other words, competition forces managers who want to make shareholders wealthier to also address the concerns of other stakeholders. Firms compete with each other for customers, employees, suppliers, and creditors, so ignoring the interests of other stakeholders is not likely to create value for shareholders.

Therefore, we argue that the goal of the firm and its managers should be *to maximize the wealth of the owners*, which in most instances is equivalent to *maximizing the stock price*. This goal translates into a straightforward decision

FOCUS ON ETHICS

Do Corporate Executives Have a Social Responsibility?

In a corporation, shareholders rely on management to oversee day-to-day operations. In this relationship, stockholders are principals and management their agents. Accordingly, the first duty of a corporation's management team is to maximize shareholder wealth. What role should social responsibility—consideration of broader societal goals like slowing climate change—play in corporate decisions?

Fifty years ago, in a famous *New York Times* essay, Milton Friedman (winner of the 1976 Nobel Memorial Prize in Economic Sciences) argued corporate executives have no social responsibility beyond conforming to the basic rules of society. Their sole aim should be serving the pecuniary interests of their employers, the shareholders (subject, of course, to the constraints of the law). When executives use corporate resources to pursue other ends, they are spending someone else's money. Because it is practically impossible to guess exactly how individual shareholders would like to see their money spent to better the world—which specific

social goals to pursue and how much to spend on each—management should focus exclusively on maximizing shareholder wealth and let shareholders use the proceeds to address social concerns on their own.

Friedman would acknowledge an exception to this doctrine. If use of corporate resources to pursue a social goal actually does more for stockholders financially than any alternative project (such as investment in a marketing campaign or new factories), then social responsibility is consistent with maximizing shareholder wealth. This may have been a consideration when Exxon Mobil—the world's largest publicly traded international oil and gas company—published its position on climate change:

We have the same concerns as people everywhere—and that is how to provide the world with the energy it needs while reducing greenhouse gas emissions.

The risk of climate change is clear and the risk warrants action.

Increasing carbon emissions in the atmosphere are having a warming effect. There is a broad scientific and policy consensus that action must be taken to further quantify and assess the risks.

ExxonMobil is taking action by reducing greenhouse gas emissions in its operations, helping consumers reduce their emissions, supporting research that leads to technology breakthroughs and participating in constructive dialogue on policy options.

Addressing climate change, providing economic opportunity and lifting billions out of poverty are complex and interrelated issues requiring complex solutions. There is a consensus that comprehensive strategies are needed to respond to these risks.⁵

► How would Friedman view a sole proprietor's use of firm resources to pursue social goals?

5. Friedman, Milton, "A Friedman Doctrine—The Social Responsibility of Business Is to Increase Its Profits." *New York Times Magazine*, September 13, 1970, pp. 33, 122–26; Leube, Kurt R., *Essence of Friedman*. Stanford, CA: Hoover Institution Press, 1987; Exxon Mobil's Perspective on Climate Change: <http://corporate.exxonmobil.com/en/current-issues/climate-policy/climate-perspectives/our-position>

rule: *Managers should take only actions that they expect will increase the shareholders' wealth.* Although that objective sounds simple, its implementation is not always easy. To determine whether a particular course of action will increase or decrease shareholders' wealth, managers have to assess what return (i.e., cash inflows net of cash outflows) and risk (i.e., the uncertainty of the net cash flows) the action will bring. How managers do that is the focus of this book.

MATTER OF FACT

Firms Accelerate Dividends So That Shareholders Save on Taxes

One way that firms can maximize the wealth of shareholders is by thinking carefully about the taxes their shareholders must pay on dividends. In 2003, Congress lowered the tax rate on most dividends paid to shareholders to 15%. However, the legislation contained a provision by which the tax cuts would expire in 2013 unless Congress acted to renew them. With a political compromise to renew the tax cuts looking unlikely in the 2012 election year, many firms announced plans to accelerate dividend payments they had planned to make in early 2013 to late 2012. The Washington Post Company, for example, announced that in December 2012, it would pay out the entire \$9.80 per share dividend that it had planned to distribute in 2013. The stock market approved, as Washington Post shares rose \$5. By accelerating their dividend payments, companies such as Washington Post, Expedia, Inc., and luxury goods producer Coach, Inc., were increasing the wealth of their shareholders by helping them save taxes.

earnings per share (EPS)

The amount earned during the period on behalf of each outstanding share of stock, calculated by dividing the period's total earnings available for the firm's stockholders by the number of shares of stock outstanding.

Maximize Profit?

It might seem intuitive that maximizing a firm's share price is equivalent to maximizing its profits. That thought is not always correct, however.

Corporations commonly measure profits in terms of **earnings per share (EPS)**, which represent the amount earned during the period on behalf of each outstanding share of stock. Accountants calculate EPS by dividing the period's total earnings available for the firm's stockholders by the number of shares of stock outstanding.

EXAMPLE 1.1

Nick Dukakis, the financial manager of Neptune Manufacturing, a producer of marine engine components, is choosing between two investments, Rotor and Valve. The following table shows the EPS Dukakis expects each investment to earn over its three-year life.

Investment	Earnings per share (EPS)			
	Year 1	Year 2	Year 3	Total for years 1, 2, and 3
Rotor	\$1.40	\$1.00	\$0.40	\$2.80
Valve	0.60	1.00	1.40	3.00

If Dukakis thought he should make decisions to maximize profits, he would recommend that Neptune invest in Valve rather than Rotor because it results in higher total earnings per share over the three-year period (\$3.00 EPS compared with \$2.80 EPS).

Does profit maximization lead to the highest share price? For at least three reasons, the answer is often no. First, timing matters. An investment that provides a small profit quickly may be preferable to one that produces a larger profit in the distant future. Second, profits and cash flows are not identical. Profit is simply an estimate of how a firm is doing, an estimate influenced by many different accounting choices made by firms when assembling their financial reports. Cash flow is a more straightforward measure of the money flowing into and out of the company than is profit. Companies must pay their bills with cash, not profits, so cash flow matters most to financial managers and investors. Third, risk is a major consideration. A firm that earns a low but reliable profit might be more valuable than another firm with profits that fluctuate a great deal (and therefore can be very high or very low at different times).

Timing Other things held constant, it is better to receive cash earlier than later because a firm can invest money it has today to earn more money for the future. In our example, even though the total earnings from Rotor are smaller than those from Valve, Rotor provides much greater earnings in the first year. It's possible that by investing in Rotor, Neptune Manufacturing can reinvest the first year's earnings to generate higher profits overall than if it had invested in project Valve. If the rate of return Neptune can earn on reinvested earnings is high enough, managers may do better to invest in project Rotor even though project Valve generates higher profits over the three years.

Cash Flows Profits do not necessarily result in cash flows available to stockholders. The accounting assumptions and techniques that a firm adopts may allow it to show a positive profit even when its cash outflows exceed cash inflows. Sometimes this is just a matter of timing. For instance, suppose a retail electronics store buys a laptop from a supplier in December for \$1,000 and sells it a few days later for \$1,500. The profit on this transaction for the month of December is \$500, but what is the cash flow? If the retailer pays its supplier \$1,000 in December but allows its customer to pay for the laptop a month later in January, then the retailer actually has a net cash outflow in December.

Cash flow can also be negative, even when profit is positive, if a firm is making big new investments. For example, in 2019 Exxon Mobil reported a profit of nearly \$15 billion, but its cash flow for the year was negative because it invested more than \$24 billion to expand operations. The money invested in new plant and equipment does not all count as an expense against profit in the year it is spent because Exxon Mobil will generate revenue from that spending for many years. Thus, the company looked profitable even though it spent more cash than it brought in.

For these and other reasons, higher earnings do not necessarily produce a higher stock price. Earnings increases that signal increases in future cash flows produce higher stock prices. For example, a firm could increase its earnings this period by reducing its maintenance expenditures. If that results in lower future product quality, however, the firm may impair its competitive position, and its stock price could drop as investors anticipate lower future cash flows. Increasing earnings today by sacrificing cash flow tomorrow may lead to a lower stock price.

risk

The chance that actual outcomes may differ from those expected.

Risk Profit maximization also fails to account for **risk**, the chance that actual outcomes may differ from those expected. A basic premise in finance is that a tradeoff exists between return and risk. In general, stockholders are *risk averse*, which means they are willing to bear risk only if they expect compensation for doing so. In other words, investors demand higher returns on riskier investments, and they will accept lower returns on relatively safe investments. What this signifies in terms of the goal of the firm is that maximizing profits may not maximize the stock price. Suppose one firm is slightly more profitable than another but operates in a much riskier industry. Investors may well be willing to pay a higher price for the stock of the firm that produces lower but more predictable profits.

Putting these last two ideas together, we can say that cash flow and risk affect share price differently. Holding risk fixed, investors will pay more for the stock of a firm that generates higher cash flows (i.e., higher returns). In contrast, holding cash flow fixed, investors will pay more for shares that are less risky because they do not like risk.

Maximize Stakeholders' Welfare?

Critics of the view that managers should maximize shareholders' wealth have advanced an alternative goal advocating a balanced consideration of the welfare of shareholders and other stakeholders. **Stakeholders** are individuals who are not owners of the firm but who nevertheless have some economic interest in it. Stakeholders include employees, suppliers, customers, and even members of the community where a firm is located. Those who argue that firms should focus on stakeholders' interests maintain that shareholder value maximization as a business objective is far too narrow. This stakeholder view is widely held and indeed is reflected in the corporate law of countries such as Germany, France, and Japan, whereas the shareholder primacy is more common in the United States and the United Kingdom.

We see a number of flaws in recommending that firms neglect shareholders' interests in favor of a broader stakeholder perspective. First, as we have already pointed out, maximizing shareholder wealth does not in any way imply that managers should ignore the interests of everyone else connected to a firm. Managers cannot maximize the value of a firm if their employees, customers, and suppliers are constantly dissatisfied—usually those stakeholders are free to do business with other firms. A recent study found that when firms were added to *Fortune* magazine's list of the best companies to work for (presumably a sign of labor-friendly practices), their stock prices jumped.⁶ This evidence led the study's authors to conclude that the benefits of labor-friendly practices outweigh the costs. Apparently, what is good for employees is also good for shareholders.

Second, proponents of the stakeholder perspective often argue that in pursuit of maximizing shareholder value, managers take actions that push up the stock price in the short run to the detriment of the firm's long-run performance. In fact, to maximize shareholder value, managers must necessarily assess the long-term consequences of their actions because investors will certainly do so.

stakeholders

Groups such as employees, customers, suppliers, creditors, and others who have a direct economic link to the firm but are not owners.

6. Olubunmi Faleye and Emery Trahan, "Labor-friendly corporate practices: Is what is good for employees good for shareholders?" *Journal of Investing*, June 2011.

To illustrate, consider that in 2019, Netflix reported earnings per share (EPS) for the year of \$4.13, and over the same period Yum! Brands (operator of fast-food brands such as KFC and Taco Bell) reported an almost identical \$4.14 EPS. Yet the stock prices of these two companies could not have been more different. In early 2020, when both companies announced their 2019 results, Netflix stock was trading for roughly \$375 per share, whereas a share of Yum! Brands stock was worth about \$100. In other words, investors were willing to pay almost four times more for shares of Netflix even though it reported virtually the same EPS as Yum! Why? Several factors may contribute, but the most plausible answer is that investors envision rosier long-term prospects for Netflix. If the only matter of concern to investors was short-term profits, then the prices of Netflix and Yum! should have been much closer because their profits, at least in the short term, were nearly identical.

Third, the stakeholder perspective is intrinsically difficult to implement, and advocates of the idea that managers should consider all stakeholders' interests do not typically indicate how managers should carry it out. For example, how much emphasis should managers place on the interests of different stakeholder groups? Are the interests of employees more or less important than the desires of customers? Should members of the local community who do no business with the firm have an equal say with the firm's suppliers or creditors? When different stakeholder groups disagree on the action a firm should take, how should managers make important decisions? In contrast, the goal of shareholder maximization clarifies what actions managers should take.

Fourth, many people misinterpret the statement that managers should maximize shareholder wealth as implying that managers should take any action, including illegal or unethical actions, that increases the stock price. Even the most ardent supporters of shareholder value maximization as the firm's primary goal acknowledge that managers must act within ethical and legal boundaries.

THE ROLE OF BUSINESS ETHICS

business ethics

Standards of conduct or moral judgment that apply to persons engaged in commerce.

Business ethics are standards of conduct or moral judgment that apply to persons engaged in commerce. Violations of these standards involve a variety of actions: "creative accounting," earnings management, misleading financial forecasts, insider trading, fraud, bribery, and kickbacks. The press has reported many such violations in recent years, involving such well-known companies as Facebook, which was hit with a record \$5 billion fine for mishandling users' information, and Volkswagen, where engineers set up elaborate deceptions to get around pollution controls. In these and similar cases, the offending companies suffered various penalties, including fines levied by government agencies, damages paid to plaintiffs in lawsuits, or lost revenues from customers who abandoned the firms because of their errant behavior. Most companies have adopted formal ethical standards, although adherence to and enforcement of those standards vary. The goal of such standards is to motivate business and market participants to abide by both the letter and the spirit of laws and regulations concerned with business and professional practice. Most business leaders believe that businesses actually strengthen their competitive positions by maintaining high ethical standards.

Ethical Guidelines

Robert A. Cooke, a noted ethicist, suggests that the following questions be used to assess the ethical viability of a proposed action.⁷

1. Is the action arbitrary? Does it unfairly single out an individual or group?
2. Does the action violate the moral or legal rights of any individual or group?
3. Does the action conform to accepted moral standards?
4. Are alternative actions less likely to cause harm?

Many firms address the issue of ethics by establishing corporate ethics policies that outline a set of principles guiding what their employees must or must not do. Some firms go further and make their ethical standards the centerpiece of their corporate image. Google famously adopted the motto “Don’t be evil.” Even for Google, however, ethical dilemmas are unavoidable in business. The *Focus on Practice* box provides an example of ethical concerns confronting Google in the wake of the 2016 U.S. presidential election.

FOCUS ON PRACTICE

Must Search Engines Screen Out Fake News?

During his January 11, 2017, press conference, President-elect Donald Trump berated reporter Jim Acosta and his employer, CNN, saying, “You are fake news.” For news organizations to question the validity of facts cited by politicians was nothing unusual, especially during an election year, but throughout the 2016 presidential election cycle, Trump turned that dynamic on its head through his confrontations with CNN and other news organizations. These exchanges sparked a debate about the responsibility of Google, Facebook, and other Internet-based companies to identify websites spreading fake news.

Google offers an interesting case study on value maximization and corporate ethics. In 2004, Google’s founders provided “An Owner’s Manual” for shareholders, which stated that “Google is not a

conventional company” and that the company’s ultimate goal “is to develop services that significantly improve the lives of as many people as possible.” The founders stressed that running a successful business is not enough; they also want Google to make the world a better place. In light of that objective, what responsibility did Google have in helping voters distinguish real news from fake news? Just one month before the election, Google introduced a new “fact-check tag,” to help readers assess the validity of news stories they were reading online. In subsequent months, Google introduced the fact-check tag to markets in other countries where elections were taking place, and it began new initiatives such as “CrossCheck,” an effort to combine the work of human fact checkers with computer algorithms

to identify fake news stories in France during its election cycle.

Google’s famous corporate motto, “Don’t Be Evil,” is intended to convey a willingness to do the right thing even at the cost of short-run sacrifice. Though Google may not always fully live up to its lofty motto, the company’s approach does not appear to be limiting its ability to maximize value, as the share price increased almost 2,065% from 2004 to 2020!⁸

► Is the goal of maximizing shareholder wealth necessarily ethical or unethical?

► What responsibility, if any, does Google have in helping users assess the veracity of content they read online?

7. Robert A. Cooke, “Business Ethics: A Perspective,” in *Arthur Andersen Cases on Business Ethics* (Chicago: Arthur Andersen, September 1991), pp. 2 and 5.

8. “Labeling fact-check articles in Google News,” by Richard Gingras, October 13, 2016, <https://blog.google/topics/journalism-news/labeling-fact-check-articles-google-news/>; “Google and Facebook combat fake news in France,” BI Intelligence, February 7, 2017, [businessinsider.com](https://www.businessinsider.com).

A major impetus for the development of ethics policies is the Sarbanes-Oxley Act of 2002. The act requires firms to disclose whether they have a code of ethics in place, and firms must report any waivers of those codes for senior management. Companies that do not have an ethics code must justify that decision. Many firms require their employees to sign a pledge to uphold the firm's ethics policies. Such policies typically apply to employee actions in dealing with all corporate stakeholders, including the public.

Ethics and Share Price

An effective ethics program can enhance corporate value by producing positive benefits. It can reduce potential litigation and judgment costs; maintain a positive corporate image; build shareholder confidence; and gain the loyalty, commitment, and respect of the firm's stakeholders. By maintaining and enhancing cash flow and reducing perceived risk, such actions can positively affect the firm's share price. Ethical behavior is therefore necessary for achieving the firm's goal of owner wealth maximization.

→ REVIEW QUESTIONS

- 1-1 What is the goal of the firm and, therefore, of managers and employees? Discuss how one measures achievement of this goal.
- 1-2 For what three main reasons is profit maximization potentially inconsistent with wealth maximization?
- 1-3 What is risk? Why must financial managers consider risk as well as return when they evaluate a decision alternative or action?
- 1-4 Is maximizing shareholder wealth inconsistent with having concern for the welfare of a firm's other stakeholders?



1.2 Managing the Firm

This book is about how managers running a firm can create value for investors through sound financial decision making. Responsibility for creating value does not rest solely or even primarily on the finance function. Marketers create value by identifying the unmet needs of customers, by making customers aware that their firm can meet those needs, and by establishing a solid brand. Employees working in the operations and supply chain functions contribute to a firm's value by streamlining manufacturing processes and securing reliable raw materials sources at reasonable cost. Human resources professionals help acquire and retain the talent the firm needs to achieve success. Accountants track performance, help create financial plans and budgets, and ensure compliance with a host of regulatory requirements. And of course, financial managers advise all their peers in other functions on the financial consequences of their decisions.

The point is that all employees, regardless of how their work helps enhance the firm's value, will interact with financial managers and will benefit from a basic knowledge of financial principles. Every firm has limited resources, and employees in each part of a firm need some of those resources to function. Inside a firm, resource allocation is partly a matter of negotiation. Those who can make a better case that their work adds value will be more successful in acquiring the

needed resources. Often the key to negotiating successfully is understanding the language of finance. To be a successful marketer or supply chain analyst or human resources professional, you must be able to explain how your work adds value in financial terms. This book will help you do just that.

THE MANAGERIAL FINANCE FUNCTION

Financial managers touch every part of a firm because everything that a firm does has some kind of financial impact. Employees in a firm's finance department help control costs on the factory floor. They analyze the market potential of new products and services. They quantify the costs and benefits of hiring additional workers. They assist in mitigating risks associated with unexpected movements in interest rates, commodity prices, and exchange rates. How do they accomplish all these things? The answer is that they rely on an essential set of principles and tools that are transferable to many different business applications. The managerial finance function is therefore not just about what financial managers do but also (and more importantly) about the methods they rely on daily.

Financial Managers' Key Decisions

Broadly speaking, most decisions that financial managers make, or help their colleagues in other functions make, fall into three broad categories: investment decisions, financing decisions, and working capital decisions. Some specialized areas of managerial finance do not fit neatly into any of these three categories, but the vast majority of decisions by financial managers relate to these broad areas.

investment decisions

Decisions that focus on how a company will spend money on long-term projects that ultimately determine whether the firm creates value for its owners.

Investment decisions focus on how a company will spend money on long-term projects that ultimately determine whether the firm creates value for its owners. For a semiconductor company like Intel, investment decisions revolve around how much money the firm should spend on new factories (each of which cost \$5 billion to build), how much it should devote to research and development (Intel spends more than \$13 billion annually), and how much the company should invest in its traditional microprocessors versus chips for newer wearable devices and products related to the Internet of Things. These are the most important decisions made by firms because they largely dictate whether a company succeeds or fails in the long run. Financial managers contribute to these decisions by performing an analysis called capital budgeting, which we will discuss at length in subsequent chapters. Briefly, *capital budgeting* is a technique that helps managers decide which projects create the most value for shareholders. Essentially, capital budgeting identifies investment opportunities for which benefits exceed costs, which are exactly the projects managers should pursue to achieve the goal of maximizing firm value.

financing decisions

Decisions that determine how companies raise the money they need to pursue investment opportunities.

Once firms know how they want to invest, they must decide where to obtain funding for those investments. **Financing decisions** determine how companies raise the money needed for investment opportunities. When firms are just getting started and as they continue to grow, they require capital from investors. **Capital** is the money raised by firms to finance their activities. For this reason, the financing decision is also called the *capital structure decision*. Firms may raise capital by borrowing money from banks or other investors, or they may receive money from investors who want an ownership stake. Firms that are profitable can reinvest their earnings and thereby gain access to another form of capital. Although a firm's financing decisions are probably less important than its investment decisions, the mix of funding sources that a company uses has important

capital

The money that firms raise to finance their activities.

implications. For example, if a company chooses to borrow money, it is obligated to repay that money even if business conditions deteriorate. That’s what happened to Payless ShoeSource when it did not have enough cash to pay its debt and went bankrupt in February 2019. But relying on debt financing is not always bad. Borrowing money can benefit shareholders, in part because in the United States and many other countries, the tax code provides an incentive to borrow. Specifically, the U.S. corporate tax code allows firms to treat interest payments to lenders as a deductible business expense (which lowers the after-tax cost of borrowing for the firm), whereas tax laws do not give firms a deduction for cash dividend payments made to shareholders.

To visualize the difference between a firm’s investment and financing decisions, refer to the balance sheet shown in Figure 1.1. Investment decisions generally refer to the items that appear on the left-hand side of the balance sheet, and financing decisions relate to the items on the right-hand side. Keep in mind, though, that financial managers make these decisions based on how they affect the firm’s value, not on the accounting principles used to construct a balance sheet.

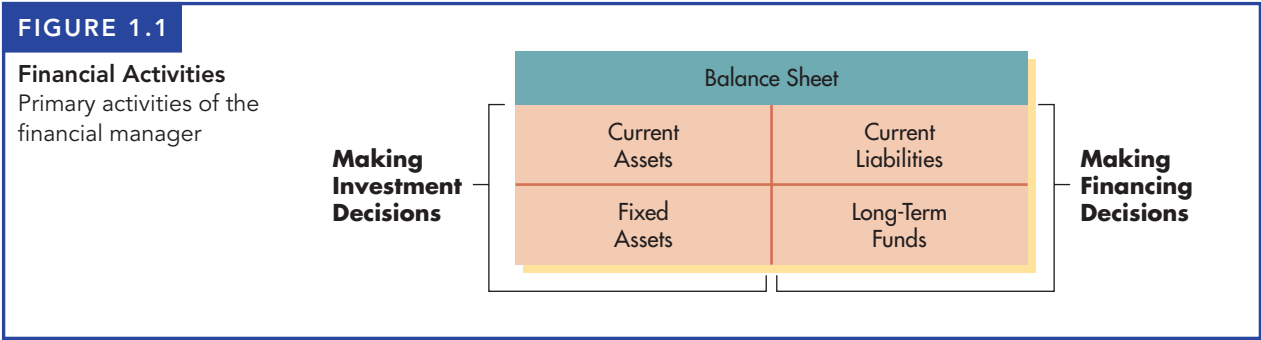
Whereas the investment and financing decisions of firms often involve major strategic initiatives, on a day-to-day basis, financial managers spend more time making various types of short-term financial decisions. **Working capital decisions** refer to the management of a firm’s short-term resources. These decisions involve tracking and forecasting the firm’s cash position, making sure that the firm pays its bills on time and receives timely payments from customers, and calculating the optimal amount of inventory the firm should keep on hand. Collectively, the resources that a firm invests in items such as cash, inventory, accounts receivable, and accounts payable are known as the firm’s *working capital*. For many firms, the funds invested in working capital are considerable. For example, in January 2020, Apple reported that it held roughly \$107 billion in cash and various short-term investments.

working capital decisions
Decisions that refer to the management of a firm’s short-term resources.

Principles That Guide Managers’ Decisions

Financial managers perform many different roles in a large company, but no matter the job title, a common set of financial principles guides their decisions and the advice they give to colleagues working in different functions. Specifically, we highlight five key principles of great importance in managerial finance.

The Time Value of Money Timing matters in finance. Having money today is better than having it later because firms and individuals can invest the money on hand to earn a return. In other words, a dollar today is worth more than a



dollar in the future. Investing a dollar today means that the dollar will grow to more than a dollar over time. The implication of this principle for managers is that, all else being equal, investments that provide faster payoffs are preferred over investments with distant payoffs. This does not suggest that firms must necessarily have an excessive focus on short-term results, but when an investment's payoffs come in the distant future, those payoffs must be larger to justify waiting for them.

The Tradeoff between Return and Risk “Nothing ventured, nothing gained” is a famous quote attributed to Benjamin Franklin. The equivalent financial principle is that a tradeoff exists between return and risk. Investors who want to earn higher returns must accept greater risk. Or, from the perspective of a business, a firm that puts investors' funds in riskier projects must offer those investors higher returns. For financial managers tasked with advising firms on investment decisions, this tradeoff means that any analysis of alternative investment projects should quantify both the returns that investments may provide and the risks that they entail.

Cash Is King In discussing the differences between maximizing shareholder value and profits, we noted that cash flow and profit are not identical concepts. In finance, cash flow matters more than profit because firms can pay investors only with cash, not with profits. Ultimately, the cash flows that investors receive or expect to receive over time determine the firm's value. If a firm is not generating positive cash flow, it cannot pay investors, even if its financial statements show that it is earning a profit. The same is true regarding a firm's dealings with its suppliers, employees, and anyone else to whom the firm owes money—those bills must be paid with cash.

Competitive Financial Markets When we think of the term *competition* in a business context, what usually comes to mind is the competition that occurs between firms in the markets for goods and services—Coke versus Pepsi, Samsung versus Apple, and so on. But firms also compete in another sense. They compete in the financial markets for access to capital controlled by investors. From time to time, most companies must raise money to fund new investments, and to succeed in raising money, firms have to convince participants in the financial markets that their ideas are as good or better than those of other firms seeking funding. Investors diligently search for the opportunities that provide the highest returns for a given risk level, so companies that cannot convince investors that their investment ideas will generate competitive rates of return may have difficulty raising capital.

Furthermore, at least for companies that have publicly traded stock, the financial markets constantly send signals to managers about how they are performing. Investors trade rapidly as they learn new information about companies, so stock prices also respond rapidly to news as it emerges. When investors hear positive news about a company (e.g., when a company announces better-than-expected financial results), the company's stock price moves up. On February 28, 2020, the biotech firm, Novavax, announced that it was making significant progress in developing a vaccine for the coronavirus that was spreading worldwide, and the firm's stock price jumped 16%. In contrast, stock prices fall when unfavorable news becomes known. Following the news on March 11, 2020, that the

United States was imposing a ban on most travel between the U.S. and Europe, the stock of the airline manufacturer, Boeing, dropped 18% in a single day.

How should managers respond to signals sent by the stock market? Although the opinions of investors as revealed by movements in a company's stock price are not always correct, managers should pay close attention to what the market is telling them. Investors have very strong incentives to evaluate the information they receive about companies in an unbiased way. If a company announces plans for a major new investment (e.g., the acquisition of another company) and its stock price falls, managers should recognize that the market is skeptical about the new investment, and they should strive to understand that skepticism.

Incentives Are Important We have made a case for managers to operate firms with the aim of benefiting shareholders, but do managers behave this way? In many instances and for a variety of reasons, the answer is no. In part, this results from managers' incentives not being properly aligned with the interests of shareholders. For example, suppose one company makes an offer to purchase another company. The buyer's offer is quite attractive in the sense that the price offered is well above the current market price of the target company's stock. Accepting the offer seems like the best option for shareholders. However, the CEO of the target may decline the offer, knowing that if the acquisition takes place, he is likely to lose his job and the large salary that goes with it. Similarly, senior managers of the buyer in this example may not have their shareholders' best interests in mind. CEOs and other senior executives tend to earn higher pay when they run larger organizations, so perhaps the motivation to buy another company is about increasing management's compensation. In fact, CEO bonuses sometimes depend more on completing an acquisition deal than on whether that deal creates value for shareholders.

The example above illustrates the **principal-agent problem** that arises when the owners (principals) and managers (agents) of a firm are not the same people, and the agents fail to act in the interest of the principals. In this instance, what is best for shareholders and what managers believe to be in their own best interests may not be aligned. The principal-agent problem is particularly important in large corporations, in which a great degree of separation exists between the owners of a firm and its managers. We will explore the principal-agent problem, with potential solutions, as we study alternative ways of organizing businesses later in this chapter.

principal-agent problem

A problem that arises when the owners (principals) and managers (agents) of a firm are not the same people, and the agents fail to act in the interest of the principals.

treasurer

A key financial manager, who manages the firm's cash, oversees its pension plans, and manages key risks.

director of risk management

Works with the treasurer to manage risks that the firm faces related to movements in exchange rates, commodity prices, and interest rates.

controller

The firm's chief accountant, who is responsible for the firm's accounting activities, such as corporate accounting, tax management, financial accounting, and cost accounting.

Organization of the Finance Function

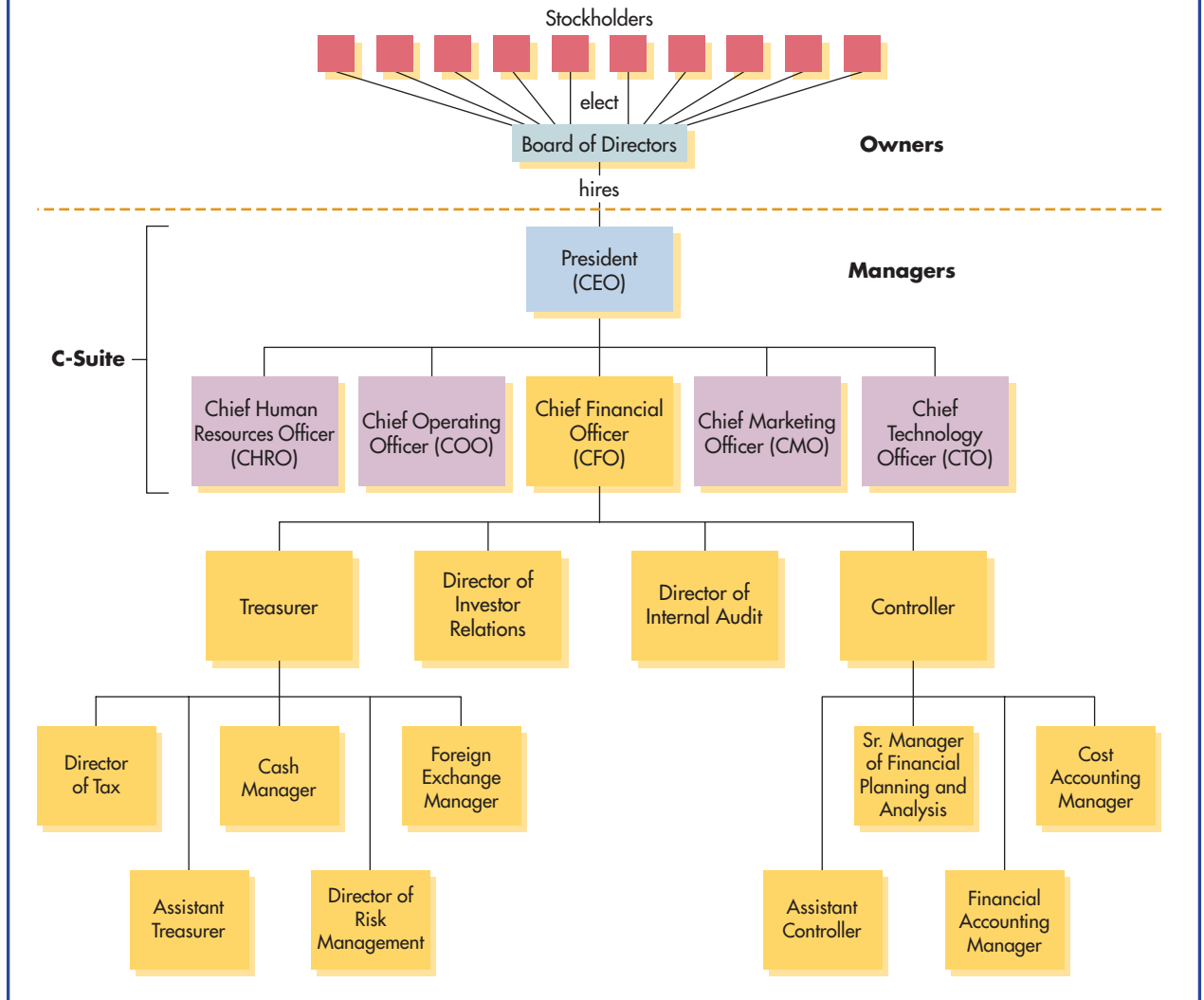
The scope of the managerial finance function depends on the size of the firm. In very small firms, this function focuses largely on accounting and control issues. As a firm grows, the finance function typically separates from the accounting department and becomes a unique organization linked directly to the company president or CEO through the chief financial officer (CFO). The lower portion of the organizational chart in Figure 1.2 shows the structure of the finance function in a typical medium to large firm.

Reporting to the CFO are the treasurer, the controller, the director of investor relations, and the director of internal audit. The **treasurer** manages the firm's cash, investing surplus funds when available and securing outside financing when needed. The treasurer also oversees a firm's pension plans and, together with the **director of risk management**, manages critical risks related to movements in

FIGURE 1.2

Corporate Organization

The general organization of a corporation and the finance function (which is shown in yellow)

**director of investor relations**

The conduit of information between the firm and the investment community.

director of internal audit

Leads a team charged with making sure that all business units follow internal policies and comply with government regulations.

foreign currency values, interest rates, and commodity prices. The **controller** has a role more centered on accounting, budgeting, and tracking the performance of a business unit. The **director of investor relations** is the conduit of information between the firm and the investment community. The **director of internal audit** leads a team that is charged with making sure that all units within the firm are following internal policies and complying with government regulations. Some of these jobs have a very external focus, such as the treasurer, who must keep a close eye on a wide range of financial markets, and the director of investor relations, who communicates regularly with the outside investment community. Other jobs have a more internal focus, such as the controller position.

foreign exchange manager

The manager responsible for managing and monitoring the firm’s exposure to loss from currency fluctuations.

marginal cost–benefit analysis

Economic principle that states that financial decisions should be made and actions taken only when the marginal benefits exceed the marginal costs.

If international transactions are important to a firm, it may well employ finance professionals whose job is to monitor and manage the firm’s exposure to loss from currency fluctuations. These managers can “hedge,” or protect against such a loss by using a variety of financial instruments. These **foreign exchange managers** typically report to the firm’s treasurer.

Relationship to Economics

Finance is closely related to economics. Financial managers must understand the economic environment and must be alert to the consequences of varying levels of economic activity and changes in economic policy. They must also be able to use economic theories as guidelines for business decisions. Examples include supply-and-demand analysis, profit-maximizing strategies, and price theory. The primary economic principle used in managerial finance is **marginal cost–benefit analysis**, the tenet that managers should base decisions on the marginal benefits and costs associated with some action. That is, managers should take actions that generate higher marginal benefits than marginal costs.

EXAMPLE 1.2

Justin Liter, owner of the Houston-based barbeque restaurant, Game of Bones, is contemplating an investment decision. Currently, customers who buy soft drinks fill their own orders using a dispenser that offers a choice of seven different drink flavors. For \$20,000, Justin can replace his current dispenser with a new one that lets customers choose among 100 plus different soft drinks. Justin believes that if he purchases this new dispenser, more drink orders will pour in. Specifically, with the current dispenser, Justin’s restaurant brings in about \$73,000 in net cash flow (i.e., revenue minus the cost of operating the machine and providing cups and lids) per year. With the new machine in place, Justin estimates that net soft drink cash flow will surge to \$100,000 per year. If Justin buys the new dispenser, he can sell the used one to another restaurateur for \$5,000. Applying marginal cost–benefit analysis, Justin organizes the data as follows:

Net soft drink cash flow with new dispenser	\$100,000
Less: Cash flow with old dispenser	<u>73,000</u>
(1) Marginal benefit	<u>\$ 27,000</u>
Cost of new dispenser	\$ 20,000
Less: Proceeds from sale of old dispenser	<u>5,000</u>
(2) Marginal cost	<u>\$ 15,000</u>
Net benefit [(1) – (2)]	<u>\$ 12,000</u>

Because the marginal benefit of \$27,000 exceeds the marginal cost of \$15,000, Justin is inclined to buy the new dispenser. Justin recognizes that his analysis is still incomplete because he has considered marginal costs and benefits for just one year, he has made no adjustment for the time value of money (i.e., he must pay the costs up front but the benefits come later), and he has not considered any tax implications of this decision. Still, at first glance, buying the new dispenser looks like a good decision.

Relationship to Accounting

The firm's finance and accounting activities are closely related and generally overlap. In small firms, accountants often carry out the finance function; in large firms, financial analysts often help compile accounting information. We can, however, note two differences between finance and accounting; one is related to the emphasis on cash flows, and the other to decision making.

accrual basis

Preparation of financial statements that recognizes revenues and expenses when they occur (regardless of when cash actually exchanges hands).

matching principle

GAAP accrual accounting rule that says a firm should report expenses in the same period in which it earns the related revenue, regardless of when the expenses are paid or the revenues collected.

cash basis

Recognizes revenues and expenses only when actual inflows and outflows of cash occur.

Emphasis on Cash Flows The accountant's primary function is to develop and report data for measuring the performance of the firm. Using generally accepted accounting principles (GAAP), the accountant prepares financial statements on an **accrual basis** that recognizes revenues and expenses when they occur (regardless of when cash actually exchanges hands). An important rule of GAAP's accrual accounting is the **matching principle** that says a firm should report expenses in the same period in which it earns the related revenue, regardless of when the expenses are paid or the revenues collected. The accrual basis and matching principle are designed to give the most accurate possible picture of how a company performs over time.

A disadvantage of the accrual approach is that it does not give an accurate picture of the cash flowing in and out of the firm. Financial managers place a great deal of emphasis on *cash flows*, the intake and outgo of cash. They maintain solvency of the firm by making sure that the firm has enough cash to pay its bills and to make investments to compete in the marketplace. Financial managers use this **cash basis** to recognize revenues and expenses only when actual inflows and outflows of cash occur. Whether a firm earns a profit or experiences a loss, it must have sufficient cash flow to meet its obligations as they come due.

EXAMPLE 1.3

Nassau Corporation, a small yacht dealer, sold one yacht for \$1,000,000 in the calendar year just ended. Nassau originally purchased the yacht for \$800,000. Although the firm paid in full for the yacht during the year, at year's end it has yet to collect the \$1,000,000 from the customer. The accounting view and the financial view of the firm's performance during the year are given by the following income and cash flow statements, respectively.

Accounting view (accrual basis)	
Nassau Corporation income statement for the year ended 12/31	
Sales revenue	\$1,000,000
Less: Costs	800,000
Net profit	<u>\$ 200,000</u>

Financial view (cash basis)	
Nassau Corporation cash flow statement for the year ended 12/31	
Cash inflow	\$ 0
Less: Cash outflow	800,000
Net cash flow	<u>-\$800,000</u>

In an accounting sense, Nassau Corporation is profitable, but in terms of actual cash flow, it has a problem. Its lack of cash flow resulted from the uncollected accounts receivable of \$1,000,000. Without adequate cash inflows to meet its obligations, the firm will not survive, regardless of its profits.

As the example shows, accrual accounting data do not fully represent the circumstances of a firm. Thus, the financial manager must look beyond financial statements to gain insight into existing or developing problems. Of course, accountants are well aware of the importance of cash flows, and financial managers use and understand accrual-based financial statements. Financial managers use accrual-based accounting numbers and other information to make decisions that create value for investors.

PERSONAL FINANCE EXAMPLE 1.4

Individuals rarely use accrual concepts. Rather, they rely mainly on cash flows to measure their financial outcomes. Generally, individuals plan, monitor, and assess their financial activities using cash flows over a given period, typically a month or a year. Ann Bach projects her cash flows during October of this year as follows:

Item	Amount	
	Inflow	Outflow
Net pay received	\$4,400	
Rent		−\$1,200
Car payment		−450
Utilities		−300
Groceries		−800
Clothes		−750
Dining out		−650
Gasoline		−260
Interest income	220	
Misc. expense		−425
Totals	<u>\$4,620</u>	<u>−\$4,835</u>

Ann subtracts her total outflows of \$4,835 from her total inflows of \$4,620 and finds that her net cash flow for October will be −\$215. To cover the \$215 shortfall, Ann will have to either borrow \$215 (putting it on a credit card is a form of borrowing) or withdraw \$215 from her savings. Alternatively, she may decide to reduce her outflows in areas of discretionary spending such as clothing purchases, dining out, or those items that make up the \$425 of miscellaneous expense.

Decision Making A second difference between finance and accounting involves decision making. Accountants focus on collecting and presenting financial data. Financial managers evaluate the accounting information and other data to influence business decisions to create value for shareholders. Of course, this does not mean that accountants never influence decisions or that financial managers never gather data but rather that the primary emphases of accounting and finance are different.

→ REVIEW QUESTIONS

- 1–5 What are the main types of decisions that financial managers make?
- 1–6 Why is it important that managers recognize that a tradeoff exists between risk and return? Why does that tradeoff exist?

- 1-7 What is the primary economic principle used in managerial finance?
- 1-8 What are the major differences between accounting and finance with respect to emphasis on cash flows and decision making?
- 1-9 If managers do not act in the best interests of shareholders, what role might incentives play in explaining that behavior?



1.3 Organizational Forms, Taxation, and the Principal-Agent Relationship

From a legal perspective, businesses can organize themselves in a variety of ways. Different organizational forms involve various tradeoffs related to ownership, control, taxation, liability, and other factors. In this section, we examine the pros and cons of alternative legal forms for businesses.

LEGAL FORMS OF BUSINESS ORGANIZATION

One important decision that all businesses confront is how to choose a legal form of organization. This decision has significant financial implications. How a business is structured legally influences the risks borne by the firm's owners, the sources of available capital, and the taxes the firm must pay. The three most common legal forms of business organization are the *sole proprietorship*, the *partnership*, and the *corporation*. Most businesses are organized as sole proprietorships, but the largest businesses are almost always corporations. Even so, each type of organization has its advantages and disadvantages as summarized in Table 1.1.

Sole Proprietorships

sole proprietorship

A for-profit business owned by one person.

A **sole proprietorship** is a for-profit business owned by one person. More than 70% of all U.S. businesses are sole proprietorships. The typical sole proprietorship is small, and the majority of sole proprietorships operate in the wholesale, retail, service, and construction industries.

Typically, the owner (proprietor) and a few employees operate the proprietorship. The proprietor raises capital from personal resources or by borrowing. The owner is responsible for all business decisions, so this form of organization appeals to entrepreneurs who enjoy working independently. Sole proprietorships do not pay income taxes as separate entities. Rather, income from sole proprietorships “passes through” to the owner and is taxed at the personal level.

A major drawback to the sole proprietorship is **unlimited liability**, which means that the liabilities of the business are the owner's responsibility and that creditors can make claims against the owner's personal assets if the business fails to pay its debts.

unlimited liability

The liabilities of the business are the owner's responsibility, and creditors can make claims against the owner's personal assets if the business fails to pay its debts.

Partnerships

partnership

A business owned by two or more people and operated for profit.

A **partnership** is a business owned by two or more people and operated for profit. Partnerships account for about 10% of all businesses, and they are typically larger than sole proprietorships. Partnerships are common in the accounting, law, finance, insurance, and real estate industries.

TABLE 1.1 Strengths and Weaknesses of the Common Legal Forms of Business Organization			
	Sole proprietorship	Partnership	Corporation
Strengths	<ul style="list-style-type: none">• Owner receives all profits (and sustains all losses)• Low organizational costs• Income taxed only on proprietor’s personal tax return• Independence• Secrecy• Ease of dissolution	<ul style="list-style-type: none">• Owners who are limited partners have limited liability and cannot lose more than they invested• Ability to raise funds enhanced by more owners• More available brain power and managerial skill• Income taxed only on partners’ personal tax returns	<ul style="list-style-type: none">• Owners have <i>limited liability</i> and cannot lose more than they invested• Can achieve large size via sale of ownership (stock)• Ownership (stock) is readily transferable• Long life of firm• Can hire professional managers• Has better access to financing
Weaknesses	<ul style="list-style-type: none">• Owner has <i>unlimited liability</i> in that personal wealth can be taken to satisfy debts• Limited fund-raising power tends to inhibit growth• Proprietor must be jack-of-all-trades• Difficult to give employees long-run career opportunities• Lacks continuity when proprietor dies	<ul style="list-style-type: none">• Owners who are general partners have <i>unlimited liability</i> and may have to cover debts of other partners• Partnership is dissolved when a partner dies• Difficult to liquidate or transfer partnership	<ul style="list-style-type: none">• The corporation pays taxes, and corporate income is taxed a second time when distributed to shareholders as a dividend• More expensive to organize than other business forms• Subject to greater government regulation• Lacks secrecy because regulations require firms to disclose financial results

articles of partnership

The written contract used to formally establish a partnership.

Most partnerships are established by a written contract known as **articles of partnership**. Like a sole proprietorship, a partnership is a pass-through business, meaning that partnerships do not pay income tax directly. Instead, income from the partnership flows through to the partners and is taxed at the individual level. The financial and legal liability that partners assume depends on the type of partnership: general partnership, limited partnership, or limited liability partnership.

In a *general partnership* (GP), two or more general partners jointly own the business and share in all assets, profits, and financial and legal liabilities. Because the general partners have unlimited liability, creditors and other claimants can sue any of them for the business’s liabilities.

A *limited partnership* (LP) is a structure where general partners run the business and face unlimited liability for the business’s obligations, while limited partners (also known as silent partners) share in the business income but do not engage in day-to-day operations. Because they do not manage the business, limited partners enjoy **limited liability**, which is a legal provision that limits owners’ business liability to the amount they have invested in the business.

Not to be confused with a limited partnership, a *limited liability partnership* (LLP) is a structure in which all partners can participate in running the business while also facing only limited liability exposure. LLPs are common in professional services such as law and accounting, in part because they allow partners to achieve economies of scale (for example, by sharing office space and staff) and because the LLP partnership agreement usually includes a provision allowing existing partners to leave and new ones to join without dissolving the partnership.

limited liability

A legal provision that limits owners’ business liability to the amount they have invested in the business.

corporation

A legal business entity with rights and duties similar to those of individuals but with a legal identity distinct from its owners.

Corporations

A **corporation** is a business entity owned by individuals, but the corporation itself is a legal entity distinct from its owners. A corporation has the legal powers of an individual. It can sue and be sued, make and be party to contracts, and acquire property in its own name. Although fewer than 20% of all U.S. businesses are incorporated, the largest businesses nearly always are; corporations account for roughly two-thirds of total business income.

MATTER OF FACT**Number of Businesses and Income Earned by Type of U.S. Firm**

Although sole proprietorships greatly outnumber partnerships and corporations combined, they generate the lowest level of income. In total, sole proprietorships account for almost three-quarters of the number of business establishments in operation, but they earn just 10% of all business income. Corporations, on the other hand, account for just 17% of the number of businesses, but they earn almost two-thirds of all business income.⁹

	Sole proprietorships	Partnerships	Corporations
Number of firms (millions)	25.3	3.4	5.8
Percentage of all firms	73%	10%	17%
Percentage of all business income	10%	26%	64%

stockholders

The owners of a corporation, whose ownership, or equity, takes the form of common stock or, less frequently, preferred stock.

stock

A security that represents an ownership interest in a corporation.

cash dividends

Periodic distributions of cash to the stockholders.

board of directors

Group elected by the firm's stockholders and typically responsible for approving strategic goals and plans, setting general policy, guiding corporate affairs, and approving major expenditures.

One advantage of the corporate form is that corporations can raise money by selling new stock to investors. Another advantage is that the owners of a corporation, its **stockholders** (whose ownership, or *equity*, takes the form of common or preferred stock), enjoy **limited liability**, meaning they are not personally liable for the firm's debts. Their losses are limited to the amount they invested. In Chapter 7 you will learn more about stock, but for now we will simply say that **stock** is a security that represents an ownership interest in a corporation. Stockholders expect to earn a return by receiving periodic **cash dividends** or by realizing gains through increases in share price. Because the money to pay dividends generally comes from the profits that a firm earns, stockholders are *residual claimants*. This means stockholders are paid last, after the corporation pays employees, suppliers, creditors, tax authorities, and anyone else to whom it owes money. Over time, if the firm does not generate enough cash to pay everyone else, there is no residual cash flow and nothing is available for stockholders.

As noted in the upper portion of Figure 1.2, control of the corporation functions a little like a democracy. The stockholders vote periodically to elect members of the **board of directors**, which is responsible for approving strategic plans, setting general policy, guiding corporate affairs, and approving major expenditures. Most importantly, the board decides when to hire or fire top managers and establishes compensation packages for the most senior executives. The board consists of "inside" directors, such as key corporate executives, and "outside" or "independent" directors, such as executives from other companies, major shareholders, and national or community leaders. Outside directors for major corporations receive compensation in the form of cash, stock, and stock options. This compensation often totals \$250,000 per year or more.

9. Overview of Approaches to Corporate Integration, Joint Committee on Taxation, United States Congress, May 17, 2016.

FOCUS ON PEOPLE/PLANET/PROFITS

The Business Roundtable Revisits the Goal of a Corporation

In 2019, the Business Roundtable, a not-for-profit association whose members are chief executive officers (CEOs) of major U.S. companies, issued a new statement on the purpose of a public corporation. That statement affirmed a belief that the free-market system was the best way for society to generate good jobs, a strong economy with opportunity for all, and a healthy environment, but it also appeared to discard the longstanding doctrine of shareholder primacy, meaning that the goal of a corporation is to create value for shareholders. Instead, in their statement the CEOs made a commitment to deliver value to customers, invest in employees,

treat suppliers fairly and ethically, support local communities, and generate long-term value for shareholders.

Are the Roundtable CEOs renouncing shareholder wealth maximization in favor of some broader set of societal goals? For several reasons the answer isn't clear. First, an explicit goal embraced in the statement is generating long-term value for shareholders. Second, as we noted earlier in this chapter, creating wealth for shareholders does not mean ignoring the interests of other stakeholders. Rather, the companies that create the most wealth tend to balance the interests of various stakeholder groups. Affirming that those interests are important to

CEOs is not equivalent to an abandonment of shareholder interests. Third, the Roundtable's statement says nothing specific about how to balance the interests of shareholders against those of other stakeholders when and if those interests come into conflict, and it establishes no specific metrics to determine whether a corporation satisfies other stakeholders.

► What kind of actions could CEOs who are members of the Business Roundtable take that would clearly indicate that their 2019 statement truly represented a break from the shareholder primacy doctrine?

president or chief executive officer (CEO)

Corporate official responsible for managing the firm's day-to-day operations and carrying out the policies established by the board of directors.

The **president or chief executive officer (CEO)** is responsible for managing day-to-day operations and carrying out the policies established by the board of directors. The CEO reports periodically to the firm's directors.

It is important to note the division between owners and managers in a large corporation, as shown by the dashed horizontal line in Figure 1.2. This separation is the source of the principal–agent problem mentioned earlier.

Business Organizational Forms and Taxation

Taxation of Proprietorships and Partnerships Owners of pass-through businesses such as proprietorships and partnerships pay tax at the individual level, not at the business level. For individuals, income tax rates are progressive, so the tax rate rises with income. Furthermore, tax rates may vary based on the source of income. Income from “qualified” dividends and capital gains are generally taxed at a rate that is lower than the tax rate applied to “ordinary income” from wage and salaries.¹⁰ Taxes also depend on the individual's filing status (e.g., whether they are single or married). Finally, some high-income taxpayers face an additional 3.8% tax rate on investment income (e.g., interest, dividends, capital gains). Table 1.2 shows the 2020 tax rates and income brackets for both single taxpayers and married couples filing a joint return.

To use Table 1.2 to calculate a tax liability, simply multiply the tax rate times the amount of income earned in each bracket and then sum across brackets.

$$\text{Tax liability for an income bracket} = \text{income tax rate} \times \text{taxable income within the income bracket} \quad (1.1)$$

$$\text{Total tax liability} = \text{sum of tax liability for each income bracket} \quad (1.2)$$

10. Qualified dividends are those paid by U.S. corporations or foreign companies that trade on U.S. stock exchanges and for which investors have satisfied a 60-day holding requirement.

TABLE 1.2 2020 Federal Tax Rates for Individual and Joint Taxpayers

Income Tax Rate	Income brackets	
	Individual Taxpayers	Joint Taxpayers
10%	\$0 to \$9,875	\$0 to \$19,750
12%	\$9,876 to \$40,125	\$19,751 to \$80,250
22%	\$40,126 to \$85,525	\$80,251 to \$171,050
24%	\$85,526 to \$163,300	\$171,051 to \$326,600
32%	\$163,301 to \$207,350	\$326,601 to \$414,700
35%	\$207,351 to \$518,400	\$414,701 to \$622,050
37%	\$518,401 to Unlimited	\$622,051 to Unlimited
Capital Gain Tax Rate	Income brackets	
	Individual Taxpayers	Joint Taxpayers
0%	\$0 to \$40,000	\$0 to \$80,000
15%	\$40,001 to \$441,450	\$80,001 to \$496,600
20%	\$441,451 to Unlimited	\$496,601 to Unlimited
Net Investment Income Tax Rate	Income brackets	
	Individual Taxpayers	Joint Taxpayers
3.8%	Above \$200,000	Above \$250,000

EXAMPLE 1.5

Dan Webster is a partner in Webster Manufacturing. This year, Dan's share of the partnership's earnings is \$80,000 before taxes. Assuming that Dan is single and has no other income, the taxes he will owe on his business income are as follows:

$$\begin{aligned}
 \text{Total tax liability} &= (0.10 \times \$9,875) + [0.12 \times (\$40,125 - \$9,875)] \\
 &\quad + [0.22 \times (\$80,000 - \$40,125)] \\
 &= \$987.50 + \$3,630 + \$8,772.50 \\
 &= \$13,390
 \end{aligned}$$

A common misconception is that taxpayers can be worse off by earning extra income because that puts them in a higher tax bracket. Notice that Webster falls in the 22% income tax bracket (i.e., his business income is greater than \$40,125 but less than \$85,525), but the 22% rate applies *only* to income above \$40,125. He pays 10% tax on the first \$9,875 that he earns and 12% on the next \$30,250 of earnings. Only the final \$39,875 in earnings is subject to the 22% tax rate.

marginal tax rate

The tax rate that applies to the next dollar of income earned.

average tax rate

The average tax rate paid per dollar of taxable income.

In a progressive tax rate structure like that shown in Table 1.2, there is a difference between the marginal tax rate and the average tax rate. The **marginal tax rate** is the tax rate that applies to the next dollar of income earned. In Table 1.2, the marginal tax rate is 10% if the taxpayer earns less than \$9,875. If income is more than \$9,875 but less than \$40,125, the marginal tax rate is 12%. As income rises, the marginal tax rate rises. In the example above, if Dan Webster's earnings increase to \$85,526, the last \$1 in income would be taxed at the marginal rate of 24%. The **average tax rate** is the average tax rate paid per dollar of taxable income.

The average tax rate equals the total tax liability divided by the taxable income as shown in Equation 1.3.

$$\text{average tax rate} = \frac{\text{total tax liability}}{\text{taxable income}} \quad (1.3)$$

Because tax rates change with income levels, for many taxpayers the average tax rate does not equal the marginal tax rate. In the example above, Dan Webster's marginal tax rate is 22%, but his average tax rate is 16.7% (\$13,390 ÷ \$80,000). As Webster's income grows, the marginal tax rate will rise and so will the average tax rate, but the average tax rate will be the lower of the two rates. Figure 1.3 shows the taxes that Webster would pay, the marginal tax rate, and the average tax rate at four income levels: \$80,000, \$160,000, \$320,000, and \$640,000. In the figure, the red bars show the amount of tax due in each income bracket, and the blue bar shows the total tax bill. Moving from one graph to the next, the marginal tax rate and the average tax rate both increase, but the average tax rate is always less than the marginal rate.

FIGURE 1.3

Dan Webster's Total Tax Liability, Marginal Tax Rate, and Average Tax Rate for Different Income Levels

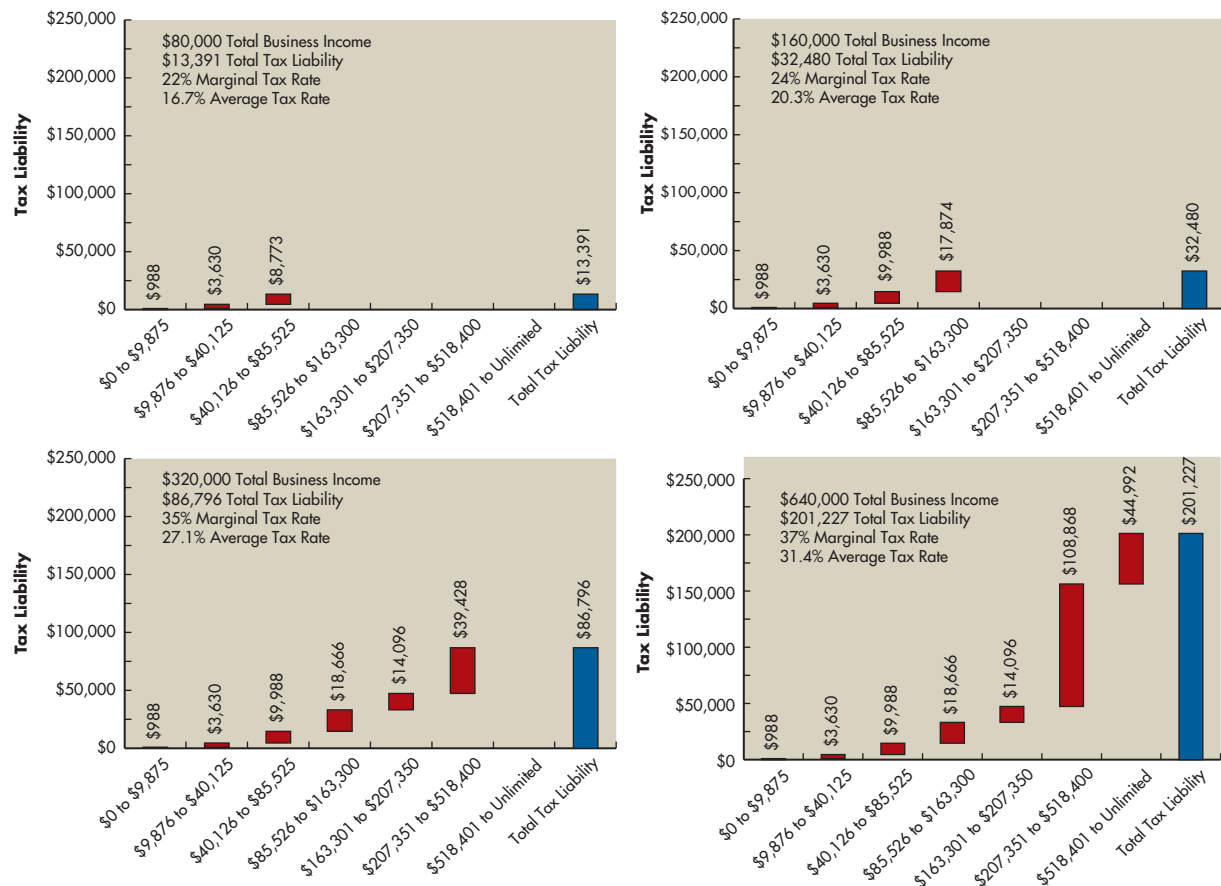


FIGURE 1.4

Marginal and Average Tax Rates at Different Income Levels for an Individual Taxpayer (for Tax Year 2020)

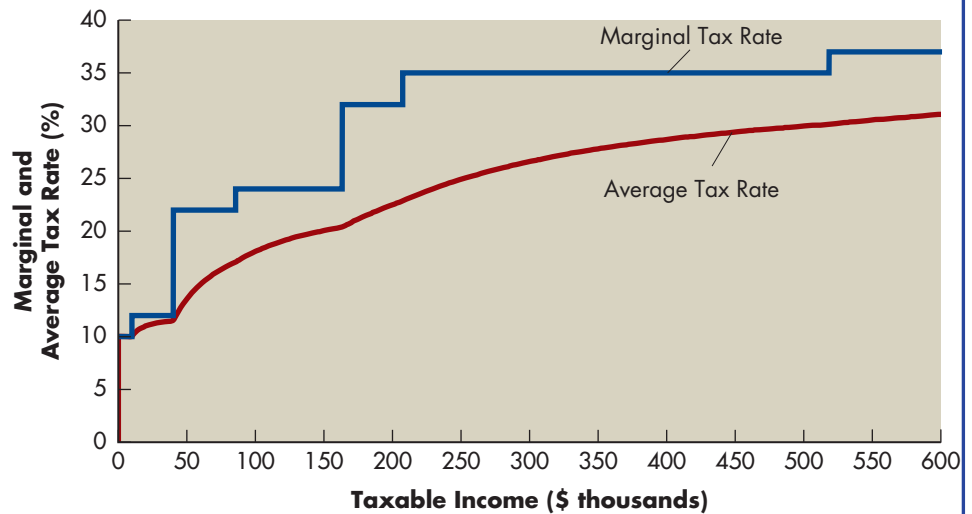


Figure 1.4 shows how the marginal and average tax rates vary with taxable income for an individual taxpayer based on the tax rates and income brackets in Table 1.2. Marginal tax rates increase abruptly each time taxable income crosses into the next higher tax bracket, but average tax rates rise more gradually.

In most business decisions that managers make, it's the marginal tax rate that really matters. Remember that managers create value for shareholders by taking actions for which the marginal benefits exceed the marginal costs. Thus, managers should focus on the marginal tax rate because that determines the marginal taxes they will pay or avoid as a consequence of taking some action.

Taxation of Corporations A major disadvantage of the corporate form of organization is that a corporation itself pays taxes, and then when income from the corporation is distributed to shareholders, they pay tax again on their individual tax returns. Thus, corporations suffer from the problem of **double taxation**—corporate income is taxed twice, first at the company level and then at the shareholder level. In tax years before 2017, corporations faced a progressive structure similar to the one that determined individuals' taxes, and the top marginal rate in that structure was 35%. That marginal rate applied to any business with taxable income over \$18.3 million, so large corporations generally fell under the 35% marginal tax rate. The Tax Cuts and Jobs Act of 2017 replaced the old, progressive corporate tax with a flat tax of 21%. By replacing the top marginal rate of 35% with a flat 21% tax rate, Congress reduced, but did not eliminate, the double-taxation burden associated with the corporate organization form and created an incentive for corporations to invest (we'll say more about that in subsequent chapters).

double taxation

A situation facing corporations in which income from the business is taxed twice—once at the business level and once at the individual level when cash is distributed to shareholders.

EXAMPLE 1.6

Peter Strong is the sole proprietor of Argaiv Software, and from that business he earned taxable income of \$300,000. Assuming that this is Peter's only source of income and that he is single, from Table 1.2 we can see that based on Peter's tax bracket, he faces a marginal tax rate of 35%. How much tax does Peter owe?

$$\begin{aligned}
 \text{Total tax liability} &= (0.10 \times \$9,875) + [0.12 \times (\$40,125 - \$9,875)] \\
 &\quad + [0.22 \times (\$85,525 - \$40,125)] \\
 &\quad + [0.24 \times (\$163,300 - \$85,525)] \\
 &\quad + [0.32 \times (\$207,350 - \$163,300)] \\
 &\quad + [0.35 \times (\$300,000 - \$207,350)] \\
 &= \$987.50 + \$3,630 + \$9,988 + \$18,666 \\
 &\quad + \$14,096 + \$32,427.50 \\
 &= \$79,795
 \end{aligned}$$

Now suppose that Argaiv Software is organized as a corporation rather than as a sole proprietorship. In that case, the company will pay a 21% corporate tax rate on the \$300,000 in earnings. That means Argaiv will pay \$63,000 ($0.21 \times \$300,000$) in taxes as a corporation and will have \$237,000 in after-tax income, which it pays to Peter as a dividend. Based on his \$237,000 income level, Peter will pay a 15% capital gain tax on the dividend income that he receives, plus he will pay the 3.8% net investment tax on the portion of his investment income that exceeds \$200,000, so his personal tax liability will be \$36,956 [$(0.15 \times \$237,000 + 0.038 \times (\$237,000 - \$200,000))$]. Adding up the taxes paid by Argaiv Software and its owner, we can see the effect of the double taxation on corporate income.

$$\text{Total tax liability} = \$63,000 + \$36,956 = \$99,956$$

Here, the company and its owner pay a combined tax bill of \$99,956, whereas the total tax bill on \$300,000 of business income was just \$79,795 under the sole proprietorship structure.

ordinary income

Income earned by a business through the sale of goods or services.

capital gain

Income earned by selling an asset for more than it cost.

Regardless of their legal form, all businesses can earn ordinary income and capital gains. A corporation earns **ordinary income** through the sale of goods or services. A **capital gain** occurs if a firm sells an asset for more than its cost. Current law treats these two types of income differently in the taxation of individuals, but not for corporations. The law requires corporations to simply add capital gains to ordinary income when calculating taxes.

The law treats interest received by corporations as ordinary income (just like capital gains), but dividends received get a special tax break. A corporation may deduct from its income dividends that it receives on stock that it holds in other domestic corporations. The amount of the deduction depends on how large of an ownership stake the corporation receiving dividends holds in the corporation paying them, but generally the deduction is 50% or more of dividends received. The dividend exclusion in effect eliminates much of the potential tax liability from dividends received by the corporation and moderates the effect of double taxation on dividends paid by the corporation.

In calculating their taxes, corporations can deduct operating expenses, as well as interest expenses they pay to lenders, subject to some limitations. The tax deductibility of these expenses reduces their after-tax cost. The following example illustrates the benefit of tax deductibility.

EXAMPLE 1.7

Two corporations, Debt Co. and No-Debt Co., earned \$200,000 before interest and taxes this year. During the year, Debt Co. paid \$30,000 in interest. No-Debt Co. had no debt and no interest expense. How do the after-tax earnings of these firms compare?

	Debt Co.	No-Debt Co.
Earnings before interest and taxes	\$200,000	\$200,000
Less: Interest expense	<u>30,000</u>	<u>0</u>
Earnings before taxes	\$170,000	\$200,000
Less: Taxes (21%)	<u>35,700</u>	<u>42,000</u>
Earnings after taxes	<u>\$134,300</u>	<u>\$158,000</u>
Difference in earnings after taxes	\$23,700	

Both firms face a 21% flat tax rate. Debt Co. had \$30,000 more interest expense than No-Debt Co., but Debt Co.'s earnings after taxes are only \$23,700 less than those of No-Debt Co. This difference is attributable to Debt Co.'s \$30,000 interest expense deduction, which provides a tax savings of \$6,300 (the tax bill is \$35,700 for Debt Co. versus \$42,000 for No-Debt Co.). The tax savings can be calculated directly by multiplying the 21% tax rate by the interest expense ($0.21 \times \$30,000 = \$6,300$). Similarly, the \$23,700 after-tax interest expense can be calculated directly by multiplying one minus the tax rate by the interest expense $[(1 - 0.21) \times \$30,000 = \$23,700]$.

The tax deductibility of expenses reduces their after-tax cost if the firm is profitable. If a firm experiences a net loss in a given year, its tax liability is already zero. Even in this case, firms can deduct losses in one year from income earned in subsequent years (prior losses cannot offset more than 80% of taxable income in any subsequent year). Note that for both accounting and tax purposes interest is a tax-deductible expense, whereas dividends are not. Because dividends are not tax deductible, their after-tax cost is equal to the amount of the dividend.

AGENCY PROBLEMS AND AGENCY COSTS

Large corporations have tens of thousands of shareholders, and the vast majority of them have no managerial responsibility. The professional managers who run corporations are the *agents* of the shareholders, and they are entrusted to take actions in the shareholders' best interests. As we have already noted, managers may instead act with their own interests in mind. In most cases, if managers fail to do what shareholders want them to do, they will also fail to maximize shareholder wealth. The unavoidable conflict between a firm's principals (shareholders) and their agents (managers) gives rise to a variety of costs that owners must shoulder. **Agency costs** represent those costs that shareholders bear (or, equivalently, the loss in value that they endure) because managers pursue their own interests. Agency costs may include such things as an expensive private jet used by the CEO or the cost of hiring outside auditors to verify the accuracy of the financial reports produced by managers. Another type of agency cost arises when managers make suboptimal investment

agency costs

The costs that shareholders bear due to managers' pursuit of their own interests.

decisions, that is, making investments that decrease shareholder value or failing to make investments that would increase the stock price. Of course, shareholders are generally sophisticated people, and they are aware of the consequences of delegating managerial responsibility to agents. So, to help ensure that managers act in ways consistent with the interests of shareholders, and therefore to mitigate agency costs, shareholders aim to establish a range of corporate governance practices. Society at large also influences corporate governance through the laws and regulations that governments establish and with which firms must comply.

CORPORATE GOVERNANCE

corporate governance

The rules, processes, and laws by which companies are operated, controlled, and regulated.

Corporate governance refers to the rules, processes, and laws by which companies are operated, controlled, and regulated. Governance defines the rights and responsibilities of the corporate participants, such as the shareholders, board of directors, managers, and other stakeholders, as well as the rules and procedures for making corporate decisions. A well-defined corporate governance structure is intended to benefit all corporate stakeholders by ensuring that the firm is run in a lawful and ethical fashion, in full compliance with all corporate regulations.

Both internal and external forces influence firms' governance practices. In terms of internal influences, shareholders, through the board of directors, exert influence on how a firm is governed. But when internal corporate governance mechanisms fail, external forces may step in. Many of the most important laws and regulations affecting U.S. corporations were passed in the wake of some kind of scandal, brought about in part because of corporate governance failures on a wide scale.

Internal Corporate Governance Mechanisms

Primary responsibility for establishing a firm's corporate governance policies rests with the board, which is responsible for hiring and firing the CEO and for setting compensation for senior managers. Boards try to align the interests of managers and shareholders when establishing compensation policies. At most large companies, the pay of senior employees consists of a fixed base salary combined with a variable component tied to the firm's performance. For example, senior managers might receive an extra cash bonus if the firm meets particular revenue or earnings targets. A more direct way to create incentives for managers to act in shareholders' interests is through awards of stock options, restricted stock, and other forms of equity compensation. **Stock options** allow managers to buy shares of the company's stock at a fixed price. For example, suppose that a company's stock is worth \$45 per share at the beginning of the year. The board might include 100,000 stock options in the CEO's compensation package, each of which allows the CEO to buy one share of stock for \$45 at any time over the next few years. That gives the CEO a tremendous incentive to take actions that increase the stock price. If the stock price rises to \$55, then the CEO can buy 100,000 shares for \$45 each and then immediately resell them at the \$55 market price, pocketing a profit of \$1 million. The higher the stock price goes, the more the CEO benefits (and the more shareholders benefit, too). However, if the CEO takes actions that reduce the stock price below \$45, then those stock options have little value.

Companies may link the pay of senior managers to the performance of the company's stock price in other ways. Firms often reward senior managers by giving them **restricted stock**, which are shares of stock that do not fully transfer from the company to the employee until certain conditions are met. These

stock options

Securities that allow managers to buy shares of stock at a fixed price.

restricted stock

Shares of stock paid out as part of a compensation package that do not fully transfer from the company to the employee until certain conditions are met.

conditions might relate to the length of an employee's service or to meeting performance targets. When restricted stock is *fully vested*, ownership of the shares formally transfers to the employee. Obviously, the value of restricted shares is directly tied to the company's stock price. Often employees must wait several years (known as the *vesting period*) before their restricted stock is fully vested, and even then, companies may impose *minimum holding requirements*, meaning that an employee cannot immediately sell all their restricted shares, even if they are fully vested, as long as the employee remains at the firm. Vesting requirements and minimum holding requirements ensure that the compensation of a firm's senior manager is always at least partially tied to the performance of the company's stock.

MATTER OF FACT

CEO Pay Around the World

Both the amount that CEOs receive in compensation and the form their compensation takes vary greatly around the world. A recent report noted that median pay for CEOs in the United States was \$14.9 million, nearly three times more than the median pay for CEOs from non-U.S. companies. British CEOs earned the second highest median pay at \$10.5 million. On the European continent, German and French CEOs earned roughly half of what their British counterparts make, at \$5.4 million and \$4.0 million, respectively. Japanese CEOs received even less, with median pay at \$1.5 million.

Given these large differences in total compensation, the base salaries of CEOs were surprisingly similar. For instance, the median base salary for a U.S. CEO was \$5.1 million, compared with \$4.1 million for a German CEO. What, then, caused the variations in total CEO pay? These were driven mostly by differences in the use of equity-based compensation. As an example, the portion of CEO pay coming in the form of stock or stock options was 60% for U.S. and U.K. firms, but in Germany and France, the fraction paid in equity totaled less than 24%. Japan was an even more dramatic outlier, with equity-based compensation accounting for just 10% of total CEO pay. Recall that the U.S. and U.K. legal systems emphasize the duty of managers to shareholders, whereas legal systems elsewhere place more emphasis on stakeholders. Those differences are reflected in equity-based CEO compensation around the world.¹¹

Corporate compensation plans have been closely scrutinized by stockholders, the Securities and Exchange Commission (SEC), and other government entities. The total compensation in 2019 for the chief executive officers of the 500 largest U.S. companies is considerable. For example, in 2019, Tesla CEO Elon Musk earned more than \$595 million, mostly from stock option awards.

External Corporate Governance Mechanisms

If the board of directors does not effectively monitor senior management and establish sound governance practices, several external influences may emerge to fill the void. First, the firms' own investors may exert an effect on senior managers. Second, if investors cannot bring about change in an underperforming firm, an outside company may offer to take over the firm, in which case the senior management team would most likely be removed. Third, government regulations impose at least some minimal level of corporate governance standards with which firms must comply even if other internal and external governance mechanisms prove ineffective.

11. "How CEO pay differs around the globe," [Equilar.com](https://www.equilar.com) press release, August 17, 2016.

individual investors

Investors who own relatively small quantities of shares to meet personal investment goals.

institutional investors

Investment professionals such as banks, insurance companies, mutual funds, and pension funds that are paid to manage and hold large quantities of securities on behalf of others.

activist investors

Investors who specialize in influencing management.

Individual versus Institutional Investors To understand the role of shareholders in shaping a firm's corporate governance, it is helpful to differentiate between the two broad classes of owners: individuals and institutions. Generally, **individual investors** own relatively few shares and do not have sufficient means to influence a firm's corporate governance. To pressure a firm, individual investors would have to vote collectively on matters such as electing directors. Coordinating the votes of thousands of individuals is difficult, so individual investors rarely exert much influence on corporations.

Institutional investors have advantages over individual investors when it comes to influencing the corporate governance of a firm. **Institutional investors** are investment professionals paid to manage and hold large quantities of securities on behalf of individuals, businesses, and governments. Such investors include banks, insurance companies, mutual funds, and pension funds. Unlike individual investors, institutional investors often monitor and directly influence a firm's corporate governance by exerting pressure on management to perform, communicating their concerns to the firm's board, or even pressing for the election of their own slate of directors to the board. These large investors can also threaten to exercise their voting rights or liquidate their holdings if the board does not respond positively to their concerns. Because individual and institutional investors share the same goal, individual investors benefit from the monitoring activities of institutional investors.

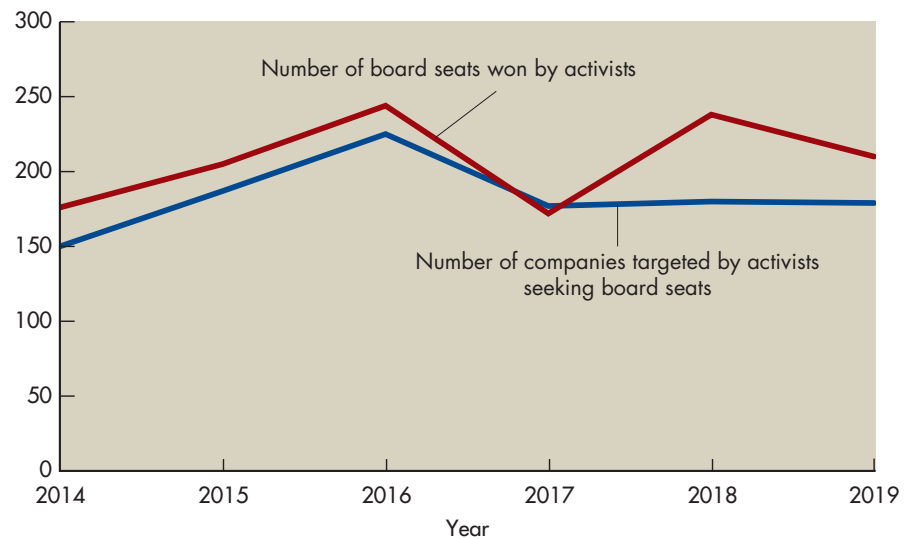
Activist investors, who may be wealthy individuals or institutional investors controlling a large pool of capital, specialize in influencing management. Activist shareholders may quickly assemble a significant ownership position in a firm to persuade senior managers to take specific actions, such as replacing existing board members with new ones favored by the activist. As was the case in the story described at the start of this chapter, activist investors typically emerge when a company has been underperforming, and their objective is to force managers to make changes to improve the firm's performance. To illustrate, in May 2019, Carl Icahn purchased roughly \$1.6 billion in Occidental Petroleum shares after the company announced its intention to acquire another petroleum company. Icahn objected to the terms of the deal and gradually increased his stake in Occidental stock to almost 10% of the company's shares. By March 2020, Icahn won concessions from Occidental to cut spending in the face of falling oil prices, to award two Icahn associates seats on the Occidental board, and to create a new oversight committee that must be informed of any offers to buy Occidental or its assets. Figure 1.5 shows that from 2014 to 2019, activist investors sought and won hundreds of board seats in U.S. companies. Activists may also seek other actions such as divesting unprofitable divisions or even putting an entire company up for sale. Even very large public companies are not immune to pressure from activists. In recent years, about 20% of activist campaigns have targeted companies worth more than \$10 billion.

The Threat of Takeover When a firm's internal corporate governance structure is unable to keep agency problems in check, it is likely that rival managers will try to gain control of the firm. Because agency problems represent a misuse of the firm's resources and impose agency costs on the firm's shareholders, the firm's stock is generally depressed, making the firm an attractive takeover target. The threat of takeover by another firm that believes it can enhance the troubled firm's value by restructuring its management, operations, and financing can

FIGURE 1.5**Activists Seeking Board Representation in U.S. Companies**

From 2014 to 2019, between 150 and 225 U.S. public companies were targeted by activists seeking board seats each year. In most years, activists won more than one seat per company targeted on average, with total board seats won ranging from 170 to 245 annually.

Source: "The Activist Investing Annual Review 2020," corpgov.law.harvard.edu



provide a strong source of external corporate governance. The constant threat of a takeover tends to motivate management to act in the best interests of the firm's owners.

Government Regulation

Government regulation shapes the corporate governance of all firms. During the past two decades, corporate governance has received increased attention because of several high-profile corporate scandals involving abuse of corporate power and, in some cases, alleged criminal activity by corporate officers. The misdeeds derived from two main types of issues: (1) false disclosures in financial reporting and other material information releases and (2) undisclosed conflicts of interest between corporations and their analysts, auditors, and attorneys and between corporate directors, officers, and shareholders.

Asserting that an integral part of an effective corporate governance system is the provision for civil or criminal prosecution of individuals who conduct unethical or illegal acts in the name of the firm, in July 2002 the U.S. Congress passed the **Sarbanes-Oxley Act of 2002** (commonly called **SOX**). Sarbanes-Oxley was intended to eliminate many of the disclosure and conflict of interest problems that can arise when corporate managers are not held personally accountable for their firm's financial decisions and disclosures. SOX accomplished the following: established an oversight board to monitor the accounting industry, tightened audit regulations and controls, toughened penalties against executives who commit corporate fraud, strengthened accounting disclosure requirements and ethical guidelines for corporate officers, established corporate board structure and membership guidelines, established guidelines with regard to analyst conflicts of interest, mandated instant disclosure of stock sales by corporate executives, and increased securities regulation authority and budgets for auditors and investigators.

Sarbanes-Oxley Act of 2002 (SOX)

An act aimed at eliminating corporate disclosure and conflict of interest problems. Contains provisions concerning corporate financial disclosures and the relationships among corporations, analysts, auditors, attorneys, directors, officers, and shareholders.

→ REVIEW QUESTIONS

- 1–10** Which legal form of business organization is most common? Which form do the largest businesses typically take and why?
- 1–11** Describe the roles of, and the relationships among, the major parties in a corporation: stockholders, board of directors, and managers. How are corporate owners rewarded for the risks they take?
- 1–12** Explain why corporations face a double taxation problem? For corporations, how are the marginal and average tax rates related?
- 1–13** Define agency problems and describe how they give rise to agency costs. Explain how a firm's corporate governance structure can help avoid agency problems.
- 1–14** How can the firm structure management compensation to minimize agency problems?
- 1–15** How do market forces—both shareholder activism and the threat of takeover—prevent or minimize the agency problem? What role do institutional investors play in shareholder activism?

1.4 Developing Skills for Your Career

We began this chapter by arguing that regardless of your major, an understanding of finance would greatly enhance your career prospects. All business disciplines have a responsibility to contribute to the firm's goal of creating value, so understanding how to determine which actions create value and having the ability to explain the wisdom behind a particular course of action can help you succeed no matter what career path you've chosen. Below we highlight skills you can develop while working through this book.

CRITICAL THINKING

For many people working in a business, it is not obvious how the business creates value for its owners. In this text, we emphasize that value creation balances risk and return, so a critical evaluation of any proposed course of action requires an analysis of the risks of that action as well as its potential rewards. Virtually every chapter in this text provides guidance about how to make critical judgments regarding either the risks or the rewards (or both) tied to corporate decisions. By mastering those chapters you will learn how to apply criteria that lead to value-creating business decisions. You will learn the assumptions behind and the key relationships driving financial models, so even if your job does not involve building those models, you can help shape them by providing the data and analysis that the financial analysts at your firm use to provide financial justifications for key decisions. Your understanding of financial principles will also help you to identify weaknesses in financial analysis, which, left uncorrected, might lead to suboptimal decisions.

COMMUNICATION AND COLLABORATION

In most large businesses today, employees work in cross-functional teams. If your aim is to work in marketing or supply chain or even general management, rest assured that working with a colleague from the finance department will be part of your regular routine. Thus, you need to understand how financial people think and the vocabulary they use to communicate with them effectively and

persuasively. Developing a basic financial proficiency will help you gather and organize the information that the financial analyst on your team needs to demonstrate the value of your team's work to the larger organization.

FINANCIAL COMPUTING SKILLS

Though an in-depth discussion of using Excel or other computer programs to build complex financial models is beyond the scope of this text, we do provide an introduction to some of the Excel tools that see widespread practice in financial modeling. Even if your job does not involve building models in Excel, financial analysts in your firm will routinely present their analysis in that form, and your ability to respond and contribute to that analysis hinges upon your understanding of at least the basics of those models. Remember that finance is often the gatekeeper of corporate funds, so gaining support from the finance department may be an important step in marshaling the resources you need to do your job effectively. It's easier to gain that support if you are conversant in the basics of financial modeling in Excel.

SUMMARY

FOCUS ON VALUE

This chapter established the primary goal of the firm: **to maximize the wealth of the owners for whom the firm is being operated**. For public companies, this objective means that managers should act only on those opportunities that they expect will create value for owners by increasing the stock price. Doing so requires management to consider the returns and the risks of each proposed action and their combined effect on the value of the firm's stock.

REVIEW OF LEARNING GOALS

LG 1 Define finance and the managerial finance function. Finance is the science and art of how individuals and firms raise, allocate, and invest money. It affects virtually all aspects of business. Managerial finance is concerned with the duties of the financial manager working in a business. Financial managers administer the financial affairs of all types of businesses: private and public, large and small, profit seeking and not for profit. They perform such varied tasks as developing a financial plan or budget, extending credit to customers, evaluating proposed large expenditures, and raising money to fund the firm's operations.

LG 2 Describe some goals that financial managers pursue, and link achievement of those objectives to the general goal of maximizing the wealth of the firm's owners. There are many goals that firms can pursue including maximizing market share or profits. Firms might also express goals in terms of employee retention, ethics, or environmental sustainability. In finance, we say that a firm's primary goal is to maximize the wealth of its owners who provide the capital that makes the firm's existence possible. Maximizing the wealth of shareholders typically does not mean working against the interests of other stakeholders, but rather balancing those interests to create value for the firm in the long run.

LG 3

Identify the primary activities of the financial manager. Financial managers are primarily involved in three types of decisions. Investment decisions relate to how a company invests its capital to generate wealth for shareholders. Financing decisions relate to how a company raises the capital it needs to invest. Working capital decisions refer to the day-to-day management of a firm's short-term resources such as cash, receivables, inventory, and payables.

LG 4

Explain the key principles that financial managers use when making business decisions. The time value of money means that money is more valuable today than in the future because of the opportunity to earn a return on money that is on hand now. Because a tradeoff exists between risk and return, managers have to consider both factors for any investment they make. Managers should also focus more on cash flow than on accounting profit. Furthermore, managers need to recognize that market prices reflect information gathered by many different investors, so the price of a company's stock is an important signal of how the company is doing. Finally, although managers should act in shareholders' interest, they do not always do so, which requires various kinds of incentives to be in place so that the interests of managers and shareholders align to the greatest extent possible.

LG 5

Describe the legal forms of business organization. These are the sole proprietorship, the partnership, and the corporation. The corporation is dominant in the sense that most large companies are corporations. A corporation's owners are its stockholders. Stockholders expect to earn a return by receiving dividends or by realizing gains through increases in share price.

LG 6

Describe the nature of the principal-agent relationship between the owners and managers of a corporation, and explain how various corporate governance mechanisms attempt to manage agency problems. The separation of owners and managers in a corporation gives rise to the classic principal-agent relationship, in which shareholders are the principals and managers are the agents. This arrangement works well when the agent makes decisions in the principal's best interest, but it can lead to agency problems when the interests of the principal and agent differ. A firm's corporate governance structure is intended to help ensure that managers act in the best interests of the firm's shareholders and other stakeholders, and it is usually influenced by both internal and external factors.

OPENER-IN-REVIEW

In the chapter opener, you learned that the shareholders of Kirin want the management to distribute some of the cash reserves as dividends. Kirin's shares are currently trading at ¥2,500. One market analyst has estimated that Kirin can pay dividends of ¥1,500 per share and the share value will remain at ¥1,500 after the dividends have been paid. Will the shareholders of Kirin be better or worse off with dividend payment? Calculate the percentage change in the shareholders' wealth including the cash they received and the change in the value of their stock that would hypothetically occur if Kirin acted on this plan. Now suppose Kirin has 835 million shares outstanding. What will be the total yen value of the wealth created or destroyed by the proposed dividend plan?

SELF-TEST PROBLEM

(Solution in Appendix)

LG 4

- ST1-1 Emphasis on Cash Flows** Worldwide Rugs is a U.S. importer that resells its products to local retailers. Last year, Worldwide imported \$2.5 million worth of rugs and paid for all of them prior to shipping. On receipt of the rugs, the importer immediately resold them to local retailers for \$3 million. To allow its retail clients time to resell the rugs, Worldwide Rugs sells to retailers on credit. Prior to the end of its business year, Worldwide Rugs collected 85% of its outstanding accounts receivable.
- What is the accounting profit that Worldwide Rugs generated for the year?
 - Did Worldwide Rugs have a successful year from an accounting perspective?
 - What is the financial cash flow that Worldwide Rugs generated for the year?
 - Did Worldwide Rugs have a successful year from a financial perspective?
 - If the current pattern persists, what is your expectation for the future success of Worldwide Rugs?

WARM-UP EXERCISES**LG 5**

- E1-1** Ann and Jack have been partners for several years. Their firm, A & J Tax Preparation, has been very successful, as the pair agree on most business-related questions. One disagreement, however, concerns the legal form of their business. For the past two years, Ann has tried to convince Jack to incorporate. She believes there is no downside to incorporating and sees only benefits. Jack strongly disagrees; he thinks the business should remain a partnership forever.

First, take Ann's side, and explain the positive side to incorporating the business. Next, take Jack's side, and state the advantages to remaining a partnership. Last, what information would you want if you were asked to make the decision for Ann and Jack?

LG 4

- E1-2** You are the chief financial officer (CFO) of Morb lights, a manufacturer of lighting components for cars. The board of directors have decided that there is a need to divert investments toward LED-based lighting solutions instead of traditional light bulbs. You are currently evaluating two alternative projects. The first is to integrate new technology in an existing factory, where the cash flows for the first four years will be below average as the production will be affected due to refitting of facilities. However, from year 5 it will increase to above-average levels once full capacity is achieved. The second project is to take over an existing small business with the required production facility. This is expected to increase cash flows to above-average levels immediately for the next four years, but decrease to lower-than-average cash flows from year 5, when the factory's technology becomes outdated.

How do you choose from the two available options? Given the strategy of the firm, what other factors need to be taken into consideration before making this decision?

LG 4

- E1-3** The Quickclick Media Ltd. announced that the profit for the previous year is twice the amount earned in the previous year, an improvement from the projected numbers. The chief human resources officer (CHRO) suggested that the employees need to be rewarded for their efforts. To keep them motivated, she insisted on giving them a significant cash bonus in the following month. The chief financial officer (CFO), however, contended that there was insufficient cash and that they should wait till the next quarter before paying each employee a cash bonus.

How can the company, which is a profitable one, have insufficient cash flows? Explain your answer.

LG 5

- E1-4** The chief financial officer (CFO) of New Age Fashion Ltd. has just received a request from a project manager to authorize an expenditure of £45,000. The manager states that this expenditure is necessary for the last stage development of a space navigation system, which is based on a programming language called Xtor. As a space engineer and financial manager, you know that Xtor is almost obsolete and is being replaced by alternatives that provide better cross-platform compatibility. However, the project manager insists that they should continue with the last tranche of payment because over £1.5 million has already been spent on developing this navigation system. It would be a shame to waste all the time and resources that have been invested.

Advise the CFO regarding whether she should authorize the £45,000 proposed expenditure. Use marginal cost–benefit analysis to explain your reasoning.

LG 6

- E1-5** Premier Baking Ltd. has recently appointed a new CEO to run its bakery business, which supplies to supermarkets and restaurants. The new CEO has instituted a new compensation policy and dropped the earlier incentive scheme, which was based on overall production achieved within the targeted time limits and quality standards. The quality control manager has now reported that there is a significant increase in production delays and delivery mix-up leading to an increasing number of customer complaints.

Explain how the delays and delivery errors could represent a case of agency costs. How could Premier Bakery counter these agency costs?

LG 5

- E1-6** For the current year, Ross Corporation had pretax ordinary income of \$500,000 and sold for \$150,000 an asset purchased previously for \$125,000. Calculate the total tax liability for the company.

PROBLEMS

The **Excel** icon indicates auto-graded Excel projects available in MyLab Finance. Excel templates for end-of-chapter problems are also available in MyLab Finance.

LG 5

- P1-1 Liability comparisons** John Bailey invested \$50,000 in The Entertainment Company seven years ago. He is concerned about the future of the firm, as the profits have plummeted over the last four years. The firm has \$120,000 in outstanding debt and is considering declaring bankruptcy.
- If John is the sole proprietor, describe the financial implication of the firm going bankrupt.
 - If John and his brother, Peter, are partners with an equal partnership distribution, describe the financial implication of the firm going bankrupt.
 - If the firm is a corporation, describe the financial implication of the firm going bankrupt.

LG 4

- P1-2 Accrual income versus cash flow for a period** The Motor Corporation sold vehicles for \$500,000 to one specific dealer during the year. At the end of the financial year, the dealer still owed The Motor Corporation \$350,000. The cost of the vehicles sold was \$400,000, and this cost was incurred and paid by The Motor Corporation.
- Determine the firm's net profit for the past year using the accrual basis of accounting.

- b. Determine the firm's net cash flow for the past year using the cash basis of accounting.
- c. The accountant and financial manager need to present the results to the CEO of The Motor Corporation. What will be their message regarding the performance of the corporation?

Personal Finance Problem

LG 4

- P1–3 Cash flows** Sheldon Smith spends many hours monitoring his personal cash flows every month. Sheldon earns 5% on his short-term investments while paying prime plus 2% (prime is 9%) on the mortgage. The cash inflows and outflows for the month of March are as follows:

Item	Cash inflow	Cash outflow
Interest received	\$ 500	
Mortgage		\$1,550
Salary	5,500	
Groceries bill		850
Gas bill		200
Utility bills		310

- a. Determine Sheldon's total cash inflows and cash outflows for the month of March.
- b. What is Sheldon's net cash flow for the month of March? Explain the meaning of the term "net cash flow."
- c. What advice would you give Sheldon if there is a surplus of funds?
- d. What advice would you give Sheldon if there is a shortage of funds?

LG 4

- P1–4 Marginal cost–benefit analysis and the goal of the firm** Wendy Winter needs to determine whether the current warehouse system should be upgraded to a new system. The new system would require an initial cash outlay of \$250,000. The current system could be sold for \$55,000. The monetary benefit of the new system over the next five years is \$325,000, while the monetary benefit of the current system over the same period is \$125,000. Furthermore, it is expected that the firm's stock price will increase if the new system is implemented because it will make the firm more cost efficient and cost effective in the long run.

- a. Identify and describe the analysis Wendy should use to make the decision.
- b. Calculate the marginal benefit of the proposed new warehouse system.
- c. Calculate the marginal cost of the proposed new warehouse system.
- d. What should Wendy's recommendation be to the firm regarding the new warehouse system? Explain your answer.
- e. If the new system is implemented, will the firm achieve the primary financial goal of managers?

LG 2

LG 2 LG 4

- P1–5 Marginal cost–benefit analysis and the goal of the firm** Ken Allen, capital budgeting analyst for Bally Gears, Inc., has been asked to evaluate a proposal. The manager of the automotive division believes that replacing the robotics used on the heavy truck gear line will produce total benefits of \$560,000 (in today's dollars) over the next five years. The existing robotics would produce benefits of \$400,000 (also in today's

dollars) over that same period. An initial cash investment of \$220,000 would be required to install the new equipment. The manager estimates that the existing robotics can be sold for \$70,000. Show how Ken will apply marginal cost–benefit analysis techniques to determine the following:

- The marginal benefits of the proposed new robotics.
- The marginal costs of the proposed new robotics.
- The net benefit of the proposed new robotics.
- What should Ken recommend that the company do? Why?
- What factors besides the costs and benefits should be considered before the final decision is made?

LG 6

P1–6 Identifying agency problems, costs, and resolutions You are the CEO of Nelson Corporation, and the current stock price is \$27.80. Pollack Enterprises announced today that it intends to buy Nelson Corporation. To obtain all the stock of Nelson Corporation, Pollack Enterprises is willing to pay \$38.60 per share. At a meeting with your management, you realize that management is not happy with the offer, and is against the takeover. Therefore, with full support of your management team, you are fighting to prevent the takeover from Pollack Enterprises.

Is the management of Nelson Corporation acting in the best interest of the Nelson Corporation stockholders? Explain your reasoning.

LG 5

P1–7 Corporate taxes Southern Textile Ltd. is a manufacturer of sportswear and supplies products to a number of European retail stores. Its registered office is in Singapore. During 2017, the firm earned SGD 112,000 before taxes. Singapore's corporate tax rate is 20%. Firms are eligible for a tax rebate of 50% of the tax amount, capped to a maximum amount of SGD 10,000 every year on their tax liability.

- Calculate the firm's tax liability using Singapore's corporate tax rates.
- How much are Southern Textile's 2017 after-tax earnings?
- Calculate the firm's average tax rate.

LG 6

P1–8 Average corporate tax rates Ordinary income in 2017 was taxed subject to the rates shown in the accompanying table. Using the data in the table, perform the following:

- Calculate a firm's tax liability, after-tax earnings, and average tax rate for the following levels of corporate earnings before taxes: \$20,000; \$70,000; \$300,000; \$700,000; \$1.2 million; \$16 million; and \$22 million.
- Plot the average tax rate (measured on the y -axis) and the pretax income levels (measured on the x -axis). Explain the relationship between average tax rate and pretax income level.

Taxable income brackets			Base tax	+	(Marginal rate \times amount over bracket lower limit)			
\$ 0	to	\$ 50,000	\$ 0	+	(15%	\times	amount over	\$ 0)
50,000	to	75,000	7,500	+	(25	\times	amount over	50,000)
75,000	to	100,000	13,750	+	(34	\times	amount over	75,000)
100,000	to	335,000	22,250	+	(39	\times	amount over	100,000)
335,000	to	10,000,000	113,900	+	(34	\times	amount over	335,000)
10,000,000	to	15,000,000	3,400,000	+	(35	\times	amount over	10,000,000)
15,000,000	to	18,333,333	5,150,000	+	(38	\times	amount over	15,000,000)
Over	to	18,333,333	6,416,667	+	(35	\times	amount over	18,333,333)

LG 6

- P1-9 Marginal corporate tax rates** Using the corporate tax rate schedule given in the previous problem, perform the following:
- Find the marginal tax rate for the following levels of corporate earnings before taxes: \$12,000; \$40,000; \$70,000; \$90,000; \$300,000; \$550,000; \$1.3 million; and \$22 million.
 - Plot the marginal tax rate (measured on the y-axis) against the pretax income levels (measured on the x-axis). Explain the relationship between the marginal tax rate and pretax income levels.

LG 5 LG 6

- P1-10 Double taxation and implied cost of limited liability** You are contemplating starting a new business as either a sole proprietorship or a corporation. On the one hand you really value the limited liability provided by incorporating, but on the other hand you are not fond of the double taxation issue faced by owners of corporations. To help you decide, find the final after-tax income you would have from \$650,000 of business income if you organize your business as a proprietorship versus a corporation. Assume this is your only income and be sure to consider all relevant taxes. Based on your findings, what's the implied cost of limited liability afforded by incorporating?

LG 6

- P1-11 Interest versus dividend income** Depot Logistics Inc. has declared pretax income from its operations of \$560,000. In addition, it also received interest payment of \$40,000 on bond stock held in Warehouse PLC. During the year, it also received \$40,000 in income from dividends on its 20% common stock holding in Zephyr PLC. Depot Logistics is in the 30% tax bracket and is eligible for a 70% dividend exclusion on its Zephyr PLC stock.
- Calculate the tax liability for Depot Logistics on its operating income.
 - Calculate the tax and after-tax income attributable to the interest income received on account of bond stock, from Warehouse PLC.
 - Find the tax and after-tax income owing to the dividend income received on account of common stock, from Zephyr PLC.
 - Compare and comment on the after-tax amounts resulting from the interest income and dividend income calculated in parts b and c.
 - What is the firm's total tax liability for the year?

LG 6

- P1-12 Interest versus dividend expense** Derwent Ltd. has announced that the earnings before income and taxes is going to be £300,000 for the current year. Assuming corporate tax rate for Derwent Ltd. is a flat 30%, compute the firm's profit after taxes and earnings available for common stockholders (earnings after taxes and preferred stock dividends, if any) under following conditions:
- The firm pays £70,000 in interest.
 - The firm pays £70,000 in preferred stock dividends.

LG 5

- P1-13 Corporate taxes and the use of debt** Hemingway Corporation is considering expanding its operations to boost its income, but before making a final decision, it has asked you to calculate the corporate tax consequences of such a decision. Currently, Hemingway generates before-tax yearly income of \$200,000 and has no debt outstanding. Expanding operations would allow Hemingway to increase before-tax yearly income to \$350,000. Hemingway can use either cash reserves or debt to finance its expansion. If Hemingway uses debt, it will have a yearly interest expense of \$70,000.

Create a spreadsheet to conduct a tax analysis using the 21% corporate tax rate for Hemingway Corporation and determine the following:

- a. What is Hemingway's current annual corporate tax liability?
- b. What is Hemingway's current average tax rate?
- c. If Hemingway finances its expansion using cash reserves, what will be its new corporate tax liability and average tax rate?
- d. If Hemingway finances its expansion using debt, what will be its new corporate tax liability and average tax rate?
- e. What would you recommend the firm do? Why?

P1-14 ETHICS PROBLEM One of the key risk areas that corporates need to manage is "ethical risks." Do you think that management of ethical risks is as important for businesses as management of financial risks? Explain how ethical problems may affect a firm's profits and stock price.

SPREADSHEET EXERCISE

Excel

You intend to start a new aerospace business called Space Ace, but before launching your new enterprise some due diligence is necessary to evaluate your organizing, financing, and investing options. Because of the differing liability and tax treatments you are contemplating organizing your business as either a sole proprietorship or corporation. Based on contract negotiations with NASA, you estimate that starting out your new business will generate \$10.5 million in yearly pretax operating income. Assume that the income you receive from your new business is your only income.

To finance your new business' operations you are considering using 100% equity financing or a mix of 60% equity and 40% debt financing. If your business uses debt, it will have a yearly interest expense of \$1.05 million.

In addition to the pretax operating income, your new business will receive \$144,000 in dividend income on its investment in FliHi Satellites, Inc. and \$59,000 in interest income on its investment in a primary supplier's bonds. The dividend income qualifies for the 50% dividend exclusion.

TO DO

Create a spreadsheet to evaluate your organizing, financing, and investing options:

- a. Calculate the total tax liability on Space Ace's pretax operating income if it's organized as a sole proprietorship versus a corporation. What are your observations?
- b. Calculate the total tax liability on Space Ace's pretax operating income, both as a sole proprietorship and a corporation, if it's financed using 100% equity versus 60% and 40% debt. What are your observations?
- c. Calculate the total tax liability on all of Space Ace's income, both as a sole proprietorship and a corporation, if it's financed using 100% equity versus 60% and 40% debt. What are your observations?

The Financial Market Environment

LEARNING GOALS

- LG 1** Understand the role that financial institutions play in managerial finance.
- LG 2** Understand the role that financial markets play in managerial finance.
- LG 3** Describe the differences between the money market and the capital market.
- LG 4** Understand the major regulations and regulatory bodies that affect financial institutions and markets.
- LG 5** Describe the process of issuing common stock, including venture capital, going public, and the role of the investment bank.
- LG 6** Understand what is meant by financial markets in crisis, and describe some of the root causes of the Great Recession.

WHY THIS CHAPTER MATTERS TO YOU

In your *professional* life

ACCOUNTING You need to understand how the firm raises external financing with the assistance of financial institutions in the financial markets.

INFORMATION SYSTEMS You need to understand how information flows between the firm and financial markets.

MANAGEMENT You need to understand why healthy financial institutions and markets are an integral part of a healthy economy and how a crisis in the financial sector can spread and affect almost any type of business.

MARKETING You need to understand why it is important for firms to communicate results to investors and how these communications lead to more favorable external financing terms for the firm in the financial markets.

OPERATIONS You need to understand why external financing is, for most firms, an essential aspect of ongoing operations.

In your *personal* life

Making financial transactions will be a regular occurrence throughout your life. These transactions may be as simple as depositing your paycheck in a bank or as complex as deciding how to allocate the money you save for retirement among different investment options. The content in this chapter will help you make better decisions when you conduct business in the financial markets.



YuniqueB/Shutterstock

WEWORK

WeWork's IPO Doesn't

As the coronavirus outbreak locked down much of the U.S. economy in March 2020, executives at Softbank, Japan's second largest company, were backing out of a deal. Three years earlier it had invested \$1.3 billion to buy an initial stake of 7.7% of the common stock of WeWork, a company that leased shared office space to high-tech startups. With its 2010 co-founder, Adam Neumann, serving as CEO, WeWork looked like one of the hottest startups in the market, growing its operations by 100% in 2015. WeWork's growth was funded by venture capital partnerships such as DAG in the U.S. and Aleph in Israel, investment banks such as JPMorgan Chase and Goldman Sachs, and even the Harvard University endowment. Collectively, this group invested nearly \$14 billion from 2009 to 2019, but no one invested more than Softbank. After an additional \$2 billion Softbank investment in January 2019, WeWork's estimated market value hit \$47 billion.

WeWork decided it was time to "go public" by conducting an initial public offering (IPO). As part of that process, the U.S. Securities and Exchange Commission requires companies seeking to do an IPO to disclose financials and other details about the business in a document called a prospectus. The August 2019 prospectus was a revelation, and not in a good way. The company had racked up huge losses, and Wall Street experts combing over the documents questioned whether the company could ever become profitable. Questions surfaced about Neumann's erratic and perhaps unethical behavior, such as charging the company \$5.9 million to license the name "We Company" from an entity that he personally controlled. Just a few weeks after filing the prospectus, WeWork announced that it would postpone its IPO, and by the end of the year the company's estimated value had dropped 83% to \$8 billion. In November WeWork laid off 2,400 workers, nearly 20% of its workforce.

Softbank had pledged to buy \$3 billion in stock from existing investors and employees, but a few months later, with office buildings empty due to the "shelter-in-place" orders in many states, WeWork's already precarious prospects dimmed. Softbank rescinded its promise to inject new funds into WeWork, claiming that ongoing S.E.C. investigations of WeWork gave it an "out" from its contractual obligations.¹

1. "Softbank Backs Away From Part of Planned WeWork Bailout," by Liz Hoffman and Eliot Brown, [wsj.com](https://www.wsj.com), March 18, 2020; "WeWork Funding Rounds, Valuations, and Investors," craft.co, April 11, 2020.

LG 1

2.1 Financial Institutions

financial institution

An intermediary that channels the savings of individuals, businesses, and governments into loans or investments.

Most successful firms have ongoing needs for funds. **Financial institutions** serve as intermediaries by channeling the savings of individuals, businesses, and governments into loans or investments. Many financial institutions directly or indirectly pay savers interest on deposited funds; others provide services for a fee (e.g., checking accounts for which customers pay service charges). Some financial institutions accept customers' savings deposits and lend this money to other customers such as firms. Other institutions invest customers' savings in earning assets such as real estate or stocks and bonds, and still others do both.

For financial institutions, the key suppliers and demanders of funds are individuals, businesses, and governments. The savings that individual consumers place in these institutions provide a large portion of their funds. Individuals not only supply funds to financial institutions but also demand funds from them in the form of loans. However, individuals as a group are *net suppliers* for financial institutions: They save more money than they borrow.

Business firms also deposit some of their funds in financial institutions, primarily in checking accounts with various commercial banks. Like individuals, firms borrow funds from these institutions, but, unlike individuals, firms are *net demanders* of funds: They borrow more money than they save.

Governments maintain deposits in commercial banks. They do not borrow funds directly from financial institutions, although by selling their debt securities to various institutions, governments indirectly borrow from them. The government is typically a *net demander* of funds: It borrows more than it saves. We've all heard about the U.S. federal budget deficit.

Major types of financial institutions include commercial banks, investment banks, investment funds, insurance companies, and pension funds. Financial institutions offer a wide range of products and services for individual, business, and government clients.

COMMERCIAL BANKS, INVESTMENT BANKS, AND THE SHADOW BANKING SYSTEM

Commercial Banks

commercial banks

Institutions that provide savers with a secure place to invest their funds and that offer loans to individual and business borrowers.

Commercial banks are financial institutions that provide savers with a secure place to deposit or save funds for future use. Deposited funds generally earn a small rate of return, are available on demand, and are insured against loss. The largest commercial banks in the United States include JPMorgan Chase, Wells Fargo, Bank of America, Citibank, U.S. Bancorp, and PNC Bank. Commercial banks are among the most important financial institutions because they provide loans to both individuals and businesses to finance investments, such as the purchase of a new home or the expansion of a business.

The traditional business model of a commercial bank—taking in and paying interest on savings deposits and investing or lending those funds back out at higher interest rates—works to the extent that depositors trust their savings are safe. In the United States, most savings accounts at commercial banks are insured by the U.S. Federal Deposit Insurance Corporation (FDIC). The first \$250,000 of deposits in an account at an FDIC-insured depository institution is covered dollar-for-dollar, principal plus any interest accrued or due the depositor.

Glass-Steagall Act

An act of Congress in 1933 that created the Federal Deposit Insurance Corporation (FDIC) and separated the activities of commercial and investment banks.

investment banks

Institutions that assist companies in raising capital, advise firms on major transactions such as mergers or financial restructurings, and engage in trading and market-making activities.

shadow banking system

A group of institutions that engage in lending activities, much like traditional banks, but that do not accept deposits and therefore are not subject to the same regulations as traditional banks.

In the 1930s, FDIC insurance was put in place in response to the banking runs that occurred during the Great Depression. The same 1933 act of Congress that introduced deposit insurance, the **Glass-Steagall Act**, also created a separation between commercial banks and investment banks, meaning that an institution engaged in taking in deposits could not also engage in the somewhat riskier activities of securities underwriting and trading.

Investment Banks

Investment banks are financial institutions that (1) assist companies in raising capital, (2) advise firms on major transactions such as mergers or financial restructurings, and (3) engage in trading and market-making activities. Clients of investment banks include individuals with very high net worth, businesses, governments, pension funds, and other financial institutions. Size and reputation matter for investment banks. Large banks like Goldman Sachs, Morgan Stanley, Barclays, and Credit Suisse have better connections, provide more services, and have greater capability of facilitating the unique transactions of their clients.

Commercial and investment banks remained essentially separate for more than 50 years, but Congress, with the approval of President Clinton, repealed Glass-Steagall in 1999. Companies that had formerly engaged only in the traditional activities of a commercial bank began competing with investment banks for underwriting and other services. Some of the largest commingled banks are JPMorgan Chase, Bank of America Merrill Lynch, and Citigroup.

Shadow Banking System

The past 25 years have witnessed tremendous growth in what has come to be known as the shadow banking system. The **shadow banking system** describes a group of financial institutions that engage in lending activities, much like traditional banks, but that do not accept deposits and are therefore not subject to the same regulations with which traditional depository institutions must comply. For example, financial institutions such as mutual funds, insurance companies, or pension funds might have excess cash to invest, and a large corporation might need short-term financing to cover seasonal cash flow needs. Investment banks can act as an intermediary between these two parties and help facilitate a loan and thereby become part of the shadow banking system. The Financial Stability Board's *Global Monitoring Report on Non-Bank Financial Intermediation 2019* indicates that the shadow banking system financed \$51 trillion in assets in 29 countries, and in the United States alone it financed \$15 trillion in assets.

MATTER OF FACT**Consolidation in the U.S. Banking Industry**

The U.S. banking industry has been going through a long period of consolidation. According to the Federal Deposit Insurance Corporation (FDIC), the number of commercial banks in the United States declined from 14,400 in early 1984 to 4,492 by October 2019, a decline of almost 69%. The decline is concentrated among small community banks, which larger institutions have been acquiring at a rapid pace.

→ REVIEW QUESTIONS

- 2-1 What are financial institutions? Describe the role they play within the financial market environment.
- 2-2 Who are the key customers of financial institutions? Who are net suppliers, and who are net demanders of funds?
- 2-3 Describe the role of commercial banks, investment banks, and the shadow banking system within the financial market environment.

LG 2 **LG 3**

2.2 Financial Markets

financial markets

Forums in which suppliers of funds and demanders of funds can transact business directly.

private placement

The sale of a new security directly to an investor or group of investors.

public offering

The sale of either bonds or stocks to the general public.

primary market

Financial market in which securities are initially sold by the issuing entity.

secondary market

Financial market in which investors trade securities with each other.

Whereas savers who deposit funds into financial institutions have no direct knowledge of how those funds are lent, suppliers of funds in the financial markets know where their money goes. **Financial markets** are forums in which suppliers and demanders of funds can transact business directly. The two key financial markets are the money market and the capital market. Short-term debt instruments, or marketable securities, trade in the *money market*. Long-term securities—bonds and stocks—trade in the *capital market*.

To raise money, firms can use private placements or public offerings. A **private placement** involves the sale of a new security directly to an investor or group of investors, such as an insurance company or a pension fund. When firms need to raise large sums of money, they usually do so through a **public offering**, which is the sale of either bonds or stocks to the general public.

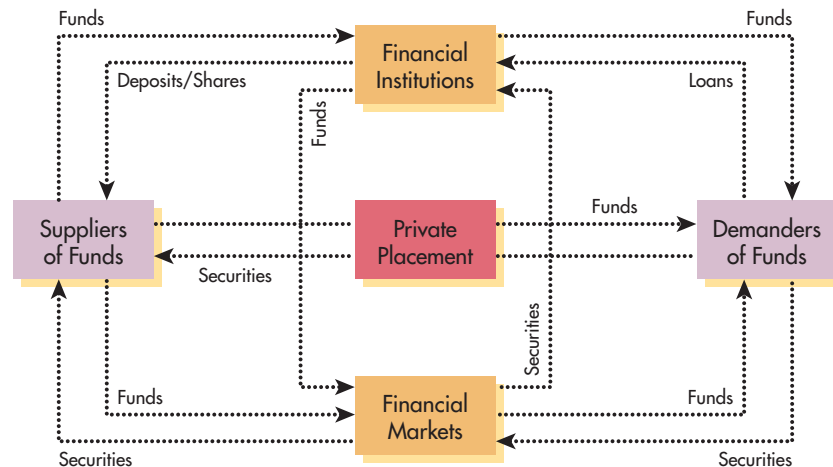
When a company or government entity sells stocks or bonds to investors and receives cash in return, it issues securities in the **primary market**. After the primary market transaction occurs, any further trading in the security does not involve the issuer, and the issuer receives no additional money from subsequent transactions. Once the securities begin to trade between investors, they become part of the **secondary market**. On large stock exchanges, billions of shares may trade on a single day, and these trades are all secondary market transactions. Money flows from the investors buying stocks to the investors selling them, and the company whose stock investors are trading remains largely unaffected by the transactions. Thus, we can say that the secondary market is where investors trade securities that were originally issued in the primary market.

THE RELATIONSHIP BETWEEN INSTITUTIONS AND MARKETS

Financial institutions actively participate in the financial markets facilitating the flow of funds among both suppliers and demanders of funds. Figure 2.1 depicts the general flow of funds through and between financial institutions and financial markets as well as the mechanics of private placement transactions. The top half of the figure depicts financial institutions facilitating the exchange of funds among suppliers and demanders through financial intermediation. For example, a commercial bank takes in savings funds from suppliers and deploys the funds as loans to demanders. The bottom half of the figure illustrates how the buying and selling of financial securities in financial markets allows for the exchange of funds among suppliers and demanders. Financial markets not only support the issuance of new financial securities, such as stocks and bonds, by firms that demand investment capital, but they also facilitate the exchange of existing financial securities among investors. While the center of Figure 2.1

FIGURE 2.1**Flow of Funds**

Flow of funds for financial institutions and markets



shows the direct exchange of funds between suppliers and demanders via a private placement, more often than not, suppliers and demanders of funds are brought together through the interaction of financial institutions and financial markets. For example, financial institutions, such as investment companies, take in investment funds from suppliers and then utilize the financial markets to channel the investment funds to demanders. Think of an investment bank that helps firms raise money by selling new shares of stock to financial market investors. While domestic or foreign individuals, businesses, and governments may supply and demand funds, it's generally financial institutions and financial markets that bring them together.

THE MONEY MARKET

money market

A market where investors trade highly liquid securities with maturities of one year or less.

marketable securities

Short-term debt instruments, such as U.S. Treasury bills, commercial paper, and negotiable certificates of deposit issued by governments, businesses, and financial institutions, respectively.

The **money market** is a market where investors trade highly liquid securities with maturities of one year or less. The money market exists because some individuals, businesses, governments, and financial institutions have temporarily idle funds they wish to invest in a relatively safe, interest-bearing asset. At the same time, others find themselves in need of seasonal or temporary financing. The money market brings together these suppliers and demanders of short-term funds.

In the money market, buyers and sellers trade **marketable securities**, which are short-term debt instruments such as U.S. Treasury bills, commercial paper, and negotiable certificates of deposit issued by governments, businesses, and financial institutions, respectively. Investors generally consider marketable securities to be among the least risky investments available.

The international equivalent of the domestic money market is the **Eurocurrency market**. This market for short-term bank deposits is denominated in U.S. dollars or other major currencies. Eurocurrency deposits arise when a corporation or individual makes a bank deposit in a currency other than the local currency of the country where the bank is located. For example, if a multinational corporation were to deposit U.S. dollars in a London bank, this action would create a Eurodollar deposit (a dollar deposit at a bank in Europe). Nearly all Eurodollar deposits are *time deposits*, which means the bank would promise

Eurocurrency market

International equivalent of the domestic money market.

to repay the deposit, with interest, at a fixed date in the future—in six months, for example. During the interim, the bank is free to lend this dollar deposit to creditworthy corporate or government borrowers. If the bank cannot find a borrower on its own, it may lend the deposit to another international bank.

THE CAPITAL MARKET

capital market

A market that enables suppliers and demanders of long-term funds to make transactions.

The **capital market** enables suppliers and demanders of long-term funds to make transactions. Businesses and governmental entities are the major issuers of securities in the capital market. The broker and dealer markets that provide a forum for bond and stock transactions form the backbone of the capital market. Although the United States has the world's largest and most active capital markets, in recent decades capital markets have experienced tremendous growth in countries all over the world.

Key Securities Traded: Bonds and Stocks

Securities in the capital market fall into two broad categories: *debt* and *equity*. Debt refers to a loan that a borrower must repay. Equity, in contrast, refers to a security issued by a business that provides the security holder with an ownership stake in the firm. The main type of debt security is a *bond*, whereas the main equity security is *common stock*. *Preferred stock* has features of both debt and equity, and for that reason we refer to preferred stock as a hybrid security.

bond

Long-term debt instrument used by business and government to raise large sums of money, generally from a diverse group of lenders.

Bonds are long-term debt instruments used by business and government to raise large sums of money, generally from a diverse group of lenders. Bonds typically pay periodic interest at a *stated interest rate*. The borrower pays interest on the bond's *principal* until the bond's *maturity date*, at which point the borrower repays the principal to the bondholders. Bond issuers have a legal commitment to make interest and principal payments to investors, and failure to do so may result in the borrower going bankrupt.

common stock

A unit of ownership, or equity, in a corporation.

Shares of **common stock** are units of ownership, or equity, in a corporation. Common stockholders earn a return by receiving dividends—periodic distributions of cash—or by realizing increases in share price. Firms have no obligation to pay dividends on common stock, and in fact most young firms tend to reinvest their earnings rather than pay them out as dividends. Eventually, as they grow and mature, most firms do pay dividends and raise them over time.

preferred stock

A special form of ownership having a fixed periodic dividend that must be paid prior to payment of any dividends to common stockholders.

Preferred stock is a hybrid security that has features of both debt and equity. Firms promise to pay preferred stockholders a fixed dividend, much like the fixed interest payments that bonds offer. Firms must also pay dividends to preferred stockholders before they pay dividends to common stockholders. In other words, like bonds, preferred stock has “preference” over common stock. However, if a firm cannot pay dividends, preferred stockholders cannot force it into bankruptcy as bondholders can when a firm does not make payments.

The market prices of both common and preferred stocks can fluctuate, but because preferred dividends are fixed, whereas firms may increase or decrease dividends on common shares without limit, common stock prices tend to fluctuate more. See the *Focus on Practice* box for the story of one legendary stock price and the equally legendary man who brought it about.

Broker Markets and Dealer Markets

liquidity

The ability to quickly buy or sell a security without having an impact on the security's price.

The vast majority of trades made by investors take place in the secondary market. Print media sources like the *Wall Street Journal* and online resources like Yahoo! Finance report information on secondary market transactions. A desirable feature of secondary markets for traders is **liquidity**, which refers to the ability to quickly

FOCUS ON PRACTICE

Berkshire Hathaway: Can Buffett Be Replaced?

In early 1980, investors could buy one share of Berkshire Hathaway Class A common stock (stock symbol: BRKA) for \$285. That may have seemed expensive at the time, but by July 2020 the price of just one share had climbed to \$288,130. The wizard behind such phenomenal growth in shareholder value is the chairman of Berkshire Hathaway, Warren Buffett, nicknamed the Oracle of Omaha.

With his partner, Vice-Chairman Charlie Munger, Buffett runs a large conglomerate of dozens of subsidiaries with 389,000 employees and more than \$250 billion in annual revenues. He makes it look easy. In his words, "I've taken the easy route, just sitting back and working through great managers who run their own shows. My only tasks are to cheer them on, sculpt and harden our corporate culture, and make major capital-allocation decisions. Our managers have returned this trust by working hard and effectively."²

Buffett's style of corporate leadership seems rather laid back, but

behind that "aw-shucks" manner is one of the best analytical minds in business. He believes in aligning managerial incentives with performance. Berkshire employs many different incentive arrangements, their terms depending on such elements as the economic potential or capital intensity of a CEO's business. Whatever the compensation arrangement, Buffett tries to keep it both simple and fair. Buffett himself receives an annual salary of \$100,000, which isn't much in this age of super-sized CEO compensation packages. Listed for many years among the world's wealthiest people, Buffett has donated most of his Berkshire stock to the Bill and Melinda Gates Foundation.

Berkshire's annual report is a must-read for many investors due to the popularity of Buffett's annual letter to shareholders with his homespun take on such topics as investing, corporate governance, and corporate leadership. Shareholder meetings in Omaha, Nebraska, have turned into

cult-like gatherings, with thousands traveling to listen to Buffett answer questions from shareholders. One question that has been firmly answered is that of Buffett's ability to create shareholder value.

The next question, not yet answered, is whether Berkshire Hathaway can successfully replace Buffett (age 90) and Munger (age 96). Several times in recent years Buffett has said publicly that his successor already works at Berkshire and has the full support of the company's board, but as yet no one has been specifically named as successor. Berkshire shareholders hope that Buffett's special wisdom applies as well to identifying new managerial talent as it does to making strategic investment decisions.

► *Thinking about the principal-agent problem from Chapter 1, why might Buffett use different incentive systems in firms with different growth prospects?*

market order

An order to either buy or sell a security at the prevailing market prices.

bid price

The highest price a buyer in the market is willing to pay for a security.

ask price

The lowest price a seller in the market is willing to accept for a security.

buy or sell a security without having an impact on the security's price. If a security trades in an illiquid market, selling or buying that security quickly may prove difficult and may require a price concession by the investor to facilitate the trade.

The typical secondary market trade requires an investor to submit an order to a brokerage service, for which the brokerage charges the investor a fee called a commission. The simplest type of trade involves a **market order**, which is an order to either sell or buy a security at the prevailing *bid* or *ask* price, respectively. The **bid price** is the highest price a buyer in the market is willing to pay for a security, and the **ask price** is the lowest price a seller in the market is willing to accept for a security. In effect, an investor pays the ask price when buying securities and receives the bid price when selling them. An example will help illustrate this concept.

EXAMPLE 2.1

Mark instructs his broker to submit a market order to buy 100 shares of Facebook common stock. At the time, the ask price for Facebook is \$168.79, and the bid price is \$168.71. Remember, the ask price is the lowest price offered in the market to sell Facebook to a potential buyer. Since Mark is trying to buy Facebook

2. Berkshire Hathaway, Inc., "Letter to Shareholders of Berkshire Hathaway, Inc.," 2006 *Annual Report*, p. 4.

stock, and he wants to buy at the lowest possible price, he will pay \$168.79, plus whatever commissions his broker charges. If, however, Mark already owned Facebook stock and wanted to sell it, he would be looking for the market's best offer to buy, the bid price. In that case, Mark would sell his shares for \$168.71, less commissions charged by the broker.

bid/ask spread

The difference between the bid and ask prices.

The difference between the bid and ask prices is the **bid/ask spread**.

$$\text{Bid/Ask Spread} = \text{Ask Price} - \text{Bid Price} \quad (2.1)$$

market makers

Securities dealers who "make markets" by offering to buy or sell certain securities at stated prices.

The bid/ask spread is a kind of trading cost that investors may pay when they trade through a market maker. A **market maker** is a securities dealer who makes a market in one or more securities by offering to buy or sell them at stated bid/ask prices. The bid/ask spread represents income to the market maker in much the same way that commission is income for the broker who submits the order. When an investor submits an order through a broker, the brokerage service sends the order, usually electronically, to a market maker to execute the trade. How the market maker executes the order depends on whether the secondary market where the trade takes place is a broker market or a dealer market.

The essential difference between broker and dealer markets is a technical point that deals with the way trades are executed. When a trade occurs in a **broker market**, the market maker brings the buyer's order and the seller's order together to execute the trade at the midpoint of the bid/ask spread. In other words, Party A sells his or her securities directly to the buyer, Party B. Note that this kind of market will have a high degree of liquidity if many investors want to buy and many want to sell. In this case the market maker acts as a broker and by doing so forgoes collecting the bid/ask spread. This means that the only transaction cost for each trader is their brokerage commission.

broker market

The securities exchanges on which the two sides of a transaction, the buyer and seller, are brought together to trade securities.

$$\text{Midpoint of the Bid/Ask Spread} = (\text{Ask Price} + \text{Bid Price}) \div 2 \quad (2.2)$$

dealer market

The market in which the buyer and seller are not brought together directly but instead have their orders executed by securities dealers who "make markets" in the given security.

In contrast, when trades occur in a **dealer market** the buyer's and the seller's orders are not brought directly together. Instead, market makers execute the buy/sell market orders they receive using their own inventory of securities. Essentially, two separate trades take place: Party A sells her securities (say, IBM stock) to a dealer at the bid price, and Party B buys his securities (IBM stock) from another, or possibly even the same, dealer at the ask price. This type of market will have good liquidity if dealers are willing to buy and sell quickly in response to the orders they receive. In this case, the market maker acts as a dealer and by doing so collects one-half of the bid/ask spread for each side of the trade. If the same dealer executes both sides of the trade, she collects the full bid/ask spread. In a dealer market, the total transaction cost for each of the traders is one-half the bid/ask spread plus the brokerage commission.

$$\begin{aligned} \text{Total Transaction Cost} &= (\text{Number of Shares} \times 1/2 \times \text{Bid/Ask Spread}) \\ &\quad + \text{Brokerage Commission} \end{aligned} \quad (2.3)$$

You can see that the key difference between broker and dealer markets is whether other traders provide liquidity or whether dealers perform that function. In broker markets the orders from investors provide liquidity, and in dealer markets the dealers provide liquidity.

PERSONAL FINANCE EXAMPLE 2.2

Assume that the current bid price for Merck & Co. stock is \$83.55 and the ask price is \$83.99. Suppose you have an E*TRADE brokerage account that charges a \$25 commission for equity trades placed through a broker. What is the current bid/ask spread for Merck?

$$\text{Bid/Ask Spread} = \$83.99 - \$83.55 = \$0.44$$

Inserting the current bid and ask prices into Equation 2.1, you find that the bid/ask spread for Merck is \$0.44. What would your total transaction costs be if you purchased 100 shares of Merck by placing a market order via your E*TRADE broker? Assume the trade is sent to a broker market for execution, and the market maker matches your order with a 100-share sell order for Merck from another investor. In this case your order will be executed at the midpoint of the bid/ask spread (\$83.77), so you will pay only the brokerage commission.

$$\text{Total Transaction Costs} = \text{Brokerage Commission} = \$25$$

Now what would your total transaction costs be if you purchased 100 shares of Merck by submitting a market order via your E*TRADE account, and it is routed to a dealer market for execution?

$$\begin{aligned} \text{Total Transaction Costs} &= (\text{Number of Shares} \times 1/2 \times \text{Bid/Ask Spread}) \\ &\quad + \text{Brokerage Commission} \\ &= (100 \times 1/2 \times \$0.44) + \$25 \\ &= \$22 + \$25 = \$47 \end{aligned}$$

Depending on where your brokerage routes your order, you find that your total transaction costs are either \$25 in a broker market or \$47 in a dealer market.

In today's competitive market place, your transaction costs could be zero! Like most online brokerage services, E*TRADE does not charge for orders placed online via your E*TRADE account, so if you placed your order online and it's routed to a market maker that matches it with a 100-share sell order for Merck your total transaction costs would be zero.

Because any stock that trades in the secondary market has a bid price and an ask price, it may seem difficult to answer the question, what is the market value of the stock? In the previous example, is the market value of Merck \$83.99 or \$83.55? A common convention is to refer to the midpoint of the bid/ask spread as the stock's market value. In this case, we could say that Merck's market value is \$83.77, which is halfway between its bid and ask prices.

$$\text{Midpoint of the Bid/Ask Spread} = (\$83.99 + \$83.55) \div 2 = \$83.77$$

Broker Markets Most broker markets consist of national or regional **securities exchanges**, which are organizations that provide a physical marketplace where traders can buy and sell securities. Note that most broker markets are actually broker/dealer markets in the sense that when executing trades the market

securities exchanges

Organizations that provide the marketplace in which firms can raise funds through the sale of new securities and purchasers can resell securities.

maker must act as a broker first, when public orders are available to provide the necessary liquidity, and as a dealer second, when there are no public orders to provide the requisite liquidity.

If you are like most people, the first name that comes to mind in association with the “stock market” is the New York Stock Exchange, known as the NYSE. In fact, the NYSE is the dominant broker market. Internet-based brokerage systems enable investors to place their buy and sell orders electronically, and those orders execute on the NYSE in seconds, thanks to sophisticated telecommunication devices.

For a firm to list its securities for trading on a stock exchange, it must file an application for listing and meet a number of requirements. To be eligible for listing on the NYSE, a firm must have aggregate pretax earnings of at least \$10 million over the previous three years, with at least \$2 million in each of the previous two years, and greater than zero in each of the previous three years; at least 400 stockholders owning 100 or more shares; at least 1.1 million shares of publicly held stock outstanding; a market value of publicly held shares of at least \$40 million; and a public share price of at least \$4. Firms that earn listing status on the NYSE are among the largest public companies, and their shares often trade in multiple venues in addition to the NYSE.

Dealer Markets A key feature of the dealer market is that it has no centralized trading floors. Instead, it is composed of a large number of market makers linked together via a mass-telecommunications network.

Of note, most dealer markets are technically dealer/broker markets in the sense that when executing trades the market maker can act as dealer first, whenever it suits her to provide liquidity, and as broker second, whenever it doesn't suit her to provide liquidity. If a market maker in a dealer market receives an order she does not want to execute, she can simply route the order along to another market maker for execution. For example, she might route the order to a broker market. The two most recognizable dealer markets are the **Nasdaq market**, an all-electronic trading platform used to execute securities trades, and the **over-the-counter (OTC) market**, where investors trade smaller, unlisted securities. Together these two dealer markets account for about 25% of all shares traded in the United States, with the Nasdaq accounting for the overwhelming majority of those trades. (As an aside, the primary market is also a dealer market because all new issues are sold to the investing public by securities dealers, acting on behalf of the investment bank.)

Founded in 1971, the *National Association of Securities Dealers Automated Quotation System*, or simply *Nasdaq*, had its origins in the OTC market but today is a totally separate entity that's no longer part of the OTC market. In fact, in 2006 the Securities and Exchange Commission (SEC) formally recognized the Nasdaq as a “listed exchange,” essentially giving it the same stature and prestige as the NYSE.

In recent years, the distinctions between broker and dealer markets have blurred. Electronic trading platforms, using sophisticated algorithms, place buy and sell orders very rapidly (so-called high-frequency trading), often without any human intervention. These algorithms may allow trading firms to speculate on a stock's price movements, or they may be used to take a single, large buy or sell order and break it into many smaller orders in an effort to minimize the price impact of buying or selling a large quantity of shares. An increasing amount of

Nasdaq market

An all-electronic trading platform used to execute securities trades.

over-the-counter (OTC) market

Market where smaller, unlisted securities are traded.

MATTER OF FACT

NYSE Is the World's Largest Stock Exchange

According to The World Federation of Exchanges, in 2020 the world boasted 77 major stock exchanges with a combined total market value of \$88 trillion. The largest stock market in the world, as measured by the total market value of securities listed on that market, is the NYSE, with listed securities worth more than \$24 trillion, or about 27% of the total market value for all major exchanges globally. The NYSE's total market capitalization is larger than the total market capitalizations of the world's 50 smallest major exchanges combined. The next largest is the Nasdaq at \$11 trillion, with exchanges in Tokyo and Shanghai not far behind at \$6 trillion and \$4 trillion, respectively.

trading takes place today “off exchange,” often in private trading venues known as “dark pools.” Roughly one-third of secondary market trading occurs in these off-exchange environments.

International Capital Markets

Although U.S. capital markets are by far the world's largest, important debt and equity markets exist in many other countries. In the **Eurobond market**, corporations and governments typically issue bonds denominated in dollars and sell them to investors located outside the United States. A U.S. corporation might, for example, issue dollar-denominated bonds that investors in Belgium, Germany, or Switzerland would purchase. Through the Eurobond market, issuing firms and governments can tap a much larger pool of investors than would be generally available in the local market.

The *foreign bond market* is an international market for long-term debt securities. A **foreign bond** is a bond issued by a foreign corporation or government that is denominated in the investor's home currency and sold in the investor's home market. A bond issued by a U.S. company that is denominated in Swiss francs and sold in Switzerland is a foreign bond. Although the foreign bond market is smaller than the Eurobond market, many issuers have found it useful in tapping debt markets around the world.

Finally, the **international equity market** allows corporations to sell blocks of shares to investors in a number of different countries simultaneously. This market enables corporations to raise far larger amounts of capital than they could in any single market. International equity sales have been indispensable to governments that have sold state-owned companies to private investors.

THE EFFICIENT MARKETS HYPOTHESIS

We have already discussed the benefits associated with liquidity in a capital market, namely that buyers and sellers can trade securities without one party or the other having to make a large price concession. Another desirable characteristic of capital markets is efficiency. An **efficient market** establishes prices for securities by rapidly incorporating all available information. In an efficient market, a security's price is an unbiased estimate of its true or intrinsic value. By “unbiased” here we mean something like, “correct on average.” In other words, in an efficient market, a stock or bond or other security can be undervalued or overvalued at any particular time, but on average, “the price is right.”

Eurobond market

The market in which corporations and governments typically issue bonds denominated in dollars and sell them to investors located outside the United States.

foreign bond

A bond that is issued by a foreign corporation or government and is denominated in the investor's home currency and sold in the investor's home market.

international equity market

A market that allows corporations to sell blocks of shares to investors in a number of different countries simultaneously.

efficient market

A market that establishes security prices by rapidly incorporating all available information.

Information in Efficient Markets

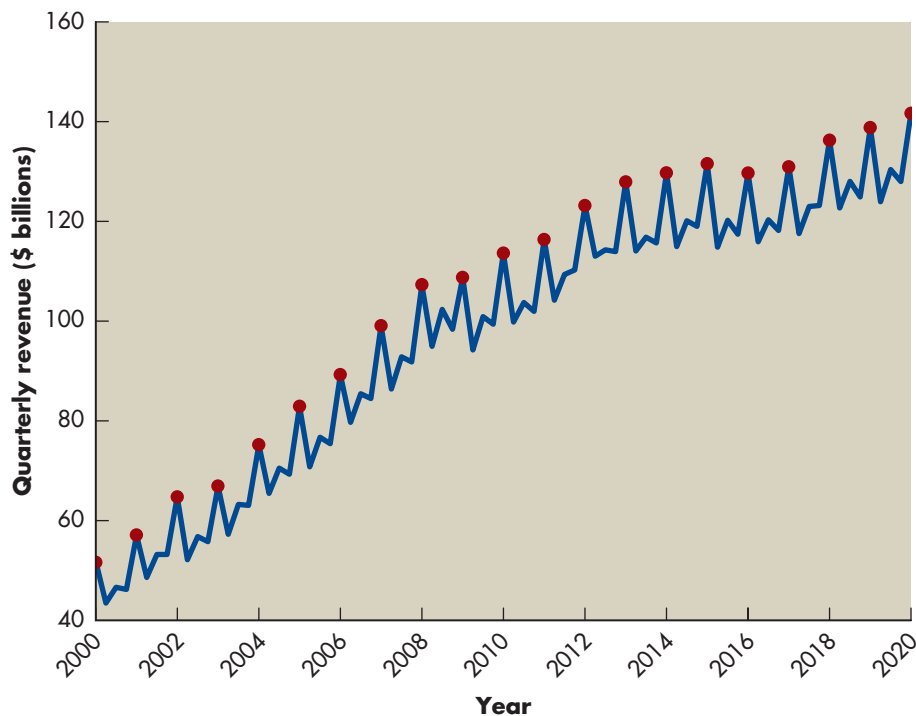
In an efficient market, prices respond to *new* information, and by definition, new information is unpredictable. That is, new information refers to things that market participants do not know today and cannot predict based on other information that they possess. To explore that idea a bit, examine Figure 2.2, which shows quarterly revenues for Walmart from 2000 to January 2020. A quick glance at the figure reveals two obvious patterns. First, Walmart's revenues have grown over time. Investors trying to put a value on Walmart stock know this and will factor some expected growth into what they are willing to pay for the stock. Second, there is clearly one quarter each year in which Walmart's revenue peaks. Marked by red dots in Figure 2.2, those peaks occur in Walmart's fourth quarter, which ends on January 31 each year. In every year since 2000, Walmart has sold more goods in November, December, and January than in any other quarter, a remarkably stable pattern. When you think about this pattern a little, it should come as no surprise. Nearly every retail company in the United States sells more near the end of the year because of the Christmas season, and Walmart is no exception. Investors know this too, so when Walmart announces that fourth-quarter revenues are higher than other quarters in the same year, markets are not surprised.

What would surprise investors and therefore cause a sudden and potentially large change in Walmart's stock price is any sign that the firm's future financial

FIGURE 2.2

Walmart's Quarterly Revenue from 2000 to 2020

Walmart's revenues display a relatively steady, long-term upward trend with a seasonal peak in the fourth quarter of every fiscal year.



performance will deviate from what investors expect. For example, suppose that in 2020 Walmart's revenues were not only high in the fourth quarter (as usual) but were even higher than investors had anticipated. In that case, investors would likely raise their expectations about Walmart's future performance, and the company's stock price would go up. If Walmart reported financial results that failed to match investors' expectations, then its stock price would probably fall as investors revised their views about how the company would perform in the future. What matters then is how Walmart performs relative to expectations. If investors are rational, their expectations will be too lofty sometimes and too pessimistic at other times. This means Walmart's stock movements will appear to be almost random, quite unlike changes in revenues over time.

Figure 2.3 plots Walmart's stock price at the end of each quarter from 2000 to January 2020, the same period covered in Figure 2.2. Like the company's revenues, Walmart's stock price was higher in 2020 than it was in 2000, but it hardly followed the relatively smooth upward trend with fourth-quarter peaks that revenues did. The striking difference between Figures 2.2 and 2.3 is the seemingly random movements in Walmart's stock price, which stand in sharp contrast to the more predictable movements in Walmart's revenues. Clearly there was no tendency for Walmart's stock to peak at the same time that its revenues did (i.e., at the end of the fourth quarter each year, marked by the red dots in Figure 2.3).

FIGURE 2.3**Walmart's Stock Price at Each Quarter End, 2000 to 2020**

Unlike Walmart's revenue, the stock price exhibits neither a steady upward trend nor a seasonal peak each year in the fourth quarter. Instead, the stock price moves in a more random fashion over time.

