finance 5e

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a note from the authors

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

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

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

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

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

KEY THEMES

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

- **Finance is about connecting core concepts.** We all struggle with fitting so many topics into this course, so this text strives to make it easier for you by getting back to the core concepts, key research, and current topics. We realize that today's students expect to learn more in class from lectures than in closely studying their textbooks, so we've created brief chapters that clearly lead students to crucial material that they need to review if they are to understand how to approach core financial concepts. The text is also organized around learning goals, making it easier for you to prep your course and for students to study the right topics.
- **Finance can be taught using a personal perspective.** Most long-term finance instructors have often heard students ask "How is this course relevant to me?" on the first day of class. We no longer teach classes dedicated solely to finance majors; many of us now must teach the first finance course to a mix of business majors. We need to give finance majors the rigor they need while not

overwhelming class members from other majors. For years, instructors have used individual examples to help teach these concepts, but this is the first text to integrate this personal way of teaching into the chapters.

- **Finance focuses on solving problems and decision making.** This isn't to say that concepts and theories aren't important, but students will typically need to solve some kind of mathematical problem—or at least understand the impact of different numerical scenarios—to make the right decision on common finance issues. If you, as an instructor, either assign problems for homework or create exams made up almost entirely of mathematical material, you understand the need for good problems (and plenty of them). You also understand from experience the number of office hours you spend tutoring students and grading homework. Students have different learning styles, and this text aims to address that challenge to allow you more time in class to get through the critical topics.

changes in the fifth edition

The 2018 Tax Cuts and Jobs Act significantly impacts a firm's cost of capital, estimation of project cash flows, and more. As capital budgeting is an important part of this book, we have quickly incorporated the new environment into our theory and applications. In addition, we have updated every chapter. Below are the changes we made for this fifth edition, broken out by chapter.

OVERALL

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

chapter one

INTRODUCTION TO FINANCIAL MANAGEMENT

- Updated the Personal Application with information on firms that have filed for bankruptcy more recently
- Changed Learning Goal 1-9 to address the new tax law change and its ramifications on businesses
- Updated the data in Example 1-2 on executive compensation
- Replaced Section 1.7 on the financial crisis with a new Section 1.7: Big Picture Environment, to discuss the ramifications of the Tax Cuts and Jobs Act of 2017

chapter two

REVIEWING FINANCIAL STATEMENTS

- Added discussion of changes to recording of bonus depreciation under TCJA
- Added new TCJA corporate tax rate throughout the chapter, in-chapter examples, self-test problems, end-of-chapter questions and problems
- Added new TCJA cap on tax deductibilty of interest
- Added a new Finance at Work box
- Added updated financial examples

chapter three

ANALYZING FINANCIAL STATEMENTS

- Added more discussion of how TCJA affects tax deductibility of interest and, thus once the tax deductible limit is reached, the attractiveness of debt as a source of financing
- Updated all in-chapter examples, end-of-chapter problems, and Integrated Mini-Case to reflect new tax laws

chapter four

TIME VALUE OF MONEY 1: ANALYZING SINGLE CASH FLOWS

- Updated the data in Figure 4.5 on gold prices
- Updated the gold return data in the Mini-Case

chapter five

TIME VALUE OF MONEY 2: ANALYZING ANNUITY CASH FLOWS

- Updated discussions to current events

chapter six

UNDERSTANDING FINANCIAL MARKETS AND INSTITUTIONS

- Updated figures and tables throughout the chapter
- Noted that the TCJA has put a $10,000 limit on tax relief on interest on municipal bonds

chapter seven

VALUING BONDS

- Updated Figures 7.1–7.5 on bond issuance, interest rate path, yield to maturities, new bond quotes, and a summary of the bond market
- Updated Marginal Tax Brackets in Self-Test Problem #3
- Changed problem answers in Connect to reflect previous change in Treasury bond quote format

chapter eight

VALUING STOCKS

- Updated all table and figure values in the body of the chapter
- Updated the coverage of the stock market exchange in Section 8.2 to discuss the changes that have occurred in the NYSE and elsewhere
- Revised examples to include new firm data and solution figures

chapter nine

CHARACTERIZING RISK AND RETURN

- Revised the example that runs throughout the chapter to replace Staples with Boeing
- Updated all table and figure values in the body of the chapter
- Updated Timeout 9-2 and 9-4
- Revised Example 9-1 to discuss the failed Broadcom takeover of Qualcomm
- Revised Example 9-2 to include Boeing and Bank of America
- Revised the data for the end-of-chapter Excel problem
- Updated the data in the Mini-Case problem

chapter ten

ESTIMATING RISK AND RETURN

- Updated values and data in Tables 10.1–10.4
- Changed discuss and Figure 10.2 to be about Disney
- Updated the Mini-Case data
- Updated data for end-of-chapter Excel problem

chapter eleven

CALCULATING THE COST OF CAPITAL

- Added new TCJA corporate tax rate throughout the chapter, in-chapter examples, self-test problems, and end-of-chapter questions and problems
- Updated Viewpoints to reflect revised corporate and personal tax rates
- Revised conceptual material throughout chapter to reflect the fact that, under TCJA, some interest on debt may not be fully tax deductible, while at the same time more capital expenditures are now immediately expensable using bonus depreciation or increased Section 179 deductions
- Updated Equation 11-1 and added Equation 11-2 to reflect two possible cases for the deductibility of debt interest
- Revised discussion of corporate tax rates in calculation of project WACC

chapter twelve

ESTIMATING CASH FLOWS ON CAPITAL BUDGETING PROJECTS

- Added new TCJA corporate tax rate throughout the chapter, in-chapter examples, self-test problems, and end-of-chapter questions and problems
- Updated Viewpoints to reflect revised corporate tax rates
- Revised discussion of calculation of OCF and total cash flows to reflect updated corporate tax rates
- Added discussion of bonus depreciation revised discussion of Section 170 deductions to reflect TCJA

chapter thirteen

WEIGHING NET PRESENT VALUE AND OTHER CAPITAL BUDGETING CRITERIA

- Clarified the discussions of discounted payback and internal rate of return
- Refined the discussion of why using rate-based and time-based decision statistics to choose across projects can be misleading with regards to NPV

chapter fourteen

WORKING CAPITAL MANAGEMENT AND POLICIES

- Refined discussion of the rationale for NWC and the tradeoffs inherent in having too little or too much

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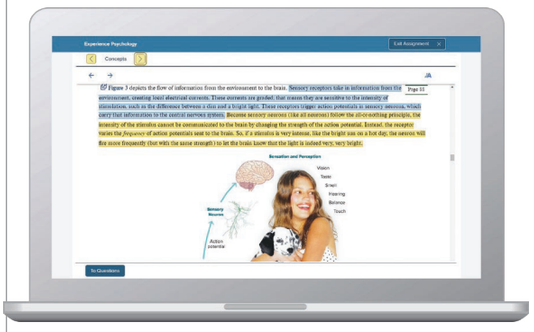

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Eastern Washington University

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finance 5e

introduction to financial management

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part one

chapter one

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

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

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

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

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

continued on p. 4

LEARNING GOALS

After reading this chapter, you should be able to:

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

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

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

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

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

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

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

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

LG1-9 Understand how the new tax law impacts financial decision making.

viewpoints

business APPLICATION

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

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

continued from p. 3

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

1.1 • FINANCE IN BUSINESS AND IN LIFE LG1-1

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

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

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

What Is Finance?

To get the clearest possible picture of how finance works, let's begin by grouping all of an economy's participants along two dimensions. The first dimension is made up of those who may have "extra" money (i.e., money above and beyond their current spending needs) for investment. The second dimension is made up of those who have an ability to develop

personal APPLICATION

Dagmar is becoming interested in investing some of her money. However, she has heard about several corporations in which the investors lost all of their money. Recently, Dagmar has heard that Toys 'R' Us (2017), Nine West (2018), and Remington (2018) have all filed for bankruptcy. These firms' stockholders lost their entire investments in these firms.

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

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

viable business ideas, a sense of business creativity. Both money and ideas are fuel for the financial engine. In our simple model, these two dimensions result in four groups representing economic roles in society, as shown in Figure 1.1. Of course, people can move from one group to another over time.

financial markets The arenas through which funds flow.

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

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

Now for our financial role players, the type 2 and type 3 people. Financial markets and financial institutions allow these people to participate in a mutually advantageous exchange. Type 2 people temporarily lend their money to type 3 people, who put that money to use with their good business ideas, and whom then turn around and (hopefully) repay the type 2 people, plus interest.

FIGURE 1.1 Participants in Our Hypothetical Economy

	No Extra Money	**Extra Money**
No Economically Viable Business Ideas	Type 1: No money and no ideas	Type 2: Money but no ideas
Economically Viable Business Ideas	Type 3: No money but ideas	Type 4: Both money and ideas

Four groups form according to the availability of money and ideas.

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

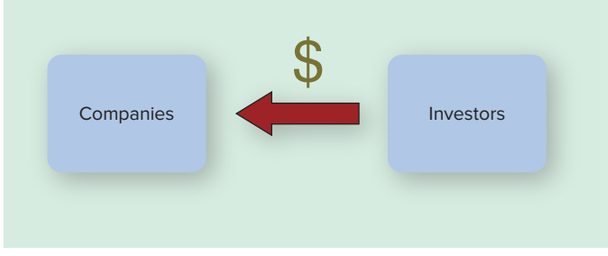
retained earnings The portion of company profits that are kept by the company rather than distributed to the stockholders as cash dividends.

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

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

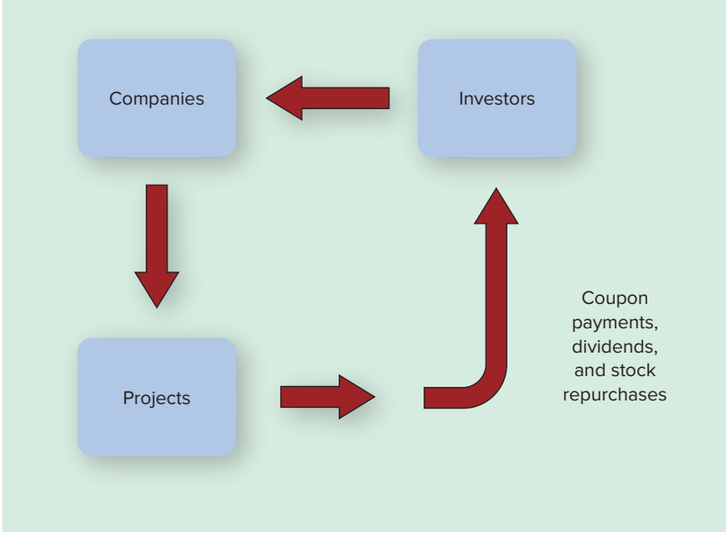
Of course, not all of the cash will return to the investors. In reality, sources of friction arise in this system, and the amount of capital returned to investors is reduced. Two primary sources of friction are **retained earnings,** which are basically funds the firm keeps for its ongoing operations, and *taxes,* which the government imposes on the company and individuals to help fund public services.

FIGURE 1.2 Capital Flow from Investors to Companies



Investors are people or groups who need ideas to make more money, and companies are groups who need money to develop the ideas they do have.

FIGURE 1.3 Return of Capital to Investors



In this basic process, the company can expand its business, hire more employees, and create a promising future for its own growth. Meanwhile, the investor can increase wealth for the future.

As described at the end of this chapter, tax laws in the United States underwent massive changes as a result of the Tax Cuts and Jobs Act (TCJA) signed into law by President Trump in 2017. As we'll discuss, many of these changes have significant impacts on the financial decisions of the firm.

Figure 1.4 shows an analysis of cash flows with the associated retained earnings and tax payments. In a very simple way, this figure provides an intuitive overall explanation of finance and of its major subareas. For example, individuals must assess which investment opportunities are right for their needs and risk tolerance; financial institutions and markets must efficiently distribute the capital; and companies must evaluate their potential projects and wisely decide which projects to fund, what kind of capital to use, and how much capital to return to investors. All of these types of decisions deal with the basic cash flows of finance shown in Figure 1.4, but from different perspectives.

Subareas of Finance

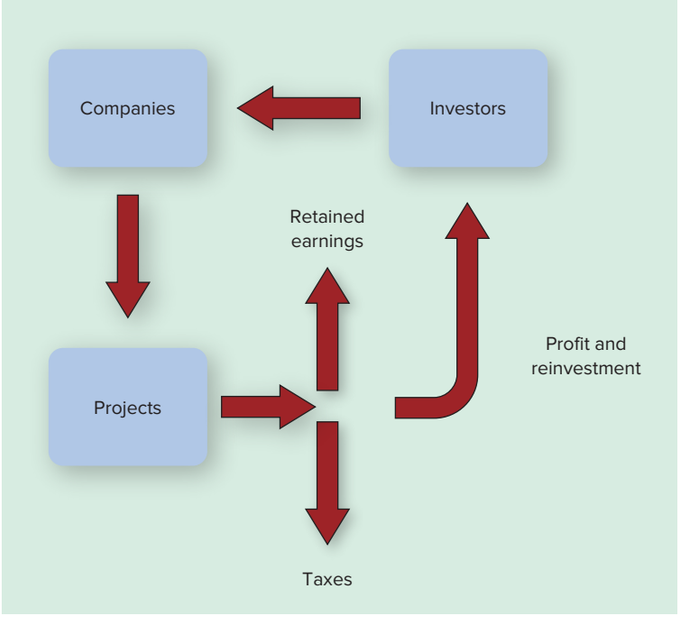
Investments is the subarea of finance that involves methods and techniques for making decisions about what kinds of *securities* to own (e.g., bonds or stocks), which firms' securities to buy, and how to pay the investor back in the form that the investor wishes (e.g., the timing and certainty of the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

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

Financial management is the subarea that deals with a firm's decisions in acquiring and using the cash that is received from investors or from retained earnings. Figure 1.6 depicts the financial management process very simply. As we know, this text focuses primarily on financial management. We'll see that this critical area of finance involves decisions about

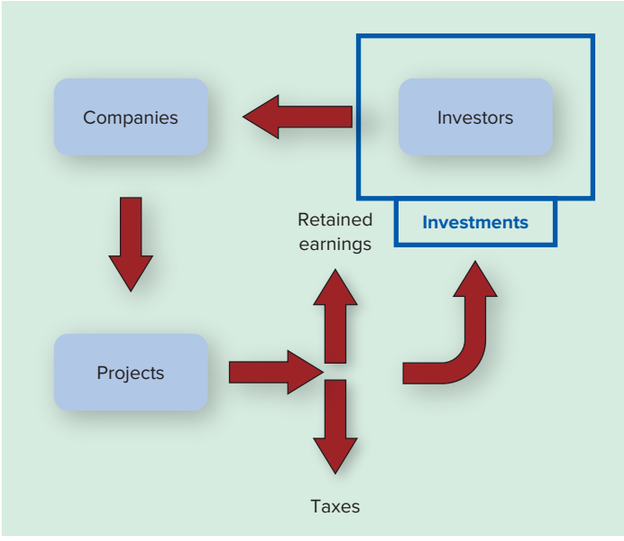
- How to organize the firm in a manner that will attract capital.
- How to raise capital (e.g., bonds versus stocks).
- Which projects to fund.

FIGURE 1.4 The Complete Cash Flows of Finance



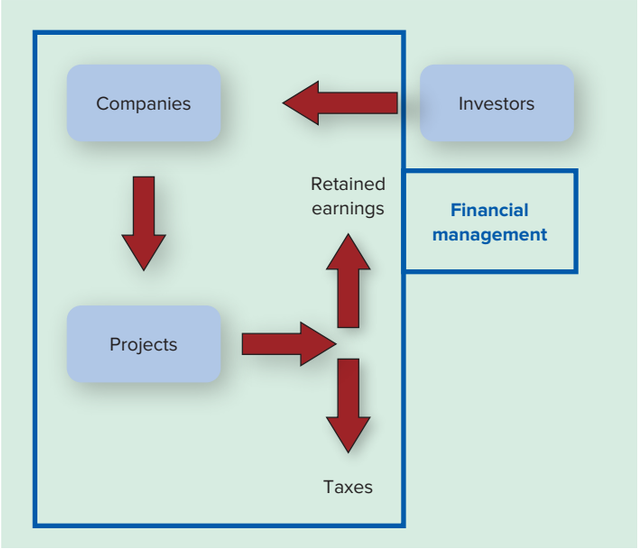
All the subareas of the financial system interact, with retained earnings and taxes playing a role in the flows.

FIGURE 1.5 Investments



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

FIGURE 1.6 Financial Management



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

- How much capital to retain for ongoing operations and new projects.
- How to minimize taxation.
- How to pay back capital providers.

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

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

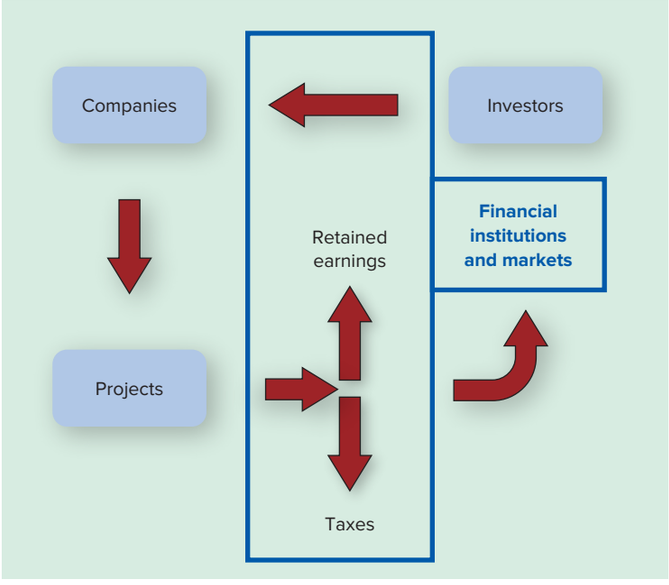
Financial institutions and markets make up another major subarea of finance. These two dynamic entities work in different ways to facilitate capital flows between investors and companies. Figure 1.7 illustrates the process in which the firm acquires capital and investors take part in ongoing securities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

institutions, such as banks and pension administrators, are vital players that contribute to the dynamics of interest rates.

International finance is the final major subarea of finance we will study. As the world has transformed into a global economy, finance has had to become much more innovative and sensitive to changes in other countries. Investors, companies, business operations, and capital markets may all be located in different countries. Adapting to this environment requires understanding of international dynamics, as Figure 1.8 shows. In the past,

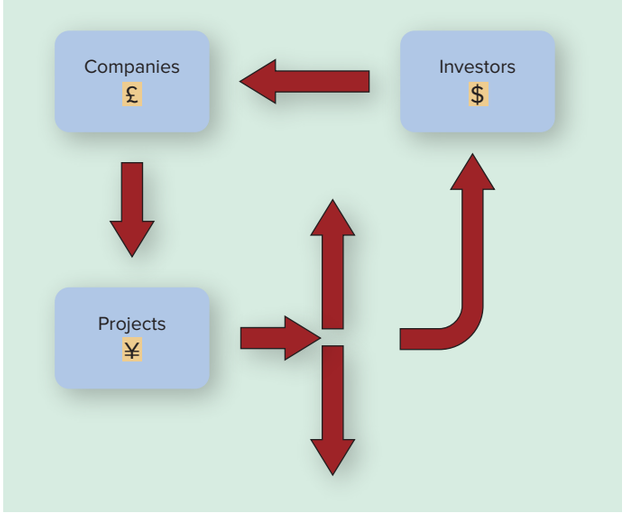
international finance The use of finance theory in a global business environment.

FIGURE 1.7 Financial Institutions and Markets



Financial institutions and markets facilitate the flows of money between investors and companies.

FIGURE 1.8 International Finance



Laws, risks, and business relationships are variable across different countries but can interact profitably.

finance at work //: markets

Quantitative Easing in the United States and around the World

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

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

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

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

Instead of ending QE 3, the Fed decided to reduce its purchases each month through most of 2014. This QE taper was an attempt to wean the economy from the constant Fed influence. QE 3 finally tapered out at the end of 2014. Speculation then grew about when the Fed would start raising interest rates. The Fed finally raised its key interest rate to 0.25 percent on December 16, 2015. It was the first rate hike in nearly 10 years. Subsequently, the Fed continued to raise the Fed funds rate in 0.25 percent increments, until, by March of 2018, the rate had risen to 1.75 percent. However, this is still below the historical target range of 2 percent to 5 percent preferred by the Federal Reserve.

DAJ/Getty Images

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

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

Want to know more?

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

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

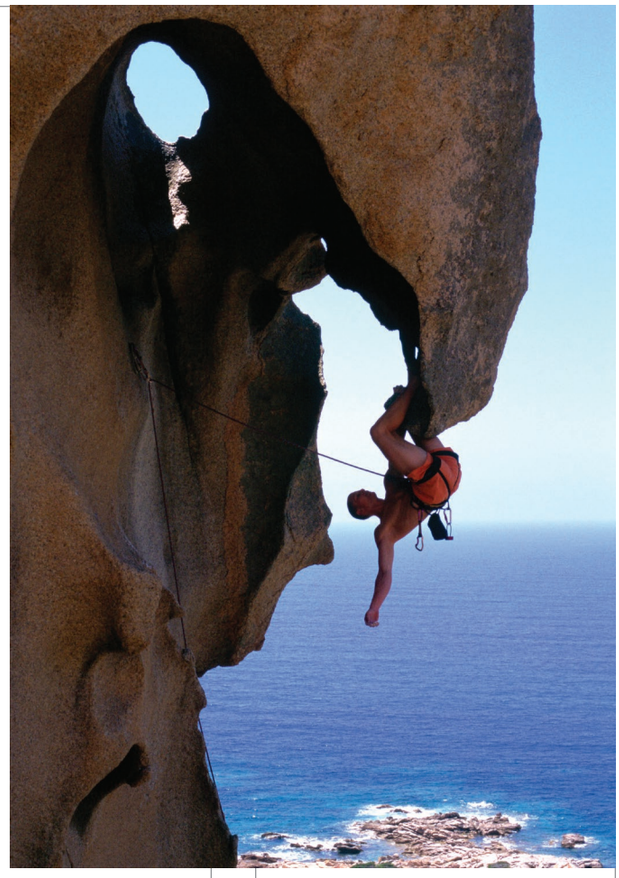
international financial decisions were considered to be a straightforward application of the other three financial subareas. But experience has shown that the uncertainty about future exchange rates, political risk, and changing business laws across the globe adds enough complexity to these decisions to classify international finance as a subarea of finance in its own right.

Application and Theory for Financial Decisions

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

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

Financial assets are normally grouped into **asset classes** according to their risk and return characteristics. The most commonly accepted groups of asset classes are stocks, bonds, money market instruments, real estate, and derivative securities, all of which we will discuss in more detail later in the book. As the risk and return profiles of each of these asset classes differ widely between classes, the mathematical models, terminology, and expertise of each class tend to be very specialized and trading tends to happen in distinct, separate financial markets for each asset class.



Risk tolerance varies among individuals.
Purestock/SuperStock

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

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

Finance versus Accounting

In most companies, the financial function is usually closely associated with the accounting function. In a very rough sense, the accountant's job is to keep track of what happened *in the past* to the firm's money, while the finance job uses these historical figures with current information to determine what should happen *now and in the future* with the firm's money. The results of financial decisions will eventually appear in accounting statements, so this close association makes sense. Nevertheless, accounting tends to focus on and characterize the past, while finance focuses on the present and future.

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

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

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

time **out!**

1-1 What are the main subareas of finance and how do they interact?

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

time value of money (TVM) The theory and application of valuing cash flows at various points in time.

defined benefit plan A retirement plan in which the employer funds a pension generally based on each employee's years of service and salary.

defined contribution plan A retirement plan in which the employee contributes money and directs its investment. The amount of retirement benefits are directly related to the amount of money contributed and the success of its investment.

401k plan A defined contribution plan that is sponsored by corporate employers.

Individual Retirement Account (IRA) A self-sponsored retirement program.

time **out!**

1-2 How might the application of finance improve your professional and personal decisions?

1.2 • THE FINANCIAL FUNCTION LG1-2

As we said previously, this text focuses primarily on financial management, so we will discuss the particular functions and responsibilities of the firm's financial manager. We will also explain how the financial function fits in and interacts with the other areas of the firm. Finally, to make this study as interesting and as relevant as possible, we will make the connections that allow you to see how the concepts covered in this book are important in your own personal finances.

The Financial Manager

The firm's highest-level financial manager is usually the chief financial officer, or CFO. Both the company treasurer and the controller report to the CFO. The treasurer is typically responsible for

- Managing cash and credit.
- Issuing and repurchasing financial securities such as stocks and bonds.
- Deciding how and when to spend capital for new and existing projects.
- Hedging (reducing the firm's potential risk) against changes in foreign exchange and interest rates.

In larger corporations, the treasurer may also oversee other areas, such as purchasing insurance or managing the firm's pension fund investments. The controller oversees the accounting function, usually managing the tax, cost accounting, financial accounting, and data processing functions.

Finance in Other Business Functions

Although the CFO and treasurer positions tend to be the firm's most visible finance-related positions, finance affects the firm in many ways and throughout all levels of a company's organizational chart. Finance permeates the entire business organization, providing guidance for both strategic and day-to-day decisions of the firm and collecting information for control and feedback about the firm's financial decisions.

Operational managers use finance daily to determine how much overtime labor to use, or to perform cost/benefit analysis when they consider new production lines or methods. Marketing managers use finance to assess the cost effectiveness of doing follow-up marketing surveys. Human resource managers use finance to evaluate the company's cost for various employee benefit packages. No matter where you work in business, finance can help you do your job better.

Finance in Your Personal Life LG1-3

Finance can help you make good financial decisions in your personal life. Consider these common activities you will probably face in your life:

- Borrowing money to buy a new car.
- Refinancing your home mortgage at a lower rate.
- Making credit card or student loan payments.
- Saving for retirement.

You will be able to perform all of these tasks better after learning about finance. Recent changes throughout our economy and the U.S. business environment make knowledge of finance even more valuable to you than before. For example, most companies have switched from providing **defined benefit** retirement plans to employees to offering **defined contribution** plans (such as **401k plans**) and self-funded plans like **Individual Retirement Accounts (IRAs).** Tax changes in the early 1980s made this switch more or less inevitable. It appears that each of us will have to ensure adequate funds for our own retirement—much more so than previous generations.

EXAMPLE 1-1

For interactive versions of this example, log in to Connect or go to mhhe.com/CornettM5e.

Finance Applications LG1-3

Chloe realizes how important finance will be for her future business career. However, some of the ways that she will see financial applications seem way off in the future. She is curious about how the theory applies to her personal life, both in the near term and in the long term.

SOLUTION:

Chloe will quickly find that her financial health now and in the future will depend upon many decisions she makes as she goes through life—starting now! For example, she will learn that the same tools that she applies to a business loan analysis can be applied to her own personal debt. After this course, Chloe will be able to evaluate credit card offers and select one that could save her hundreds of dollars per year. When she buys a new car and the dealership offers her a low-interest-rate loan or a higher-rate loan with cash back, she will be able to pick the option that will truly cost her the least. Also, when Chloe gets her first professional job, she will know how to direct her retirement account so that she can earn millions of dollars for her future. (Of course, inflation between now and when she retires will imply that Chloe's millions won't be worth as much as they would today.)

1.3 • BUSINESS ORGANIZATION LG1-4

In the United States, people can structure businesses in any of several ways; the number of owners is the key to how business structures are classified. Traditionally, single owners, partners, and corporations operate businesses. We can express the advantages and disadvantages of each organizational form through several dimensions:

- Who controls the firm.
- Who owns the firm.
- What are the owners' risks.
- What access to capital exists.
- What are the tax ramifications.

Recently, small businesses have adopted hybrid structures that capture the benefits from multiple organizational forms. We'll discuss those hybrid structures after we cover the more common, traditional types of business organizations.

Sole Proprietorships

The **sole proprietorship** represents, by far, the most common type of business in the United States.[1] A sole proprietorship is defined as any unincorporated business owned by a single individual.[2] Perhaps these businesses are so popular because they are relatively easy to start, and they're subject to a much lighter regulatory and paperwork burden than other business forms. The owner, or sole proprietor, of the business has complete control of the firm's activities. The owner also receives all of the firm's profits and is solely responsible for all losses.

The biggest disadvantage that sole proprietorships carry relative to other organizational forms is that they have **unlimited liability** for their companies' debts and actions. The owner's personal assets may be confiscated if the business fails. The law recognizes no distinction between the owner's business assets and personal assets. The income of the business is also added to the owner's personal income and taxed by the government at the appropriate personal tax rate. Finally, sole proprietors have a difficult time obtaining capital to expand their business operations. Banks and other lenders are not typically interested in lending much money to sole proprietors because small firms have only one person liable for paying back the debt. A sole proprietor could raise capital by issuing **equity** to another investor. **Angel investors** and **venture capitalists** exchange capital for ownership in

sole proprietorship A business entity that is not legally separate from its owner.

unlimited liability A situation in which a person's personal assets are at risk from a business liability.

equity An ownership interest in a business enterprise.

angel investors Individuals who provide small amounts of capital and expert business advice to small firms in exchange for an ownership stake in the firm.

venture capitalists Similar to angel investors except that they are organized as groups of investors and can provide larger amounts of capital.

Venture capital helped Starbucks become a success story.
John Flournoy/McGraw-Hill Education

a business. But this requires re-forming the business as a partnership and the sole proprietor must give up some of the ownership (and thus control) of the firm. Table 1.1 summarizes sole proprietorships' characteristics, along with those of the three other business organizations we will study.

Partnerships

A **general partnership,** or as it is more commonly known, a *partnership,* is an organizational form that features multiple individual owners. Each partner can own a different percentage of the firm. Firm control is typically determined by the size of partners' ownership stakes. Business profits are split among the partners according to a prearranged agreement, usually by the percentage of firm ownership. Received profits are added to each partner's personal income and taxed at personal income tax rates.

The partners jointly share unlimited personal liability for the debts of the firm and all are obligated for contracts agreed to by any one of the partners. Banks are more willing to lend to partnerships than to sole proprietorships, because all partners are liable for repaying the debt. Partners would have to give up some ownership and control in the firm to raise more equity capital. In order to raise enough capital for substantial growth, a partnership often changes into a public corporation.

Corporations

A **public corporation** is a legally independent entity entirely separate from its owners. This independence dramatically alters the firm's characteristics. Corporations hold many rights and obligations of individual persons, such as the ability to own property, sign binding contracts, and pay taxes. Federal and state governments tax corporate income once at the corporate level. Then shareholders pay taxes again at the personal level when corporate profits are paid out as dividends. This practice is generally known as **double taxation.**

Corporate owners are stockholders, also called *shareholders.* Public corporations typically have thousands of stockholders. The firm must hire managers to direct the firm, since thousands of individual shareholders could not direct day-to-day operations under any sort of consensus. As a result, managers control the company. Strong possibilities of conflicts of interests arise when one group of people owns the business, but another group controls it. We'll discuss conflicts of interest and their resolution later in the chapter.

general partnership A form of business organization where the partners own the business together and are personally liable for legal actions and debts of the firm.

public corporation A company owned by a large number of stockholders from the general public.

double taxation A situation in which two taxes must be paid on the same income.

TABLE 1.1 Characteristics of Business Organization

	Ownership	Control	Ownership Risk	Access to Capital	Taxes
Sole Proprietor	Single individual	Proprietor	Unlimited liability	Very limited	Paid by owner
Partnership	Multiple people	Shared by partners	Unlimited liability	Limited	Paid by partners
Corporation	Public investors who own the stock	Company managers	Stockholders can only lose their investment in the firm	Easy access	Corporation pays income tax and stockholders pay taxes on dividends
Hybrids: S-corp, LLP, LLC, LP	Partners or shareholders	Shared	Mostly limited	Limited by firm size restrictions	Paid by partners or shareholders

finance at work //: corporate

More Beer

In November 2015, Anheuser-Busch InBev NV agreed to buy SABMiller for $104 billion. AB InBev produces the popular beer brands Budweiser, Corona, Stella Artois, Beck's, Hoegaarden, and Leffe. SABMiller is known for Miller, Foster's, and Grolsch, among others. These are the two largest brewing companies in the world. The combined firm would produce nearly a third of the beer worldwide.

InBev paid 45 pounds sterling ($59) in cash per share for a majority of SABMiller shares. This was a 50 percent increase, or premium, over the market price of SABMiller stock. This merger raised many interesting finance questions. For example, why did InBev believe that SABMiller should be valued at least 50 percent more than the market does? Why were they paying cash for the shares instead of exchanging their stock for SABMiller stock? What are the business opportunities and cost-cutting cash flows of the combined firm that were not available as separate firms?

This book describes the theories and tools needed to make these judgments. The practice of finance isn't just about numbers, it is about real valuation and cash flow—the results of the financial analysis are very dynamic and exciting!

This proposed merger will have significant hurdles to overcome in order to be completed. Governments regulate mergers to ensure competition in consumer markets. For example, in many regions of the United States, Budweiser and Miller together make up a high percentage of the market. Thus, if one firm owned both brands, a near monopoly would occur. The U.S. regulatory system would not allow that. So to prevent this objection, SABMiller is selling its stake in this brand to Molson Coors Brewing for $12 billion. Other countries mad similar concerns. This mega merger took nearly a year to gain the needed shareholder approval and regulatory approval around the world. The deal finally closed and the two firms became one in October 2016.

scukrov/123RF

Want to know more?

Key Words to Search for Updates: **InBev, SABMiller, beer**

As individual legal entities, corporations assume liability for their own debts, so the shareholders have only **limited liability.** That is, corporate shareholders cannot lose more money than they originally paid for their shares of stock. This limited liability is one reason that many people feel comfortable owning stock. Corporations are thus able to raise incredible amounts of money by selling stock (equity) and borrowing money. The largest businesses in the world are organized as corporations.

Hybrid Organizations

To promote the growth of small businesses, the U.S. government allows for several types of business organizations that simultaneously offer limited personal liability for the owners *and* provide a pass-through of all firm earnings to the owners, so that the earnings are subject only to single taxation.

Hybrid organizations offer single taxation and limited liability to all owners. Examples are *S corporations, limited liability partnerships (LLPs),* and *limited liability companies (LLCs).* Others, called *limited partnerships (LPs),* offer single taxation and limited liability

limited liability Limitation of a person's financial liability to a fixed sum or investment.

hybrid organizations Business forms that have some attributes of corporations and some of proprietorships/partnerships.

time out!

1-3 Why must an entrepreneur give up some control of the business as it grows into a public corporation?

1-4 What advantages does the corporate form of organization hold over a partnership?

maximization of shareholder wealth A view that management should first and foremost consider the interests of shareholders in its business decisions.

stakeholder A person or organization that has a legitimate interest in a corporation.

invisible hand A metaphor used to illustrate how an individual pursuing his own interests also tends to promote the good of the community.

to the *limited partners,* but also have *general partners,* who benefit from single taxation but also must bear personal liability for the firm's debts.

The U.S. government typically restricts hybrid organization status to relatively small firms. The government limits the maximum number of shareholders or partners involved,[3] the maximum amount of investment capital allowed, and the lines of business permitted. These restrictions are consistent with the government's stated reason for allowing the formation of these forms of business organization—to encourage the formation and growth of small businesses.

1.4 • FIRM GOALS LG1-5

Tens of thousands of public corporations operate in the United States. Many of them are the largest business organizations in the world. Because U.S. corporations are so large and because there are so many of them, corporations have a tremendous impact on society. Given the power that these huge firms wield, many people question what the corporate goals should be. Two different, well-developed viewpoints have arisen concerning what the goal of the firm should be. The owners' perspective holds that the only appropriate goal is to **maximize shareholder wealth.** The competing viewpoint is from the **stakeholders'** perspective, which emphasizes social responsibility over profitability. This view maintains that managers must maximize the total satisfaction of all stakeholders in a business. These stakeholders include the owners and shareholders, but also include the business's customers, employees, and local communities.

While strong arguments speak in favor of both perspectives, financial practitioners and academics now tend to believe that the manager's primary responsibility should be to maximize shareholder wealth and give only secondary consideration to other stakeholders' welfare. One of the first, and most well known, proponents of this viewpoint was Adam Smith, an 18th-century economist who argued that, in capitalism, an individual pursuing his own interests tends also to promote the good of his community.[4]

Smith argued that the **invisible hand** of the market, acting through competition and the free price system, would ensure that only those activities most efficient and beneficial to society as a whole would survive in the long run. Thus, those same activities would also profit the individual most. When companies try to implement a goal other than profit maximization, their efforts tend to backfire. Consider the firm that tries to maximize employment. The high number of employees raises costs. Soon the firm will find that its costs are too high to allow it to compete against more efficient firms, especially in a global business environment. When the firm fails, all employees are let go and employment ends up being minimized, not maximized.

Regardless of whether you believe Smith's assertion or not, a more pragmatic reason supports the argument that maximizing owners' wealth is an admirable goal. As we will discuss, the owners of the firm hire managers to work on their behalf, so the manager is morally, ethically, and legally required to act in the owners' best interests. Any relationships between the manager and other firm stakeholders are necessarily secondary to the goal that shareholders give to their hired managers.

Maximizing owners' equity value means carefully considering

- How best to bring additional funds into the firm.
- Which projects to invest in.
- How best to return the profits from those projects to the owners over time.

For corporations, maximizing the value of owners' equity can also be stated as *maximizing the current value per share, or* ***stock price****, of existing shares.* To the extent that the current stock price can be expected to include the present value of any future expected cash flows accruing to the owners, the goal of maximizing stock price provides us with a single,

concrete, measurable gauge of value. You may be tempted to choose several other potential goals over maximizing the value of owners' equity. Common alternatives are

- Maximizing net income or profit.
- Minimizing costs.
- Maximizing market share.

Although these may look appealing, each of these goals has some potentially serious shortcomings. For example, net income is measured on a year-by-year or quarter-by-quarter basis. When we say that we want to maximize profits, to *which* net income figure are we referring? We can maximize this year's net income in several legitimate ways, but many of these ways impose costs that will reduce future income. Or, current net income can be pushed into future years. Neither of these two extremes will likely encourage the firm's short-term and long-term stability. One more likely goal would be to maximize today's value of *all* future years of net income. Of course, this possible goal is very close to maximizing the current stock price, without the convenient market-oriented measure of the stock price. Another problem with considering maximizing all future profits as the goal is that net income (for reasons we'll go into later) does not really measure how much money the firm is actually earning.

Minimizing costs and *maximizing market share* also have fundamental problems as potential goals. Certainly minimizing costs would not make some stakeholders, such as employees, very happy. In addition, without spending the money on R&D and new product development, many companies would not survive long in the ever-evolving economy without improving their products. A firm can always increase market share by lowering price. But if a firm loses money on every product sold, then selling more products will simply drive the firm into fiscal distress.

time out!

1-5 Describe why the primary objective of maximizing shareholder value may actually be the most beneficial for society in the long run.

1.5 • AGENCY THEORY LG1-6

Whenever one party (the *principal*) hires someone else (the *agent*) to work for him or her, their interaction is called an *agency relationship.* The agent is always supposed to act in the principal's best interests. For example, an apartment complex manager should ensure that tenants aren't doing willful damage to the property, that fire codes are enforced, and that the vacancy rate is kept as low as possible, because these are best for the apartment owner.

agency problem The difficulties that arise when a principal hires an agent and cannot fully monitor the agent's actions.

chief executive officer (CEO) The highest-ranking corporate manager.

Agency Problem

In the context of a public corporation, we have already noted that stockholders hire managers to run the firm. Ideally, managers will operate the firm so that the shareholders realize maximum value for their equity. But managers may be tempted to operate the firm to serve their own best interests. Managers could spend company money to improve their own lifestyle instead of earning more profits for shareholders. Sometimes the manager's best interest does not necessarily align with shareholder goals. This creates a situation that we refer to as the **agency problem.**

For example, suppose it is time to buy a new corporate car for the firm's **chief executive officer (CEO)**. Assuming that the CEO has no extraordinary driving requirements, shareholders might wish for the CEO to buy a nice, conservative domestic sedan. But suppose that the CEO demands the newest, biggest luxury car available. It's tempting to say that the shareholders could just tell the CEO which car to buy. But remember, the CEO has most of the control in a public corporation. Organizational behavior specialists have identified three basic approaches to minimize this conflict of interest. First, ignore it. If the amount of money involved is small

Perks can range from extra vacation to private transportation.
Digital Vision/Getty Images

perks/perquisites Nonwage compensation, often in the form of company car, golf club membership, and so forth.

economies of scale Cost advantages when fixed costs are spread over a large number of units.

option The opportunity to buy stock at a fixed price over a specific period of time.

employee stock option plan (ESOP) An incentive program that grants options to employees (typically managers) as compensation.

corporate governance The set of laws, policies, incentives, and monitors designed to handle the issues arising from the separation of ownership and control.

board of directors The group of directors elected by stockholders to oversee management in a corporation.

auditor A person who performs an independent assessment of the fairness of a firm's financial statements.

enough relative to the firm's cash flows, or if the suitability of the purchase in question is ambiguous enough, shareholders might be best served to simply overlook the problem. A good deal of research literature suggests that allowing the manager a certain amount of such **perks (perquisites)** might actually enhance owner value, in that such items may boost managers' productivity.[5]

The second approach to mitigating this conflict is to monitor managers' actions. Monitoring at too fine a level of detail is probably counterproductive and prohibitively expensive. However, major firm decisions are usually monitored at least roughly through the accounting auditing process.

In addition, concentrated ownership in the firm by large stakeholders such as financial institutions, investment companies, individual block holders, or debt holders give those large stakeholders increased incentives to monitor the activities of management. These incentives are often driven by both **economies of scale** in monitoring and by the claim of the stakeholder having a different risk/return profile than the claim of other stakeholders.

To see the impact of economies of scale in monitoring costs, consider a simple example: Suppose that it costs $3 each way (i.e., $6 round-trip) for a shareholder in a firm to hop on the subway and ride down to the firm's offices in order to go through the firm's financial statements, and that the most savings to shareholders that could possibly result from this monitoring would be $5 per share. Would anyone owning a single share ever take the ride to check up on the firm? No, because it would cost a certain $6 in order to save a possible $5. However, someone owning 100 shares in the firm would find it worthwhile to pay for the subway ride, assuming that the chance of saving $5 × 100 = $500 is large enough.

To envision the effect of one stakeholder having a different claim than others, consider the position of a bondholder in a firm where there isn't much free cash flow in the firm above and beyond that which is needed to make the interest payments on her bond. If the manager of the firm is going to spend an extra $20,000 to buy an unnecessarily luxurious company car, that $20,000 is very likely to come out of the bondholder's pocket, so she will definitely have a heightened incentive to monitor the manager's company car purchase. On the other hand, if the firm had so much free cash flow available that the expenditure of the extra $20,000 is unlikely to affect the payment of the bond interest, then the bondholder would have much less incentive to monitor.[6]

The final approach for aligning managers' personal interests with those of owners is to make the managers owners—that is, to offer managers an equity stake in the firm so that management participates in any equity value increase. Many corporations take this approach, either through explicitly granting shares to managers, by awarding them **options** on the firm's stock, or by allowing them to purchase shares at a subsidized price through an **employee stock option plan (ESOP).** When firm managers are also firm owners, their incentives are more likely to align with stockholders' best interests.

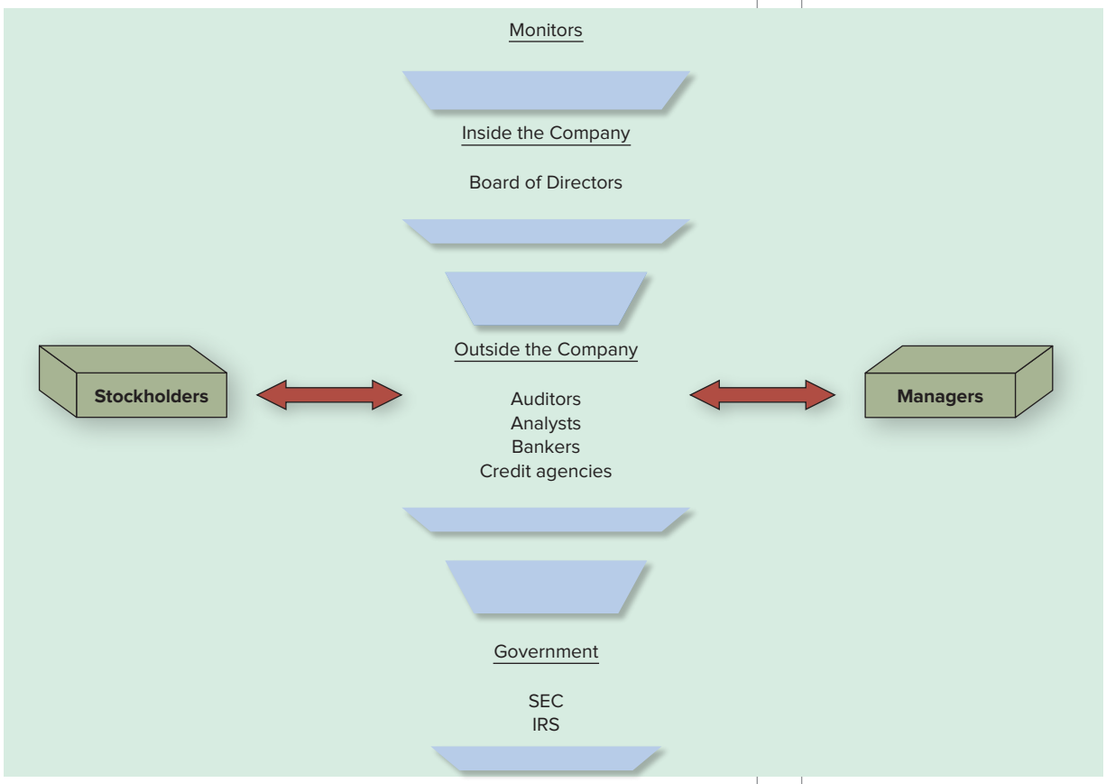
Corporate Governance

We refer to the process of monitoring managers and aligning their incentives with shareholder goals as **corporate governance.** Theoretically, managers work for shareholders. In reality, because shareholders are usually inactive, the firm actually seems to belong to management. Generally speaking, the investing public does not know what goes on at the firm's operational level. Managers handle day-to-day operations, and they know that their work is mostly unknown to investors. This lack of supervision demonstrates the need for monitors. Figure 1.9 shows the people and organizations that help monitor corporate activities.

The monitors inside a public firm are the **board of directors,** who are appointed to represent shareholders' interests. The board hires the CEO, evaluates management, and can also design compensation contracts to tie management's salaries to firm performance.

The monitors outside the firm include auditors, analysts, investment banks, and credit rating agencies. **Auditors** examine the firm's accounting systems and comment on whether

FIGURE 1.9 Corporate Governance Monitors



Corporate governance balances the needs of stockholders and managers. Inside the public firm, the members of the board of directors monitor how the firm is run. Outside the firm, auditors, analysts, investment banks, and credit rating agencies act as monitors.

EXAMPLE 1-2

For interactive versions of this example, log in to Connect or go to mhhe.com/CornettM5e.

Executive Compensation LG1-6

In 2017, the median CEO compensation of the largest 100 firms in terms of sales was $15.7 million—a 5 percent increase over the previous year. As per a U.S. Securities and Exchange Commission rule that went into effect in 2017 requiring publicly traded companies to release a ratio of what their CEOs make in comparison to their median paid worker, the median ratio of CEO-to-median-worker-salary for these 100 largest companies was 235-to-1. Every year, the controversy over CEO pay arises again. What arguments could be made for each side?

SOLUTION:

Many people believe that CEOs are paid too much for the services they provide. They receive compensation that is far higher than workers' pay within their firms. Over the years, executive compensation has also increased at a faster rate than has the value of the stockholders' wealth. For example, the Economic Policy Institute reports that after adjusting for inflation, CEO pay increased nearly 1,000 percent between 1978 and 2014. As a comparison, the typical worker's inflation adjusted pay increased less than 11 percent during the same period. Each firm's board of directors sets CEO compensation. However, CEOs may have undue influence over director selection, tenure, and committee assignments—even over selecting the compensation advisors. This practice creates an unhealthy conflict of interest.

Others believe that a skilled CEO can positively affect company performance and that, therefore, the firm needs to offer high compensation and a bundle of perquisites to attract the best talent. To overcome agency problems, managers must be given incentives that pay very well when the company performs very well. If CEOs create a substantial amount of shareholder wealth, then who is to say that they are overpaid?

finance at work //: corporate

The Amazing Story of Apple Inc. and Steve Jobs

Steven Jobs and Stephen Wozniak started Apple Computer in 1976 as an equal partnership. Together, they built 50 computers in a garage using money borrowed from family, the proceeds from the sale of a VW bus, and credit from the parts distributor.

Jobs and Wozniak then designed the Apple II computer. But a higher production level to make more than 50 computers required more space and employees. They needed much more capital. They could not get a loan until angel investor Mike Markkula (an Intel executive) became a partner in the firm. He invested $92,000 and his personal guarantee induced a bank to loan Apple $250,000. As production ramped up in 1977, Apple Computer incorporated. Most shares were owned by Jobs, Wozniak, and Markkula, but the principals made some shares available to employees. They also hired an experienced manager (Mike Scott) to be the CEO and run the firm. Note that as the firm expanded, Jobs's ownership level and control got diluted. By 1980, Apple Computer had sold a total of 121,000 computers—against a potential demand of millions more. Apple needed even more capital.

At the end of 1980, Apple became a public corporation and sold $65 million worth of stock to public investors. Steve Jobs, cofounder of Apple, still owned more shares than anyone else (7.5 million), but he owned less than half of the firm. He gave up a great deal of ownership to new investors in exchange for the capital to expand the firm. Unhappy with Mike Scott's leadership, Steve Jobs also became CEO of Apple.

After a couple of years, Apple's board of directors felt that Jobs was not experienced enough to steer the firm through its rapid expansion. They hired John Sculley as CEO in 1983. In 1985, a power struggle ensued for control of the firm, and the board backed Sculley over Jobs. Jobs was forced out of Apple and no longer had a say in business operations, even though he was the largest shareholder and an original cofounder of the firm.

So Steve Jobs bought Pixar in 1986 for $5 million and founded NeXT Computer. Over the next 10 years, Jobs's Pixar produced mega hit movies like *Toy Story, A Bug's Life,* and *Monsters, Inc.* This time, he kept 53 percent ownership of Pixar to ensure keeping full control. In the meantime, Apple Computer began to struggle, with losses of $800 million in 1996 and $1 billion in 1997. To get Steve Jobs back into the firm, Apple bought NeXT for $400 million and hired him as Apple's CEO. Over the next few years, Jobs introduced the iMac, iPod, and iTunes, and Apple became very profitable again! Jobs was given the use of a $90 million Gulfstream jet as a perk. To realign his incentives, he became an Apple owner again via compensation that included options on 10 million shares of stock and 30 million shares of **restricted stock.** Then in 2006, Disney bought Pixar by swapping $7.4 billion worth of Disney stock for Pixar stock. When the deal closed, Steve Jobs became the largest owner of Disney stock (7 percent) and joined Disney's board of directors.

Christopher Kerrigan/McGraw-Hill Education

Wow! What a story of accessing capital, business organizational form, company control, and corporate governance.

Want to know more?

Key Words to Search for Updates: **Steve Jobs, Apple Computer, Pixar**

restricted stock A special type of stock that is not transferable from the current holder to others until specific conditions are satisfied.

financial statements fairly represent the firm's financial position. **Investment analysts** follow a firm, conduct their own evaluations of the company's business activities, and report to the investment community. **Investment banks,** which help firms access capital markets and advise managers about how to interact with those capital markets, also monitor firm performance. **Credit analysts** examine a firm's financial strength for its debt holders. The government also monitors business activities through the Securities and Exchange Commission (SEC) and the Internal Revenue Service (IRS).

The Role of Ethics LG1-7

Ethics must play a strong role in any practice of finance. Finance professionals commonly manage other people's money. For example, corporate managers control the stockholder's firm, bank employees manage deposits, and investment advisors manage people's investment portfolios. These **fiduciary** relationships create tempting opportunities for finance professionals to make decisions that either benefit the client or benefit the advisors themselves. Professional associations (such as for treasurers, bank executives, investment professionals, etc.) place a strong emphasis on ethical behavior and provide ethics training and standards. Nevertheless, as with any profession with millions of practitioners, a few are bound to act unethically.

The agency relationship between corporate managers and stockholders can create ethical dilemmas. Sometimes the corporate governance system has failed to prevent unethical managers from stealing from firms, which ultimately means stealing from shareholders. Governments all over the world have passed laws and regulations meant to ensure compliance with ethical codes of behavior.[7] And if professionals don't act appropriately, governments have set up strong punishments for financial malfeasance. In the end, financial managers must realize that they not only owe their shareholders the very best decisions to further shareholder interests, but they also have a broader obligation to society as a whole.

1.6 • FINANCIAL MARKETS, INTERMEDIARIES, AND THE FIRM LG1-8

Astute readers will note that our emphasis on the role of financial markets and intermediaries grew throughout this chapter. This emphasis is intentional, as we feel that you must understand the role and impact of these institutions on the firm if you are to grasp the context in which professionals make financial management decisions.

We want to emphasize one other important point about these financial institutions (FI). Very astute readers may wonder how, if financial markets are competitive, investment banks and other financial institutions are able to make such impressive profits. Although FIs assist others with transactions involving financial assets in the financial markets, they do so as paid services. Successful execution of those services takes unique assets and expertise. As shown in Figure 1.10, it's the use of those unique assets and expertise that provides financial institutions with their high profit margins.

1.7 • BIG PICTURE ENVIRONMENT LG1-9

The business world is constantly changing. Companies must constantly adapt in order to succeed. These changes and adaptations include the field of finance. For example, when interest rates increase in an economy, then the cost of capital increases for companies. This could make some projects that were worthy of corporate investment become too costly. In other words, changes in interest rates directly lead to changes in the amount of expansion projects taken on by companies. Similarly, changes in currency exchange rates between countries directly impact the attractiveness of expansion into foreign markets. Therefore, while managers often direct most of their focus to their own firms, it is useful to keep an eye on the big picture.

One of the biggest recent factors affecting the business environment in the United States is the Tax Cuts and Jobs Act (TCJA) of 2017. People and companies try to legally minimize their tax bill. So, changes in tax law can lead to different financial decisions than previously made. For example, the new law reduces the amount of debt interest that can be deducted. Therefore, companies are likely to use more equity financing and less debt financing in the future.

time out!

1-6 What unethical activities might managers engage in because of the agency problem?

1-7 Explain how the corporate governance system reduces the agency problem.

investment analyst A person who analyzes a company's business prospects and gives opinions about its future success.

investment banks Banks that help companies and governments raise capital.

credit analyst A person who analyzes a company's ability to repay its debts and reports the findings as a grade.

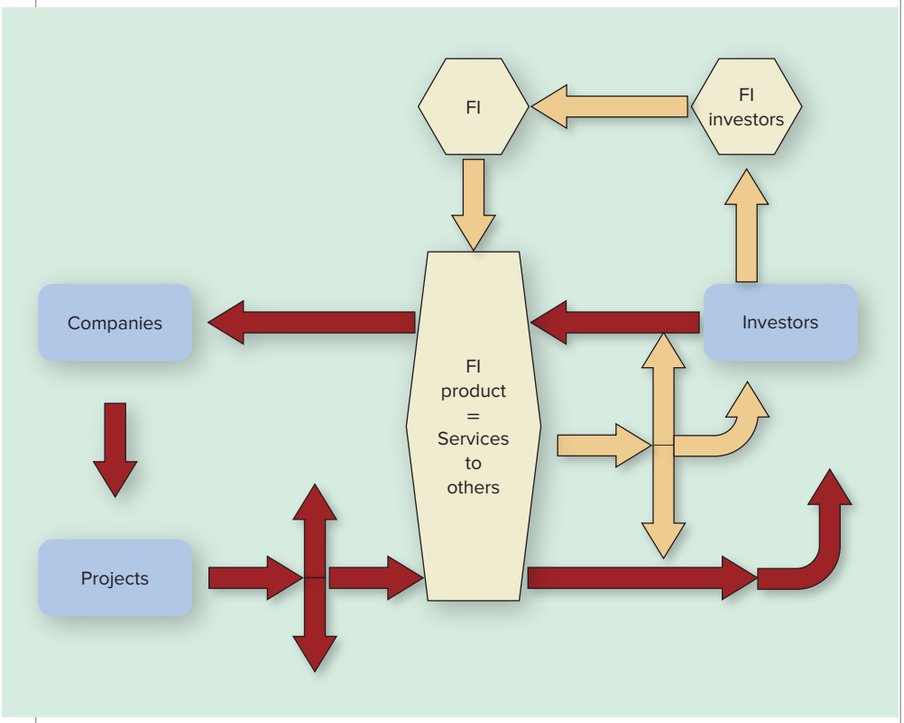
ethics The study of values, morals, and morality.

fiduciary A legal duty between two parties where one party must act in the interest of the other party.

time out!

1-8 What is the role of financial institutions in a capitalist economy?

FIGURE 1.10 Financial Institutions' Cash Flows



The unique services and products that financial institutions provide allow them to make money.

We will examine the specific impact of each of the major tax law changes in more detail later in the text, but, for now, our discussion will merely touch upon the general impact expected on finance decisions.

Reductions in Individual Income Tax Rates

Tables 1.2 and 1.3 show the "break point" brackets for both individual tax filers and for married households have changed, with the net effect that most taxpayers will be subject to lower tax rates.

However, TCJA eliminated or restricted many itemized deductions beginning in 2018, and raised the standard deduction, implying that fewer taxpayers are likely to itemize. The major relevant changes include

- The state and local tax deduction is now capped at $10,000.
- Mortgage interest is still deductible, but, for mortgages taken out after December 14, 2017, only the interest on the first $750,000 of mortgage debt is deductible. This may not be a factor where housing prices are relatively low and mortgages are below this limit. However, a mortgage greater than $750,000 is common in locations with high residential real estate costs. For example, the median home price in San Francisco is $1.5 million.
- Interest on home equity loans will no longer be deductible after 2017.

In general, we expect the net impact of the reduction in individual income tax rates to result in more free cash for expenditures on the part of consumers, more potential savings on the part of investors, and a slight downward pressure on housing sales in high-value markets.

TABLE 1.2 Single Filer Tax Rates

Prior Law		Current Law	
Tax Rate	**Income Range**	**Tax Rate**	**Income Range**
10%	$0–$9,525	10%	$0–$9,525
15%	$9,525–$38,700	12%	$9,525–$38,700
25%	$38,700–$93,700	22%	$38,700–$82,500
28%	$93,700–$195,450	24%	$82,500–$157,500
33%	$195,450–$424,950	32%	$157,500–$200,000
35%	$424,950–$426,700	35%	$200,000–$500,000
39.6%	$426,700+	37%	$500,000+

TABLE 1.3 Married Filing Jointly

Prior Law		Current Law	
Tax Rate	**Income Range**	**Tax Rate**	**Income Range**
10%	$0–$19,050	10%	$0–$19,050
15%	$19,050–$77,400	12%	$19,050–$77,400
25%	$77,400–$156,150	22%	$77,400–$165,000
28%	$156,150–$237,950	24%	$165,000–$315,000
33%	$237,950–$424,950	32%	$315,000–$400,000
35%	$424,950–$480,050	35%	$400,000–$600,000
39.6%	$480,050+	37%	$600,000+

Corporate Tax Rates Reduced

Under previous tax law, corporations paid graduated federal income-tax rates of 15 percent, 25 percent, 34 percent, and 35 percent, while personal service corporations (PSCs) paid a flat 35 percent rate. The TCJA establishes a flat 21 percent corporate rate, and that reduced rate also applies to PSCs.

One effect of the reduced corporate tax rates should be for U.S. corporations to bring profits earned overseas back to the United States. Previously, companies did not want to pay the high U.S. marginal tax rate on these funds, so they left the cash in overseas locations. After TCJA, U.S. companies are more likely to "bring home" these foreign profits. That should spur corporate investment within the United States. Indeed, foreign companies may also find the new U.S. tax rates an attractive environment for investment.

New Deduction for "Pass-Through" Business Income

Under previous tax law, net taxable income from so-called "pass-through business entities" (meaning sole proprietorships, partnerships, LLCs that are treated as sole proprietorships or as partnerships for tax purposes, and S corporations) was simply passed through to owners and taxed at the owner level at standard rates.

TCJA establishes a new deduction based on a noncorporate pass-through entity owner's qualified business income (QBI). This break is available to eligible individuals, estates, and trusts. The deduction generally equals 20 percent of QBI, subject to restrictions that can apply at higher income levels. The QBI deduction is not allowed in calculating the noncorporate owner's adjusted gross income (AGI), but it reduces taxable income. In effect, it is treated the same as an allowable itemized deduction.

We expect the net effect of this deduction to roughly equate the effective tax rate paid by pass-through business entities to that paid by corporations.

Liberalized Asset Expensing and Depreciation Provisions

Under the TCJA, for qualifying property placed in service in tax years beginning after December 31, 2017, the maximum Section 179 deduction is increased to $1 million (up from $510,000).

The first-year bonus depreciation percentage is increased to 100 percent (up from 50 percent). The 100 percent deduction is allowed for both new and used qualifying property. In later years, the first-year bonus depreciation deduction is scheduled to be reduced as follows:

- 80 percent for property placed in service in calendar year 2023.
- 60 percent for property placed in service in calendar year 2024.
- 40 percent for property placed in service in calendar year 2025.
- 20 percent for property placed in service in calendar year 2026.

For new or used passenger vehicles that are placed in service after December 31, 2017, and used over 50 percent for business, the maximum annual depreciation deductions allowed under the TCJA are as follows:

- $10,000 for Year 1.
- $16,000 for Year 2.
- $9,600 for Year 3.
- $5,760 for Year 4 and thereafter until the vehicle is fully depreciated.

Under the old law, these were $11,160 for Year 1 for a new car or $3,160 for a used car, $5,100 for Year 2, $3,050 for Year 3, and $1,875 for Year 4 and thereafter.

We expect the net effect of these liberalized expensing provisions to be an increase in companies' expenditures on depreciable assets.

New Limits on Business Interest Deductions

Subject to some restrictions and exceptions, prior law generally allowed full deductions for interest paid or accrued by a business. Under the TCJA, affected corporate and non-corporate businesses generally cannot deduct interest expense in excess of 30 percent of "adjusted taxable income." For S corporations, partnerships, and LLCs that are treated as partnerships for tax purposes, this limitation is applied at the business level rather than at the owner level.

For tax years beginning in 2018–2021, adjusted taxable income is calculated by adding back allowable deductions for depreciation, amortization, and depletion. After 2021, these amounts are not added back in calculating adjusted taxable income.

Business interest expense that is disallowed under this limitation is treated as business interest arising in the following taxable year. Amounts that cannot be deducted in the current year can generally be carried forward indefinitely.

Overall, we expect this change to effectively limit the amount of debt financing in many industries.

Stricter Rules for Deducting Losses

For business net operating losses (NOLs) that arise in tax years ending after December 31, 2017, the maximum amount of taxable income that can be offset with NOL deductions

is generally reduced from 100 percent to 80 percent. In addition, NOLs incurred in those years can no longer be carried back to an earlier tax year (except for certain farming losses). Affected NOLs can be carried forward indefinitely.

Since the net effect of these changes will be to effectively delay when NOLs can be used to shelter income from taxes, we expect firms to be even more motivated to avoid having "paper losses."

Reduced or Eliminated Deductions for Business Entertainment and Some Employee Fringe Benefits

Under prior law, taxpayers could generally deduct 50 percent of expenses for business-related meals and entertainment. Meals provided to an employee for the convenience of the employer on the employer's business premises were 100 percent deductible by the employer and tax-free to the recipient employee. Various other employer-provided fringe benefits were also deductible by the employer and tax-free to the recipient employee.

Under the TCJA, deductions for business-related entertainment expenses are completely disallowed. However, meal expenses incurred while traveling on business are still 50 percent deductible.

The TCJA also disallows employer deductions for the cost of providing commuting transportation to an employee (such as hiring a car service), unless the transportation is necessary for the employee's safety. TCJA also eliminates employer deductions for the cost of providing qualified employee transportation fringe benefits (e.g., parking, mass transit passes, and van pooling), but those benefits are still tax-free to recipient employees.

The net effect of all these changes will obviously be to reduce employers' incentives to provide business-related entertainment or to subsidize employee commuting expenses.

Change to R&D Expense Deduction

Specified R&D expenses must be capitalized and amortized over five years, or 15 years if the R&D is conducted outside the United States, instead of being deducted as under current tax law.

We expect the net effect of this change will be to slightly reduce the amounts spent on R&D by U.S. businesses.

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Your Turn...

Questions

1. Describe the type of people who use the financial markets. *(LG1-1)*
2. What is the purpose of financial management? Describe the kinds of activities that financial management involves. *(LG1-1)*
3. What is the difference in perspective between finance and accounting? *(LG1-2)*
4. What personal decisions can you think of that will benefit from your learning finance? *(LG1-3)*
5. What are the three basic forms of business ownership? What are the advantages and disadvantages to each? *(LG1-4)*
6. Among the three basic forms of business ownership, describe the ability of each form to access capital. *(LG1-4)*
7. Explain how the founder of a business can eventually lose control of the firm. How can the founder ensure this will not happen? *(LG1-4)*
8. Explain the shareholder wealth maximization goal of the firm and how it can be measured. Make an argument for why it is a better goal than maximizing profit. *(LG1-5)*
9. Name and describe as many corporate stakeholders as you can. *(LG1-5)*
10. What conflicts of interest can arise between managers and stockholders? *(LG1-6)*
11. Figure 1.9 shows firm monitors. In your opinion, which group is in the best position to monitor the firm? Explain. Which group has the potential to be the weakest monitor? Explain. *(LG1-6)*

12. In recent years, governments all over the world have passed laws that increased the penalties for executives' crimes. Do you think this will deter unethical corporate managers? Explain. *(LG1-6)*
13. Every year, the media report on the vast amounts of money (sometimes hundreds of millions of dollars) that some CEOs earn from the companies they manage. Are these CEOs worth it? Give examples. *(LG1-6)*
14. Why is ethical behavior so important in the field of finance? *(LG1-7)*
15. Does the goal of shareholder wealth maximization conflict with behaving ethically? Explain. *(LG1-7)*
16. Describe how financial institutions and markets facilitate the expansion of a company's business. *(LG1-8)*

Notes

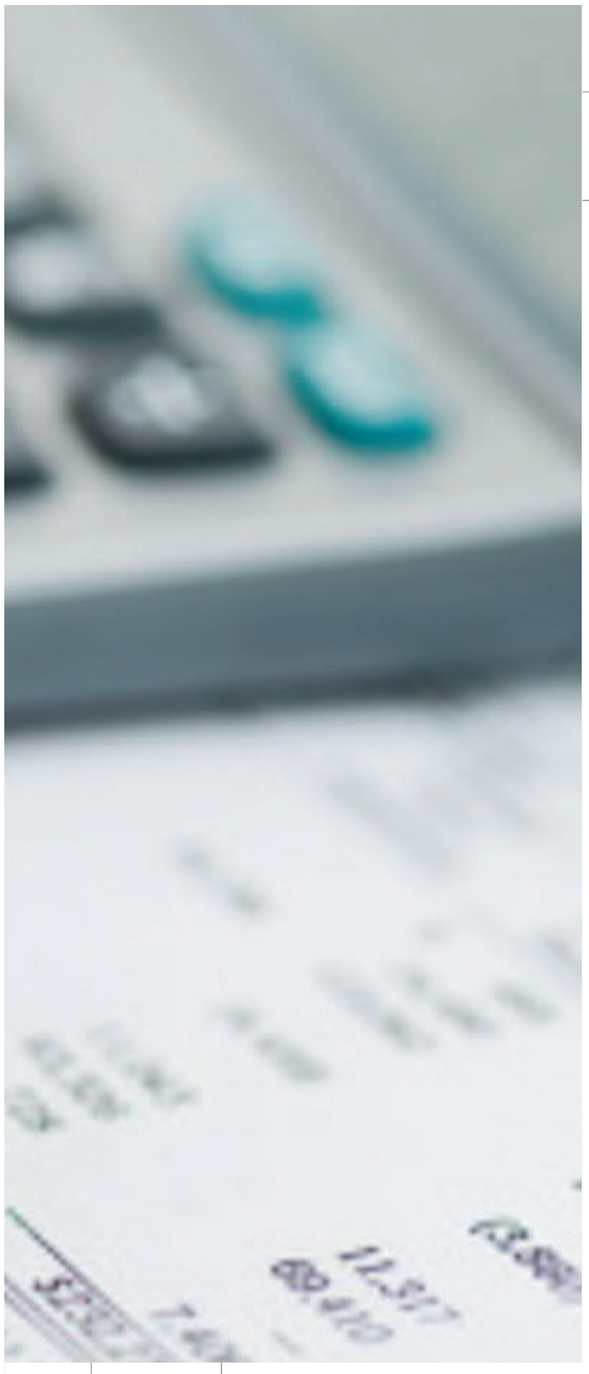
CHAPTER 1

1. According to the Small Business Administration, over 70 percent of all businesses in the U.S. were sole proprietorships.
2. However, if you are the sole member of a domestic limited liability company (LLC, discussed below), you are not a sole proprietor if you elect to treat the LLC as a corporation.
3. For example, current federal regulations limit the number of shareholders in an S corporation to no more than 100.
4. See Book IV of his *The Wealth of Nations.*
5. See, for example, Raghuram Rajan and Julie Wulf, "Are Perks Really Managerial Excess?" *Journal of Financial Economics* 79(1), 2006, 1–33.
6. In case you are wondering why the stockholders—who would be the eventual recipients of such "extra" free cash flow—wouldn't then have increased incentives to monitor, they would. But, considering that the typical bond sells for $1,000 or more while the typical share of stock sells for much less, and taking into account that bond ownership tends to be much more concentrated than stock ownership in many firms, ask yourself whether bondholders or stockholders are more likely to enjoy economies of scale in monitoring.
7. The Sarbanes-Oxley Act of 2002 was passed in response to a number of recent major corporate accounting scandals including those affecting Enron, Tyco International, and WorldCom. The goal of the act was to make the accounting and auditing procedures more transparent and trustworthy.

Tom Grill/Getty Images

Corporate managers must issue many reports to the public. Most stockholders, analysts, government entities, and other interested parties pay particular attention to annual reports. An annual report provides four basic *financial statements:* the balance sheet, the income statement, the statement of cash flows, and the statement of retained earnings. A **financial statement** provides an accounting-based picture of a firm's financial condition.

Whereas accountants use reports to present a picture of what happened in the past, finance professionals use financial statements to draw inferences about the future. The four statements function to provide key information to managers, who make financial decisions, and to investors, who will accept or reject possible future investments in the firm. When you



chapter two

part two

reviewing financial statements

encountered these four financial statements in accounting classes, you learned how they function to place the right information in the right places. In this chapter, you will see how understanding these statements, which are the "right places" for crucial information, creates a solid base for your understanding of decision-making processes in managerial finance.

Financial statements of publicly traded firms can be found in a number of places. For example, all quarterly and annual financial statements can be found at a firm's website (often under a section titled "investor relations"). Financial statements of publicly traded companies are reported to the Securities and Exchange Commission (SEC), who makes them publicly available at their website (www.sec.gov); annual reports are listed under the term 10-K, and quarterly financial statements are listed as 10-Qs. Finally, a number of websites exist (e.g., finance.yahoo.com) where one can view and download financial statements of publicly traded companies. Nonpublic firms are not required to submit financial statements to the SEC. Thus, it can be quite difficult to find detailed financial

continued on p. 30

LEARNING GOALS

After reading this chapter, you should be able to:

LG2-1 Recall the major financial statements that firms must prepare and provide.

LG2-2 Differentiate between book (or accounting) value and market value.

LG2-3 Explain how taxes influence corporate managers' and investors' decisions.

LG2-4 Differentiate between accounting income and cash flows.

LG2-5 Demonstrate how to use a firm's financial statements to calculate its cash flows.

LG2-6 Observe cautions that should be taken when examining financial statements.

*See Appendix 2A: Various Formats for Financial Statements in Connect or online at mhhe.com/CornettM5e.

viewpoints

business APPLICATION

The managers of DPH Tree Farm, Inc., believe the firm could double its sales if it had additional factory space and acreage. If DPH purchased the factory space and acreage in 2022, these new assets would cost $27 million to build and would require an additional $1 million in cash, $5 million in accounts receivable, $6 million in inventory, and $4 million in accounts payable. In addition to accounts payable, DPH Tree Farm would finance the new assets with the sale of a combination of long-term debt (40 percent of the total) and common stock (60 percent of the total). Assuming all else stays constant, what will these changes do to DPH Tree Farm's 2022 balance sheet assets, liabilities, and equity? (See 2021 balance sheet in Table 2.1.) **(See the solution at the end of the chapter.)**

financial statement Statement that provides an accounting-based picture of a firm's financial position.

balance sheet The financial statement that reports a firm's assets, liabilities, and equity at a particular point in time.

continued from p. 29

information about these firms. This is one reason why some large firms (Cargill, Aldi, State Farm) hesitate to become publicly traded; they prefer to keep their financial statement information private.

It should also be noted that this chapter presents a basic set of financial statements; enough so that, from a financial manager's viewpoint, we can identify the basic categories on each statement and relationships across statements. Individual firms' financial statements may look different from those presented in the chapter, depending on the level of detail and accounting methods used. Further, financial statements may be presented in various formats, e.g., in a PDF file or in an Excel spreadsheet. Appendix 2A to the chapter (available online in Connect) presents 2018 financial statements for Colgate-Palmolive Company as listed in its Annual Report, in its 10-K statement, and in an Excel spreadsheet. While the numbers are the same in all formats, the presentation of the numbers can vary greatly.

This chapter examines each statement to clarify its major features and uses. We highlight differences between the accounting-based (book) value of a firm (reflected in these statements) and the true market value of a firm, which we will come to understand more fully. We also make a clear distinction between accounting-based income and actual cash flows, a topic further explored in Chapter 3, where we see how important cash flows are to the study of finance.

We also open a discussion in this chapter about how firms choose to represent their earnings. We'll see that managers have substantial discretion in preparing their firms' financial statements, depending on strategic plans for the organization's future. This is worth looking into as we keep the discipline of finance grounded in a real-world context. Finally, leading into Chapter 3, we discuss some cautions to bear in mind when reviewing and analyzing financial statements.

2.1 • BALANCE SHEET LG2-1

The **balance sheet** reports a firm's assets, liabilities, and equity at a particular point in time. It is a picture of the assets the firm owns and who has claims on these assets as of a given date, for example, December 31, 2021. A firm's assets must equal (balance) the liabilities and equity used to purchase the assets (hence the term *balance sheet*):

$$\text{Assets} = \text{Liabilities} + \text{Equity} \tag{2-1}$$

personal APPLICATION

Chris Ryan is looking to invest in DPH Tree Farm, Inc. Chris has the most recent set of financial statements from DPH Tree Farm's annual report but is not sure how to read them or what they mean. What are the four financial statements that Chris should pay most attention to? What information will these key financial statements contain? **(See the solution at the end of the chapter.)**

Thinking of starting your own business? connect

Figure 2.1 illustrates a basic balance sheet and Table 2.1 presents a simple balance sheet for DPH Tree Farm, Inc., as of December 31, 2021 and 2020. The left side of the balance sheet lists assets of the firm and the right side lists liabilities and equity. Both assets and liabilities are listed in descending order of **liquidity,** that is, the time and effort needed to convert the accounts to cash. The most liquid assets—called *current assets* —appear first on the asset side of the balance sheet. The least liquid, called *fixed assets,* appear last. Similarly, current liabilities—those obligations that the firm must pay within a year—appear first on the right side of the balance sheet. Stockholders' equity, which never matures, appears last on the balance sheet.

liquidity The ease with which an asset can be converted into cash.

current assets Assets that will normally convert to cash within one year.

marketable securities Short-term, low-rate investment securities held by the firm for liquidity purposes.

fixed assets Assets with a useful life exceeding one year.

liabilities Funds provided by lenders to the firm.

current liabilities Obligations of the firm that are due within one year.

long-term debt Obligations of the firm that are due in more than one year.

Assets

Figure 2.1 shows that assets fall into two major categories: current assets and fixed assets. **Current assets** will normally convert to cash within one year. They include cash and **marketable securities** (short-term, low-rate investment securities held by the firm for liquidity purposes), accounts receivable, and inventory. **Fixed assets** have a useful life exceeding one year. This class of assets includes physical (tangible) assets, such as net plant and equipment, and other, less tangible, long-term assets, such as patents and trademarks. We find the value of net plant and equipment by taking the difference between gross plant and equipment (or the fixed assets' original value) and the depreciation accumulated against the fixed assets since their purchase.

Liabilities and Stockholders' Equity

Lenders provide funds, which become **liabilities,** to the firm. Liabilities fall into two categories as well: current or long-term. **Current liabilities** constitute the firm's obligations due within one year, including accrued wages and taxes, accounts payable, and notes payable. **Long-term debt** includes long-term loans and bonds with maturities of more than one year.

The difference between total assets and total liabilities of a firm is the stockholders' (or owners') equity. The firm's preferred and common stock owners provide the funds known as **stockholders' equity. Preferred stock** is a hybrid security that has characteristics of both long-term debt and common stock. Preferred stock is similar to common stock in that it represents an ownership interest

FIGURE 2.1 The Basic Balance Sheet

Total Assets	Total Liabilities and Equity
Current assets	Current liabilities
Cash and marketable securities	Accrued wages and taxes
Accounts receivable	Accounts payable
Inventory	Notes payable
Fixed assets	Long-term debt
Gross plant and equipment	Stockholders' equity
Less: Accumulated depreciation	Preferred stock
Net plant and equipment	Common stock and paid-in surplus
Other long-term assets	Retained earnings

stockholders' equity Funds provided by the firm's preferred and common stock owners.

preferred stock A hybrid security that has characteristics of both long-term debt and common stock.

common stock and paid-in surplus The fundamental ownership claim in a public or private company.

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

net working capital The difference between a firm's current assets and current liabilities.

in the issuing firm but, like long-term debt, it pays a fixed periodic (dividend) payment. Preferred stock appears on the balance sheet as the cash proceeds when the firm sells preferred stock in a public offering. **Common stock and paid-in surplus** is the fundamental ownership claim in a public or private company. The proceeds from common stock and paid-in surplus appear as the other component of stockholders' equity. If the firm's managers decide to reinvest cumulative earnings (recorded on the firm's income statement) rather than pay the dividends to stockholders, the balance sheet will record these funds as **retained earnings.**

Managing the Balance Sheet

Managers must monitor a number of issues underlying items reported on their firms' balance sheets. We examine these issues in detail throughout the text. In this chapter, we briefly introduce them. These issues include the

- Accounting method for fixed asset depreciation.
- Level of net working capital.
- Liquidity position of the firm.
- Method for financing the firm's assets—equity or debt.
- Difference between the book value reported on the balance sheet and the true market value of the firm.

Accounting Method for Fixed Asset Depreciation Managers can choose the accounting method they use to record depreciation against their fixed assets. Recall from accounting that *depreciation* is the charge against income that reflects the estimated dollar cost of the firm's fixed assets. The straight-line method and the MACRS (modified accelerated cost recovery system) are two choices. Companies commonly choose MACRS when computing the firm's taxes and the straight-line method when reporting income to the firm's stockholders. The MACRS method accelerates depreciation, which results in higher depreciation expenses and lower taxable income, thus lower taxes, in the early years of a project's life. Regardless of the depreciation method used, over time both the straight-line and MACRS methods result in the same amount of depreciation and therefore tax (cash) outflows. However, because the MACRS method defers the payment of taxes to later periods, firms often favor it over the straight-line method of depreciation.

Since 2001, businesses have had the ability to immediately deduct a percentage of the acquisition cost of qualifying assets as "bonus depreciation." This additional depreciation deduction was allowed to encourage business investment. However, bonus depreciation was a temporary provision; the rate would have been 50 percent in 2017, 40 percent in 2018, and 30 percent in 2019, before phasing out in 2020. The Tax Cuts and Jobs Act of 2017 temporarily modified and extended bonus depreciation, allowing businesses to immediately deduct 100 percent of the cost of eligible property in the year it is placed into service, through 2022. The amount of allowable bonus depreciation will then be phased down over four years: 80 percent will be allowed for property placed in service in 2023, 60 percent in 2024, 40 percent in 2025, and 20 percent in 2026. MACRS, or straight-line depreciation, is applied to any costs that do not qualify for bonus depreciation. We discuss these issues further in Chapter 12.

Net Working Capital We arrive at a **net working capital** figure by taking the difference between a firm's current assets and current liabilities.

$$\text{Net working capital} = \text{Current assets} - \text{Current liabilities} \quad (2\text{-}2)$$

So, clearly, net working capital is positive when the firm has more current assets than current liabilities. Table 2.1 shows the 2021 and 2020 year-end balance sheets for DPH Tree Farm, Inc. At year-end 2021, the firm had $205 million of current assets and $123 million of current liabilities. So the firm's net working capital was $82 million. A firm needs cash and other liquid assets to pay its bills as expenses come due. As described in more detail in

Chapter 14, liability holders monitor net working capital as a measure of a firm's ability to pay its obligations. Positive net working capital values are usually a sign of a healthy firm.

financial leverage The extent to which debt securities are used by a firm.

Liquidity As we noted previously, any firm needs cash and other liquid assets to pay its bills as debts come due. Liquidity actually refers to two dimensions: the ease with which the firm can convert an asset to cash, and the degree to which such a conversion takes place at a fair market value. You can convert any asset to cash quickly if you price the asset low enough. But clearly, you will wish to convert the asset without giving up a great portion of its value. So a highly liquid asset can be sold quickly at its fair market value. An illiquid asset, on the other hand, cannot be sold quickly unless you reduce the price far below fair value.

Current assets, by definition, remain relatively liquid, including cash and assets that will convert to cash within the next year. Inventory is the least liquid of the current assets. Fixed assets, then, remain relatively illiquid. In the normal course of business, the firm would have no plans to liquefy or convert these tangible assets such as buildings and equipment into cash.

Liquidity presents a double-edged sword on a balance sheet. The more liquid assets a firm holds, the less likely the firm will be to experience financial distress. However, liquid assets generate little or no profits for a firm. For example, cash is the most liquid of all assets, but it earns little, if any, for the firm. In contrast, fixed assets are illiquid, but provide the means to generate revenue. Thus, managers must consider the trade-off between the advantages of liquidity on the balance sheet and the disadvantages of having money sitting idle rather than generating profits.

Debt Versus Equity Financing You learned in your high school physics class that levers are very useful and powerful machines—given a long enough lever, you can move almost anything. **Financial leverage** is likewise very powerful. Leverage in the financial sense refers to the extent to which a firm chooses to finance its ventures or assets by issuing debt securities. The more debt a firm issues as a percentage of its total assets, the greater its financial leverage. We discuss in later chapters why financial leverage can greatly magnify the firm's gains and losses for the firm's stockholders.

When a firm issues debt securities—usually bonds—to finance its activities and assets, debt holders usually demand first claim to a fixed amount of the firm's cash flows. Their

TABLE 2.1 Balance Sheet for DPH Tree Farm, Inc.

DPH TREE FARM, INC.
Balance Sheet as of December 31, 2021 and 2020
(in millions of dollars)

	2021	2020		2021	2020
Assets			**Liabilities and Equity**		
Current assets			Current liabilities		
Cash and marketable securities	$ 24	$ 25	Accrued wages and taxes	$ 20	$ 15
Accounts receivable	70	65	Accounts payable	55	50
Inventory	111	100	Notes payable	48	45
Total	$205	$190	Total	$123	$110
Fixed assets			Long-term debt	192	190
Gross plant and equipment	$368	$300	Total debt	315	300
Less: Accumulated depreciation	53	40	Stockholders' equity		
Net plant and equipment	$315	$260	Preferred stock (5 million shares)	$ 5	$ 5
Other long-term assets	50	50	Common stock and paid-in surplus (20 million shares)	40	40
			Retained earnings	210	155
Total	$365	$310	Total	$255	$200
Total assets	$570	$500	Total liabilities and equity	$570	$500

capital structure The amount of debt versus equity financing held on the balance sheet.

book (or historical cost) value The amount the firm paid for the assets.

market value The amount the firm would get if it sold the assets.

claims are fixed because the firm must only pay the interest owed to bondholders and any principal repayments that come due within any given period. Stockholders—who buy equity securities or stocks—claim any cash flows left after debt holders are paid. When a firm does well, financial leverage increases shareholders' rewards, since the share of the firm's profits promised to debt holders is set and predictable.

However, financial leverage also increases risk. Leverage can create the potential for the firm to experience financial distress and even bankruptcy. If the firm has a bad year and cannot make its scheduled debt payments, debt holders can force the firm into bankruptcy. As described in more detail in Chapter 16, managers often walk a fine line as they decide upon the firm's **capital structure**—the amount of debt versus equity financing held on the balance sheet—because it can determine whether the firm stays in business or goes bankrupt.

Book Value Versus Market Value LG2-2 Beginning finance students usually have already taken accounting, so they are familiar with the accounting point of view. For example, a firm's balance sheet shows its **book (or historical cost) value** based on generally accepted accounting principles (GAAP). Under GAAP, assets appear on the balance sheet at what the firm paid for them, regardless of what those assets might be worth today if the firm were to sell them. Inflation and market forces make many assets worth more now than they were worth when the firm bought them. So in many cases, book values differ widely from **market values** for the same assets—the amount that the assets would fetch if the firm actually sold them. For the firm's current assets—those that mature within a year—the book value and market value of any particular asset will remain very close. For example, the balance sheet lists cash and marketable securities at their market value. Similarly, firms acquire accounts receivable and inventory and then convert these short-term assets into cash fairly quickly, so the book value of these assets is generally close to their market value.

The "book value versus market value" issue really arises when we try to determine how much a firm's fixed assets are worth. In this case, book value is often very different from market value. For example, if a firm owns land for 100 years, this asset appears on the balance sheet

EXAMPLE 2-1

For interactive versions of this example, log in to Connect or go to mhhe.com/CornettM5e.

Calculating Book versus Market Value LG2-2

EZ Toy, Inc., lists fixed assets of $25 million on its balance sheet. The firm's fixed assets were recently appraised at $32 million. EZ Toy, Inc.'s, balance sheet also lists current assets at $10 million. Current assets were appraised at $11 million. Current liabilities' book and market values stand at $6 million and the book and market value of the firm's long-term debt is $15 million. Calculate the book and market values of the firm's stockholders' equity. Construct the book value and market value balance sheets for EZ Toy, Inc.

SOLUTION:

Recall the balance sheet identity in equation 2-1: Assets = Liabilities + Equity. Rearranging this equation: Equity = Assets − Liabilities. Thus, the balance sheets would appear as follows:

	Book Value	Market Value		Book Value	Market Value
Assets			**Liabilities and Equity**		
Current assets	$10m	$11m	Current liabilities	$ 6m	$ 6m
Fixed assets	25m	32m	Accrued wages and taxes	15m	15m
			Stockholders' equity	14m	14m
Total	$35m	$43m	Total	$35m	$43m

Similar to Problems 2-17, 2-18, Self-Test Problem 2

The book value and market value of a classic car can be very different.
Sreedhar Yedlapati/Getty Images

at its historical cost (of 100 years ago). Most likely, the firm would reap a much higher price on the land upon its sale than the historical price would indicate.

Again, accounting tools reflect the past: Balance sheet assets are listed at historical cost. Managers would thus see little relation between the total asset value listed on the balance sheet and the current market value of the firm's assets. Similarly, the stockholders' equity listed on the balance sheet generally differs from the true market value of the equity. In this case, the market value may be higher or lower than the value listed on the firm's accounting books. So financial managers and investors often find that balance sheet values are not always the most relevant numbers. The following example illustrates the difference between the book value and the market value of a firm's assets.

income statement Financial statement that reports the total revenues and expenses over a specific period of time.

gross profit Net sales minus cost of goods sold.

EBITDA Earnings before interest, taxes, depreciation, and amortization.

time out!

2-1 What is a balance sheet?

2-2 Which are the most liquid assets and liabilities on a balance sheet?

2.2 • INCOME STATEMENT LG2-1

You will recall that **income statements** show the total revenues that a firm earns and the total expenses the firm incurs to generate those revenues over a specific period of time, for example, the year 2021. Remember that while the balance sheet reports a firm's position at a point in time, the income statement reports performance over a period of time, for example, over the last year. Figure 2.2 illustrates a basic income statement and Table 2.2 shows a simple income statement for DPH Tree Farm, Inc., for the years ended December 31, 2021 and 2020. DPH's revenues (or net sales) appear at the top of the income statement. Net sales are defined as gross sales minus any discounts and/or returns. The income statement then shows various expenses (cost of goods sold [e.g., raw material costs], other operating expenses [e.g., utilities], depreciation, interest, and taxes) subtracted from revenues to arrive at profit or income measures.

The top part of the income statement reports the firm's operating income. First, we subtract the cost of goods sold (the direct costs of producing the firm's product) from net sales to get **gross profit** (so, DPH Tree Farm enjoyed gross profits of $155 million in 2020 and $184 million in 2021). Next, we deduct other operating expenses from gross profits to get earnings before interest, taxes, depreciation, and amortization (**EBITDA**); DPH Tree Farm's EBITDA was $140 million in 2020 and $167 million in 2021. Other operating expenses include marketing and selling expenses as well as general and administrative expenses. Finally, we subtract

FIGURE 2.2 The Basic Income Statement

Net sales	Operating income
Less: Cost of goods sold	
Gross profits	
Less: Other operating expenses	
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	
Less: Depreciation and amortization	
Earnings before interest and taxes (EBIT)	
Less: Interest	Financing and tax considerations
Earnings before taxes (EBT)	
Less: Taxes	
Net income before preferred dividends	
Less: Preferred stock dividends	
Net income available to common stockholders	

EBIT Earnings before interest and taxes.

EBT Earnings before taxes.

net income The bottom line on the income statement.

TABLE 2.2 Income Statement for DPH Tree Farm, Inc.

DPH TREE FARM, INC. Income Statement Balance Sheet as of December 31, 2021 and 2020 (in millions of dollars)		
	2021	**2020**
Net sales (all credit)	$ 315	$ 275
Less: Cost of goods sold	131	120
Gross profits	$ 184	$ 155
Less: Other operating expenses	17	15
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	$ 167	$ 140
Less: Depreciation and amortization	13	12
Earnings before interest and taxes (EBIT)	$ 154	$ 128
Less: Interest	16	18
Earnings before taxes (EBT)	$ 138	$ 110
Less: Taxes	29	23
Net income	$ 109	$ 87
Less: Preferred stock dividends	$ 10	$ 10
Net income available to common stockholders	$ 99	$ 77
Less: Common stock dividends	44	44
Addition to retained earnings	$ 55	$ 33
Per (common) share data:		
Earnings per share (EPS)	$ 4.95	$ 3.85
Dividends per share (DPS)	2.22	2.22
Book value per share (BVPS)	12.50	9.75
Market value (price) per share (MVPS)	17.25	15.60

depreciation and amortization from EBITDA to get operating income or earnings before interest and taxes (**EBIT**)[1] (so DPH Tree Farm's EBIT was $128 million in 2020 and $154 million in 2021). The EBIT figure represents the profit earned from the sale of the product without any financing cost or tax considerations.

The bottom part of the income statement summarizes the firm's financial and tax structure. First, we subtract interest expense (the cost to service the firm's debt) from EBIT to get earnings before taxes (**EBT**). So, as we follow our sample income statement, DPH Tree Farm had EBT of $110 million in 2020 and $138 million in 2021. Of course, firms differ in their financial structures and tax situations. These differences can cause two firms with identical operating income to report differing levels of net income. For example, one firm may finance its assets with only debt, while another finances with only common equity. The company with no debt would have no interest expense. Thus, even though EBIT for the two firms is identical, the firm with all-equity financing and no debt would report higher net income. We subtract taxes from EBT to get the last item on the income statement (the "bottom line"), or **net income.** DPH Tree Farm, Inc., reported net income of $87 million in 2020 and $109 million in 2021.

Below the net income, or bottom line, on the income statement, firms often report additional information summarizing income and firm value. For example, with its $109 million of net income in 2021, DPH Tree Farm, Inc., paid its preferred stockholders cash dividends of $10 million and its common stockholders cash dividends of $44 million, and added the remaining $55 million to retained earnings. Table 2.1 shows that retained earnings on the

balance sheet increased from $155 million in 2020 to $210 million in 2021. Other items reported below the bottom line include:

$$\text{Earnings per share } (EPS) = \frac{\text{Net income available to common stockholders}}{\text{Total shares of common stock outstanding}} \quad (2\text{-}3)$$

$$\text{Dividends per share } (DPS) = \frac{\text{Common stock dividends paid}}{\text{Number of shares of common stock outstanding}} \quad (2\text{-}4)$$

$$\text{Book value per share } (BVPS) = \frac{\text{Common stock + Paid-in surplus + Retained earnings}}{\text{Number of shares of common stock outstanding}} \quad (2\text{-}5)$$

$$\text{Market value per share } (MVPS) = \text{Market price of the firm's common stock} \quad (2\text{-}6)$$

We discuss these items further in Chapter 3.

Debt versus Equity Financing

As mentioned earlier, when a firm issues debt to finance its assets, it gives the debt holders first claim to a fixed amount of its cash flows. Stockholders are entitled to any residual cash flows, or net income. Thus, when a firm alters its capital structure to include more or less debt (and, in turn, less or more equity), it impacts the residual cash flows available for the stockholders, i.e., the numerator of the EPS equation. Further, as the firm alters its capital structure, it will issue more shares of stock when it increases equity to reduce debt, or it will buy back shares of stock when it decreases equity to increase debt, that is, the denominator of the EPS equation. Thus, a change in capital structure will cause a firm's stockholders' EPS to change. The question is: Will the reduction (increase) in financial distress and bankruptcy risk from the reduction (increase) in financial leverage appease the stockholders who have lost (gained) earnings per share, and ultimately, how will the change affect stockholder wealth?

EXAMPLE 2-2

For interactive versions of this example, log in to Connect or go to mhhe.com/CornettM5e.

Impact of Capital Structure on a Firm's EPS LG2-1

Consider a firm with an EBIT of $750,000. The firm finances its assets with $1,600,000 debt (costing 5 percent and all is tax deductible) and 200,000 shares of stock selling at $6.00 per share. To reduce the firm's risk associated with this financial leverage, the firm is considering reducing its debt by $600,000 by selling an additional 100,000 shares of stock. The firm's tax rate is 21 percent. The change in capital structure will have no effect on the operations of the firm. Thus, EBIT will remain at $750,000. Calculate the dilution in the firm's EPS from this change in capital structure.

SOLUTION:

The EPS before and after this change in capital structure is illustrated below:

Change	Before Capital Structure Change		After Capital Structure Change	
EBIT		$750,000		$750,000
Less: Interest	($1,600,000 × 0.05)	80,000	($1,000,000 × 0.05)	50,000
EBT		$670,000		$700,000
Less: Taxes (21%)		140,700		147,000
Net income		$529,300		$553,000
Divided by # of shares		200,000		300,000
EPS		$ 2.65		$ 1.84

The change in capital structure would dilute the stockholders' EPS by $0.81.

Similar to Problems 2-5, 2-6, 2-23, 2-24