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Corporate Finance

THIRTEENTH EDITION

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To Stephen A. Ross and family

Our great friend, colleague, and coauthor Steve Ross passed away unexpectedly on March 3, 2017. Steve's influence on our textbook is seminal, deep, and enduring, and we miss him greatly. On the foundation of Steve's lasting and invaluable contributions, we pledge to continue our efforts to provide the best possible textbook for today—and tomorrow.

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

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Dr. Jordan is coauthor of *Corporate Finance* 13e, *Corporate Finance: Core Principles and Applications* 6e, *Fundamentals of Corporate Finance* 13e, and *Essentials of Corporate Finance* 10e, which collectively are the most widely used business finance textbooks in the world, along with *Fundamentals of Investments: Valuation and Management* 9e, a popular investments text.

Preface

The teaching and the practice of corporate finance are more challenging and exciting than ever before. Among other things, the first two decades of the twenty-first century brought us the global financial crisis of 2008–2009 and the COVID-19 pandemic of 2020–2021. Both shocks led to major corporate restructurings, and we still routinely see announcements in the financial press about takeovers, junk bonds, financial restructuring, initial public offerings, bankruptcies, and derivatives. In addition, there are the new recognitions of "real" options, private equity and venture capital, subprime mortgages, bailouts, and credit spreads. As we have learned, the world's financial markets are more integrated than ever before. Both the theory and practice of corporate finance have been moving ahead with uncommon speed, and our teaching must keep pace.

These developments have placed new burdens on the teaching of corporate finance. On one hand, the changing world of finance makes it more difficult to keep materials up to date. On the other hand, the teacher must distinguish the permanent from the temporary and avoid the temptation to follow fads. Our solution to this problem is to emphasize the modern fundamentals of the theory of finance and make the theory come to life with contemporary examples. Increasingly, many of these examples are outside the United States.

All too often, the beginning student views corporate finance as a collection of unrelated topics that are unified largely because they are bound together between the covers of one book. We want our book to embody and reflect the main principle of finance: Namely, good financial decisions will add value to the firm and to shareholders and bad financial decisions will destroy value. The key to understanding how value is added or destroyed is cash flows. To add value, firms must generate more cash than they use. We hope this simple principle is manifest in all parts of this book.

The Intended Audience of This Book

This book has been written for the introductory courses in corporate finance at the MBA level and for the intermediate courses in many undergraduate programs. Some instructors will find our text appropriate for the introductory course at the undergraduate level as well.

We assume that most students either will have taken, or will be concurrently enrolled in, courses in accounting, statistics, and economics. This exposure will help students understand some of the more difficult material. However, the book is self-contained, and a prior knowledge of these areas is not essential. The only mathematics prerequisite is basic algebra.

New to the 13th Edition

There are five primary areas of change reflected in the 13th edition:

1. *Personal taxes.* Entities other than C corporations still face progressive taxation at the personal tax level. Discussion of marginal versus average tax rates is examined.
2. *COVID-19.* The 2020–2021 COVID-19 pandemic affected corporate operations in numerous ways, including capital budgeting, long-term and short-term financial planning, capital structure, supply chain management, and risk management. We have incorporated discussions around these shocks and their impact on different types of corporations.

3. *Discussion of levered versus unlevered beta.* We have added a more in-depth discussion of levering and unlevering beta, including a discussion of when to unlever beta and when not to do so.
4. *Venture capital.* We added a much updated and expanded discussion of entrepreneurship and venture capital, including the different venture capital funding stages.
5. *Comparables valuation for stocks.* We added an expanded discussion of comparable valuation for stocks, including price ratios for various industries.

With the 13th edition, we've also included coverage of:

- Tax advantages of share repurchases.
- Empirical evidence of behavioral challenges to market efficiency.
- Fintech.
- Updated discussion of executive stock options.
- More detailed discussion of the Chaneg to WACC approach.
- Cross-selling, leveraged recapitalizations, and debt overhang.
- Using forward rates to implement the home currency approach.

In addition, each chapter has been updated and, where relevant, "internationalized." We try to capture the excitement of corporate finance with current examples, chapter vignettes, and openers. Spreadsheet applications are spread throughout.

Finally, perhaps the biggest change for the 13th edition is the addition, for the first time, of a special contributor, Professor Kelly Shue of Yale University. Kelly made a number of suggestions that led to more complete coverage, sharpened exposition, and new insights on a variety of subjects.

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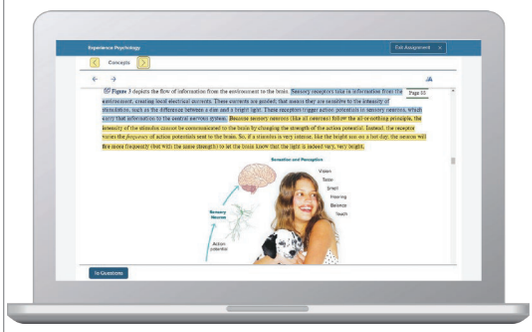

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- Jordan Cunningham, Eastern Washington University

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Pedagogy

In this edition of *Corporate Finance*, we have updated and improved our features to present material in a way that makes it coherent and easy to understand. In addition, *Corporate Finance* is rich in valuable learning tools and support to help students succeed in learning the fundamentals of financial management.

Chapter Opening Vignettes

Each chapter begins with a contemporary vignette that highlights the concepts in the chapter and their relevance to real-world examples.

10

PART III: RISK

Lessons from Market History

Given the headlines in the spring of 2020 about the market crash caused by COVID-related lockdowns, you might be surprised to learn that 2020 was a great year for investors. With the S&P 500 index returning about 18 percent and the Nasdaq Composite index up about 43 percent in 2020, stock market performance overall was very good. For example, investors in bitcoin mining company Bit Digital had to be happy about the 3,688 percent gain in that stock, and investors in biotechnology company Novavax had to feel pretty good following that company's 2,889 percent gain. Of course, not all stocks increased in value during the year. Stock in Occidental Petroleum fell 58 percent, and stock in cruise ship operator Carnival Corp. sunk 57 percent.

These examples show that there were tremendous potential profits to be made during 2020, but there was also the risk of losing money—and lots of it. So what should you, as a stock market investor, expect when you invest your own money? In this chapter, we study more than eight decades of market history to find out.

Please visit us at **rwjcorporatefinance.blogspot.com** for the latest developments in the world of corporate finance.

10.1 Returns

Excel Master coverage online

DOLLAR RETURNS

How did the market do today? Find out at **finance.yahoo.com**.

Suppose the Video Concept Company has several thousand shares of stock outstanding and you are a shareholder. Further suppose that you purchased some of the shares of stock in the company at the beginning of the year; it is now year-end and you want to figure out how well you have done on your investment. The return you get on an investment in stocks, like that in bonds or any other investment, comes in two forms.

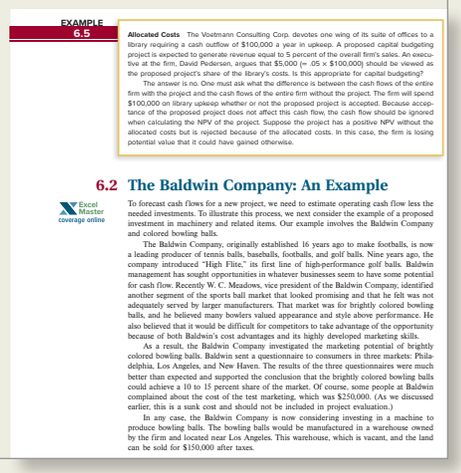
As the owner of stock in the Video Concept Company, you are a part owner of the company. If the company is profitable, it generally could distribute some of its profits to the shareholders. Therefore, as the owner of shares of stock, you could receive some cash, called a *dividend*, during the year. This cash is the *income component* of your return. In addition to the dividends, the other part of your return is the *capital gain*—or, if it is negative, the *capital loss* (negative capital gain)—on the investment. Your *total dollar return* is the sum of your dividend income and capital gain or loss.

Suppose we are considering the cash flows of the investment in Figure 10.1, showing that you purchased 100 shares of stock at the beginning of the year at a price of $37 per share. Your total investment, then, was:

$$C_0 = \$37 \times 100 = \$3,700$$

ExcelMaster Icons

Topics covered in the comprehensive ExcelMaster supplement (in Connect) are indicated by an icon in the margin.



EXAMPLE 6.5

Allocated Costs The Voetmann Consulting Corp. devotes one wing of its suite of offices to a library requiring a cash outflow of $100,000 a year in upkeep. A proposed capital budgeting project is expected to generate revenue equal to 5 percent of the overall firm's sales. An executive at the firm, David Pedersen, argues that $5,000 (= .05 × $100,000) should be viewed as the proposed project's share of the library's costs. Is this appropriate for capital budgeting?

The answer is no. One must ask what the difference is between the cash flows of the entire firm with the project and the cash flows of the entire firm without the project. The firm will spend $100,000 on library upkeep whether or not the proposed project is accepted. Because acceptance of the proposed project does not affect this cash flow, the cash flow should be ignored when calculating the NPV of the project. Suppose the project has a positive NPV without the allocated costs but is rejected because of the allocated costs. In this case, the firm is losing potential value that it could have gained otherwise.

6.2 The Baldwin Company: An Example

Excel Master coverage online

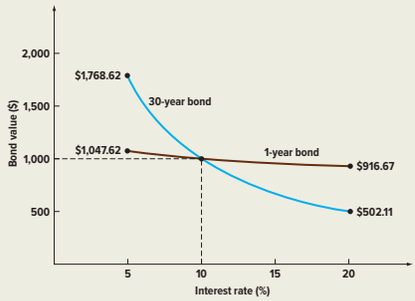
To forecast cash flows for a new project, we need to estimate operating cash flow less the needed investments. To illustrate this process, we next consider the example of a proposed investment in machinery and related items. Our example involves the Baldwin Company and colored bowling balls.

The Baldwin Company, originally established 16 years ago to make footballs, is now a leading producer of tennis balls, baseballs, footballs, and golf balls. Nine years ago, the company introduced "High Flite," its first line of high-performance golf balls. Baldwin management has sought opportunities in whatever businesses seem to have some potential for cash flow. Recently W. C. Meadows, vice president of the Baldwin Company, identified another segment of the sports ball market that looked promising and that he felt was not adequately served by larger manufacturers. That market was for brightly colored bowling balls, and he believed many bowlers valued appearance and style above performance. He also believed that it would be difficult for competitors to take advantage of the opportunity because of both Baldwin's cost advantages and its highly developed marketing skills.

As a result, the Baldwin Company investigated the marketing potential of brightly colored bowling balls. Baldwin sent a questionnaire to consumers in three markets: Philadelphia, Los Angeles, and New Haven. The results of the three questionnaires were much better than expected and supported the conclusion that the brightly colored bowling balls could achieve a 10 to 15 percent share of the market. Of course, some people at Baldwin complained about the cost of the test marketing, which was $250,000. (As we discussed earlier, this is a sunk cost and should not be included in project evaluation.)

In any case, the Baldwin Company is now considering investing in a machine to produce bowling balls. The bowling balls would be manufactured in a warehouse owned by the firm and located near Los Angeles. This warehouse, which is vacant, and the land can be sold for $150,000 after taxes.

Figure 8.2
Interest Rate Risk and Time to Maturity



Value of a Bond with a 10 Percent Coupon Rate for Different Interest Rates and Maturities

	Time to Maturity	
Interest Rate	1 Year	30 Years
5%	$1,047.62	$1,768.62
10	1,000.00	1,000.00
15	956.52	671.70
20	916.67	502.11

tells us that a relatively small change in interest rates will lead to a substantial change in the bond's value. In comparison, the one-year bond's price is relatively insensitive to interest rate changes.

Intuitively, shorter-term bonds have less interest rate sensitivity because the $1,000 face amount is received so quickly. The present value of this amount isn't greatly affected by a small change in interest rates if the amount is received in, say, one year. However, even a small change in the interest rate, once compounded for, say, 30 years, can have a significant effect on present value. As a result, the present value of the face amount will be much more volatile with a longer-term bond.

Figures and Tables

This text makes extensive use of real data and presents them in various figures and tables. Explanations in the narrative, examples, and end-of-chapter problems will refer to many of these exhibits.

Examples

Separate called-out examples are integrated throughout the chapters. Each example illustrates an intuitive or mathematical application in a step-by-step format. There is enough detail in the explanations so students don't have to look elsewhere for additional information.

EXAMPLE 9.5

Calculating the Required Return Pagemaster Enterprises, the company examined in Example 9.4, has 1,000,000 shares of stock outstanding. The stock is selling at $10. What is the required return on the stock?

The payout ratio is the ratio of dividends/earnings. Because Pagemaster's retention ratio is 40 percent, the payout ratio, which is 1 – Retention ratio, is 60 percent. Recall both that Pagemaster reported earnings of $2,000,000 and that the firm's growth rate is 6.4 percent.

Earnings a year from now will be $2,128,000 (= $2,000,000 × 1.064), implying that dividends will be $1,276,800 (= .60 × $2,128,000). Dividends per share will be $1.28 (= $1,276,800/1,000,000). Given that g = .064, we calculate R from Equation 9.9 as follows:

$$.192 = \frac{\$1.28}{\$10.00} + .064$$

In Their Own Words

ROBERT C. HIGGINS ON SUSTAINABLE GROWTH

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

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

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

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

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

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

"In Their Own Words" Boxes

Located throughout the chapters, this unique series consists of articles written by distinguished scholars or practitioners about key topics in the text. Boxes include essays by Edward I. Altman, Robert S. Hansen, Robert C. Higgins, Michael C. Jensen, Merton Miller, and Jay R. Ritter.

Spreadsheet Applications

Now integrated into select chapters, Spreadsheet Applications boxes reintroduce students to Excel, demonstrating how to set up spreadsheets in order to analyze common financial problems—a vital part of every business student's education. (For even more spreadsheet example problems, check out ExcelMaster in Connect.)

SPREADSHEET APPLICATIONS

Using a Spreadsheet for Time Value of Money Calculations

More and more, businesspeople from many different areas (not only finance and accounting) rely on spreadsheets to do all the different types of calculations that come up in the real world. In this section, we will show you how to use a spreadsheet to handle the various time value of money problems we present in this chapter. We will use Microsoft Excel, but the commands are similar for other types of software. We assume you are already familiar with basic spreadsheet operations.

As we have seen, you can solve for any one of the following four potential unknowns: future value, present value, the discount rate, or the number of periods. The following box lists formulas that can be used in Excel to solve for each input in the time value of money equation.

To Find	Enter This Formula
Future value	= FV(rate,nper,pmt,pv)
Present value	= PV(rate,nper,pmt,fv)
Discount rate	= RATE(nper,pmt,pv,fv)
Number of periods	= NPER(rate,pmt,pv,fv)

In these formulas, pv and fv are present value and future value; nper is the number of periods; and rate is the discount, or interest, rate.

Two things are a little tricky here. First, unlike a financial calculator, the spreadsheet requires that the rate be entered as a decimal. Second, as with most financial calculators, you have to put a negative sign on either the present value or the future value to solve for the rate or the number of periods. For the same reason, if you solve for a present value, the answer will have a negative sign unless you input a negative future value. The same is true when you compute a future value.

To illustrate how you might use these formulas, we will go back to an example in the chapter. If you invest $25,000 at 12 percent per year, how long until you have $50,000? You might set up a spreadsheet like this:

	A	B	C	D	E	F	G	H
1								
2	**Using a spreadsheet for time value of money calculations**							
3								
4	If we invest $25,000 at 12 percent, how long until we have $50,000? We need to solve							
5	for the unknown number of periods, so we use the formula NPER(rate,pmt,pv,fv).							
6								
7	Present value (pv):	$25,000						
8	Future value (fv):	$50,000						
9	Rate (rate):	.12						
10								
11	Periods:	**6.1162554**						
12								
13	The formula entered in cell B11 is =NPER(B9,0,-B7,B8); notice that pmt is zero and that pv							
14	has a negative sign on it. Also notice that rate is entered as a decimal, not a percentage.							

This is the stockholders' share in the firm stated in accounting terms. The accounting value of stockholders' equity increases when retained earnings are added. This occurs when the firm retains part of its earnings instead of paying them out as dividends.

The home page for the Financial Accounting Standards Board (FASB) is **www.fasb.org**.

VALUE VERSUS COST

The accounting value of a firm's assets is frequently referred to as the *carrying value* or the *book value* of the assets.[2] Under **generally accepted accounting principles (GAAP)**, audited financial statements of firms in the United States carry assets at cost.[3] The terms *carrying value* and *book value* are misleading and cause many readers of financial statements to believe the firm's assets are recorded at true market values. *Market value* is the price at which willing buyers and sellers would trade the assets. It would be only a coincidence if accounting value and market value were the same. In fact, management's job is to create value for the firm that exceeds its cost.

Many people use the balance sheet, but the information each may wish to extract is different. A banker may look at a balance sheet for evidence of accounting liquidity and working capital, while a supplier also may note the size of accounts payable and the general promptness of payments. Many users of financial statements, including managers and investors, want to know the market value of the firm, not its cost. This information is not found on the balance sheet. In fact, many of the true resources of the firm do not

Explanatory Website Links

These web links are specifically selected to accompany text material and provide students and instructors with a quick reference to additional information on the internet.

25.5 Interest Rate Futures Contracts

In this section, we consider interest rate futures contracts. Our examples deal with futures contracts on Treasury bonds because of their high popularity. We first price Treasury bonds and Treasury bond forward contracts. Differences between futures and forward contracts are explored. Hedging examples are provided next.

PRICING OF TREASURY BONDS

As mentioned earlier in the text, a Treasury bond pays semiannual interest over its life. In addition, the face value of the bond is paid at maturity. Consider a 20-year, 8 percent coupon bond that was issued on March 1. The first payment is to occur in six months–that is, on September 1. The value of the bond can be determined as follows:

Pricing of Treasury Bond

$$P_{TB} = \frac{\$40}{1 + R_1} + \frac{\$40}{(1 + R_2)^2} + \frac{\$40}{(1 + R_3)^3} + \cdots + \frac{\$40}{(1 + R_{39})^{39}} + \frac{\$1{,}040}{(1 + R_{40})^{40}} \quad (25.1)$$

Because an 8 percent coupon bond pays interest of $80 a year, the semiannual coupon is $40. Principal and the semiannual coupon are both paid at maturity. As we mentioned in a previous chapter, the price of the Treasury bond, P_{TB}, is determined by discounting each payment on the bond at the appropriate spot rate. Because the payments are semiannual, each spot rate is expressed in semiannual terms. That is, imagine a horizontal term structure where the effective annual yield is 8 percent for all maturities. Because each spot rate, R, is expressed in semiannual terms, each spot rate is $\sqrt{1.08} - 1 = .0392$, or 3.92 percent. Coupon payments occur every six months, so there are 40 spot rates over the 20-year period.

Numbered Equations

Key equations are numbered and available for download.

The end-of-chapter material reflects and builds upon the concepts learned from the chapter and study features.

Summary and Conclusions

1. Firms hedge to reduce risk. This chapter showed a number of hedging strategies. The Froot, Scharfstein, and Stein model explains why some firms should optimally choose to live with risk rather than hedge all the risk away.
2. A forward contract is an agreement by two parties to sell an item for cash at a later date. The price is set at the time the agreement is signed. However, cash changes hands on the date of delivery. Forward contracts are generally not traded on organized exchanges.
3. Futures contracts are also agreements for future delivery. They have certain advantages, such as liquidity, that forward contracts do not. An unusual feature of futures contracts is the mark-to-the-market convention. If the price of a futures contract falls on a particular day, every buyer of the contract must pay money to the clearinghouse. Every seller of the contract receives money from the clearinghouse. Everything is reversed if the price rises. The mark-to-the-market convention prevents defaults on futures contracts.
4. We divided hedges into two types: short hedges and long hedges. An individual or firm that sells a futures contract to reduce risk is instituting a short hedge. Short hedges are generally appropriate for holders of inventory. An individual or firm that buys a futures contract to reduce risk is instituting a long hedge. Long hedges are typically used by firms with contracts to sell finished goods at a fixed price.
5. An interest rate futures contract employs a bond as the deliverable instrument. Because of their popularity, we worked with Treasury bond futures contracts. We showed that Treasury bond futures contracts can be priced using the same type of net present value analysis that is used to price Treasury bonds themselves.
6. Many firms face interest rate risk. They can reduce this risk by hedging with interest rate futures contracts. As with other commodities, a short hedge involves the sale of a futures contract. Firms that are committed to buying mortgages or other bonds are likely to institute short hedges. A long hedge involves the purchase of a futures contract. Firms that have agreed to sell mortgages or other bonds at a fixed price are likely to institute long hedges.
7. Duration measures the average maturity of all the cash flows of a bond. Bonds with high duration have high price variability. Firms frequently try to match the duration of their assets with the duration of their liabilities.
8. Swaps are agreements to exchange cash flows over time. The first major type is an interest rate swap in which one pattern of coupon payments, say, fixed payments, is exchanged for another, say, coupons that float with LIBOR. The second major type is a currency swap, in which an agreement is struck to swap payments denominated in one currency for payments in another currency over time.

Concept Questions

1. **Hedging Strategies** If a firm is selling futures contracts on lumber as a hedging strategy, what must be true about the firm's exposure to lumber prices?
2. **Hedging Strategies** If a firm is buying call options on pork belly futures as a hedging strategy, what must be true about the firm's exposure to pork belly prices?
3. **Forwards and Futures** What is the difference between a forward contract and a futures contract? Why do you think that futures contracts are much more common? Are there any circumstances under which you might prefer to use forwards instead of futures? Explain.

Summary and Conclusions

The summary provides a quick review of key concepts in the chapter.

Questions and Problems

Because solving problems is so critical to a student's learning, new questions and problems have been added and existing questions and problems have been revised. All problems also have been thoroughly reviewed and checked for accuracy.

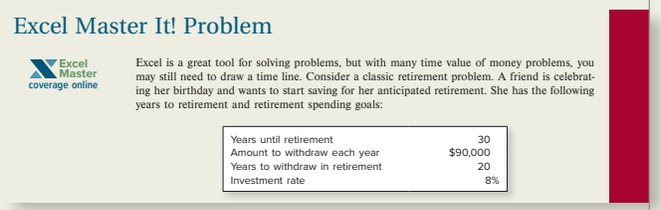
Problems have been grouped according to level of difficulty with the levels listed in the margin: Basic, Intermediate, and Challenge.

Additionally, we have tried to make the problems in the critical "concept" chapters, such as those on value, risk, and capital structure, especially challenging and interesting.

We provide answers to selected problems in Appendix B at the end of the book.

Excel Master It! Problems

Included in the end-of-chapter material are problems directly incorporating Excel, and new tips and techniques taught in the chapter's ExcelMaster supplement.



Excel Master It! Problem

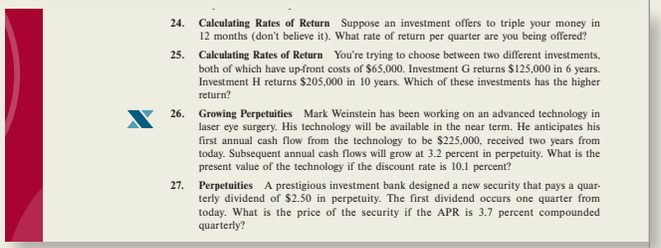
Excel Master coverage online

Excel is a great tool for solving problems, but with many time value of money problems, you may still need to draw a time line. Consider a classic retirement problem. A friend is celebrating her birthday and wants to start saving for her anticipated retirement. She has the following years to retirement and retirement spending goals:

Years until retirement	30
Amount to withdraw each year	$90,000
Years to withdraw in retirement	20
Investment rate	8%

Excel Problems

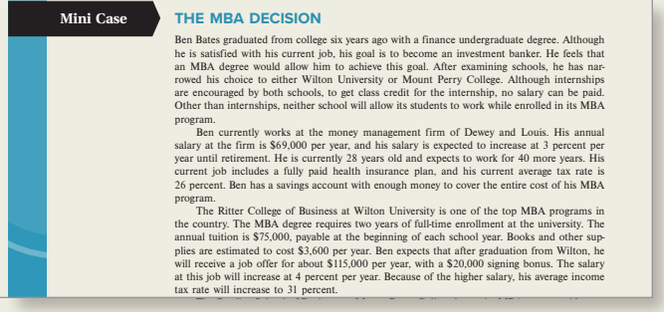
Indicated by the Excel icon in the margin, these problems can be found at the end of almost all chapters. Located in Connect Finance for *Corporate Finance,* 13e, Excel templates have been created for each of these problems, where students can use the data in the problem to work out the solution using Excel skills.



24. **Calculating Rates of Return** Suppose an investment offers to triple your money in 12 months (don't believe it). What rate of return per quarter are you being offered?
25. **Calculating Rates of Return** You're trying to choose between two different investments, both of which have up-front costs of $65,000. Investment G returns $125,000 in 6 years. Investment H returns $205,000 in 10 years. Which of these investments has the higher return?
26. **Growing Perpetuities** Mark Weinstein has been working on an advanced technology in laser eye surgery. His technology will be available in the near term. He anticipates his first annual cash flow from the technology to be $225,000, received two years from today. Subsequent annual cash flows will grow at 3.2 percent in perpetuity. What is the present value of the technology if the discount rate is 10.1 percent?
27. **Perpetuities** A prestigious investment bank designed a new security that pays a quarterly dividend of $2.50 in perpetuity. The first dividend occurs one quarter from today. What is the price of the security if the APR is 3.7 percent compounded quarterly?

End-of-Chapter Cases

Located at the end of almost every chapter, these mini cases focus on common company situations that embody important corporate finance topics. Each case presents a new scenario, data, and a dilemma. Several questions at the end of each case require students to analyze and focus on all of the material they learned in that chapter.



Mini Case

THE MBA DECISION

Ben Bates graduated from college six years ago with a finance undergraduate degree. Although he is satisfied with his current job, his goal is to become an investment banker. He feels that an MBA degree would allow him to achieve this goal. After examining schools, he has narrowed his choice to either Wilton University or Mount Perry College. Although internships are encouraged by both schools, to get class credit for the internship, no salary can be paid. Other than internships, neither school will allow its students to work while enrolled in its MBA program.

Ben currently works at the money management firm of Dewey and Louis. His annual salary at the firm is $69,000 per year, and his salary is expected to increase at 3 percent per year until retirement. He is currently 28 years old and expects to work for 40 more years. His current job includes a fully paid health insurance plan, and his current average tax rate is 26 percent. Ben has a savings account with enough money to cover the entire cost of his MBA program.

The Ritter College of Business at Wilton University is one of the top MBA programs in the country. The MBA degree requires two years of full-time enrollment at the university. The annual tuition is $75,000, payable at the beginning of each school year. Books and other supplies are estimated to cost $3,600 per year. Ben expects that after graduation from Wilton, he will receive a job offer for about $115,000 per year, with a $20,000 signing bonus. The salary at this job will increase at 4 percent per year. Because of the higher salary, his average income tax rate will increase to 31 percent.

Comprehensive Teaching and Learning Package

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Assurance of Learning Ready

Assurance of Learning is an important element of many accreditation standards. *Corporate Finance,* 13e, is designed specifically to support your assurance of learning initiatives. Every test bank question is labeled with level of difficulty, topic area, Bloom's Taxonomy level, and AACSB skill area. Connect, McGraw Hill's online homework solution, and *TestBuilder,* McGraw Hill's easy-to-use test bank software, can search the test bank by these and other categories, providing an engine for targeted Assurance of Learning analysis and assessment.

AACSB Statement

The McGraw Hill Companies is a proud corporate member of AACSB International. Understanding the importance and value of AACSB accreditation, *Corporate Finance,* 13e, has sought to recognize the curricula guidelines detailed in the AACSB standards for business accreditation by connecting selected questions in the test bank to the general knowledge and skill guidelines found in the AACSB standards.

The statements contained in *Corporate Finance,* 13e, are provided only as a guide for the users of this text. The AACSB leaves content coverage and assessment within the purview of individual schools, the mission of the school, and the faculty. While *Corporate Finance,* 13e, and the teaching package make no claim of any specific AACSB qualification or evaluation, we have, within the test bank, labeled selected questions according to the six general knowledge and skills areas.

Remote Proctoring and Browser-Locking Capabilities

New remote proctoring and browser-locking capabilities, hosted by Proctorio within Connect, provide control of the assessment environment by enabling security options and verifying the identity of the student.

Seamlessly integrated within Connect, these services allow instructors to control students' assessment experience by restricting browser activity, recording students' activity, and verifying students are doing their own work.

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- Easily pinpoint the most relevant content through robust filtering options.
- Manipulate the order of questions or scramble questions and/or answers.
- Pin questions to a specific location within a test.
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Tegrity: Lectures 24/7

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Instructor Resources

The Instructor Library in Connect contains all the necessary supplements—Instructor's Manual, Test Bank, Computerized Test Bank, and PowerPoint—all in one place. Go to connect.mheducation.com to find:

- **Instructor's Manual**
  Prepared this edition by Joshua Spizman, Loyola Marymount University
  This is a great place to find new lecture ideas. The IM has three main sections. The first section contains a chapter outline and other lecture materials. The annotated outline for each chapter includes lecture tips, real-world tips, ethics notes, suggested PowerPoint slides, and, when appropriate, a video synopsis.

- **Test Bank**

  Prepared this edition by Heidi Toprac, University of Texas

  Here's a great format for a better testing process. The Test Bank has over 100 questions per chapter that closely link with the text material and provide a variety of question formats (multiple-choice questions/problems and essay questions) and levels of difficulty (basic, intermediate, and challenge) to meet every instructor's testing needs. Problems are detailed enough to make them intuitive for students, and solutions are provided for the instructor.

- **PowerPoint Presentation System**

  Customize our content for your course. This presentation has been thoroughly revised to include more lecture-oriented slides, as well as exhibits and examples both from the book and from outside sources. Applicable slides have web links that take you directly to specific internet sites or a spreadsheet link to show an example in Excel. You also can go to the Notes Page function for more tips on presenting the slides. If you already have PowerPoint installed on your PC, you can edit, print, or rearrange the complete presentation to meet your specific needs.

- **Excel Simulations**

  With 180 Excel simulation questions now included in Connect, RWJJ is the unparalleled leader in offering students the opportunity to practice using the Excel functions they will use throughout their careers in finance.

- **Corporate Finance Videos**

  These brief and engaging conceptual videos (and accompanying questions) will help students to master the building blocks of the Corporate Finance course.

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- **Narrated Presentations**

  Each chapter's slides follow the chapter topics and provide steps and explanations showing how to solve key problems. Because each student learns differently, a quick click on each slide will "talk through" its contents with you!

- **Excel Templates**

  Corresponding to most end-of-chapter problems, each template allows the student to work through the problem using Excel. Each end-of-chapter problem with a template is indicated by an Excel icon in the margin beside it.

- **ExcelMaster**

  Developed by the authors for the RWJ franchise, this valuable and comprehensive supplement provides a tutorial for students in using Excel in finance that is broken out by chapter sections.

Options Available for Purchase and Packaging

FINGAME ONLINE 5.0

ISBN-10: 0-07-721988-0 / ISBN-13: 978-0-07-721988-8

By LeRoy Brooks, John Carroll University.

$15.00 when packaged with this text. In this comprehensive simulation game, students control a hypothetical company over numerous periods of operation. As students make major financial and operating decisions for their company, they will develop and enhance skills in financial management and financial accounting statement analysis.

Acknowledgments

We are lucky to have had skilled and experienced instructors developing the supplement material for this edition. We greatly appreciate the contributions of Joe Smolira, Belmont University, who worked closely with us to develop the Solutions Manual, Excel Master, and to create Excel templates for many of the end-of-chapter problems. Thank you also to Heidi Toprac, University of Texas, for thoroughly updating, revising, and tagging of every problem in the test bank.

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1

PART I: OVERVIEW

Introduction to Corporate Finance

In 2010, Adam Neumann and a business partner opened the first WeWork space in New York's Little Italy. WeWork provided shared office space for businesses that would rent space as needed, sometimes only for a day. By 2019, WeWork operated in more than 111 cities in 29 countries. Revenues had grown to about $3 billion, but the company was still losing money. Early in 2019, the giant tech investor SoftBank made a major bet on WeWork, which valued the company at $47 billion.

Unfortunately, everything was not rosy at WeWork. In the middle of 2019, the company filed to go public in an IPO, but then changed its mind. In late 2019, Softbank agreed to another major investment, but it pulled the deal in 2020. What happened? Among other things, the COVID-19 pandemic hit, calling into question the company's entire business model of shared, face-to-face meeting spaces. But in a surprise to many, in July 2020, Marcelo Claure, who was brought in to revitalize WeWork, announced the company should be profitable by 2021.

Understanding WeWork's story as it progressed from a start-up to a multibillion-dollar enterprise and its subsequent struggles takes us into issues involving the corporate form of organization, corporate goals, and corporate control, all of which we discuss in this chapter.

Please visit us at **rwjcorporatefinance.blogspot.com** for the latest developments in the world of corporate finance.

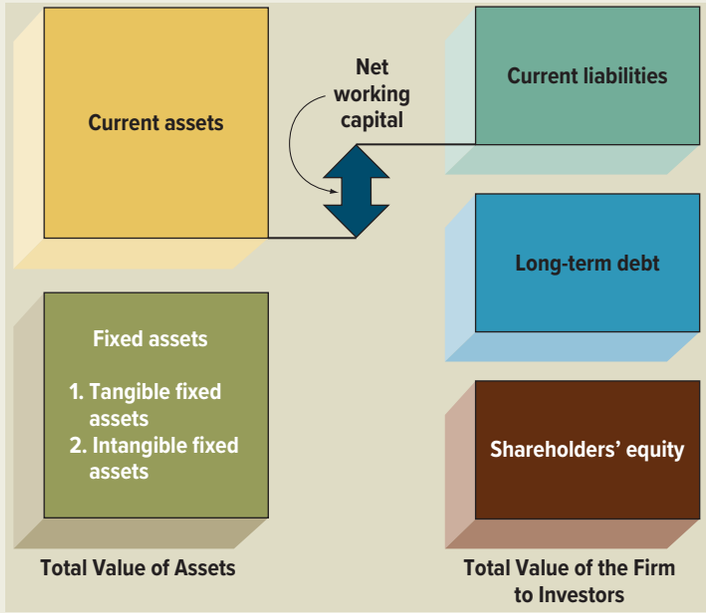
1.1 What Is Corporate Finance?

Suppose you decide to start a firm to make tennis balls. To do this you hire managers to buy raw materials and assemble a workforce that will produce and sell finished tennis balls. In the language of finance, you make an investment in assets such as inventory, machinery, land, and labor. The amount of cash you invest in assets must be matched by an equal amount of cash raised by financing. When you begin to sell tennis balls, your firm will generate cash. This is the basis of value creation. The purpose of the firm is to create value for you, the owner. The value is reflected in the framework of the simple balance sheet model of the firm.

THE BALANCE SHEET MODEL OF THE FIRM

Suppose we take a financial snapshot of the firm and its activities at a single point in time. Figure 1.1 shows a graphic conceptualization of the balance sheet and it will help introduce you to corporate finance.

Figure 1.1
The Balance Sheet Model of the Firm



The assets of the firm are on the left side of the balance sheet. These assets can be thought of as current and fixed. *Fixed assets* are those that will last a long time, like buildings. Some fixed assets are tangible, such as machinery and equipment. Other fixed assets are intangible, including patents and trademarks. The other category of assets, *current assets*, comprises those that have short lives, such as inventory. The tennis balls that your firm has made, but not yet sold, are part of its inventory. Unless you have overproduced, they will leave the firm shortly.

Before a company can invest in an asset, it first must obtain financing, which means that it must raise the money to pay for the investment. The forms of financing are represented on the right side of the balance sheet. A firm will issue (sell) pieces of paper called *debt* (loan agreements) or *equity shares* (stock certificates). Both assets and liabilities can be classified as long-lived or short-lived. A short-term debt is called a *current liability*. Short-term debt represents loans and other obligations that must be repaid within one year. Long-term debt is debt that does not have to be repaid within one year. Shareholders' equity represents the difference between the value of the assets and the debt of the firm. In this sense, it is a residual claim on the firm's assets.

From the balance sheet model of the firm, it is easy to see why finance can be thought of as the study of the following three questions:

1. In what long-lived assets should the firm invest? This question concerns the left side of the balance sheet. Of course, the types and proportions of assets the firm needs tend to be set by the nature of the business. We use the term **capital budgeting** to describe the process of making and managing expenditures on long-lived assets.
2. How can the firm raise cash for required capital expenditures? This question concerns the right side of the balance sheet. The answer to this question involves the firm's **capital structure**, which represents the proportions of the firm's financing from current and long-term debt and equity.
3. How should short-term operating cash flows be managed? This question concerns the upper portion of the balance sheet. There is often a mismatch between the

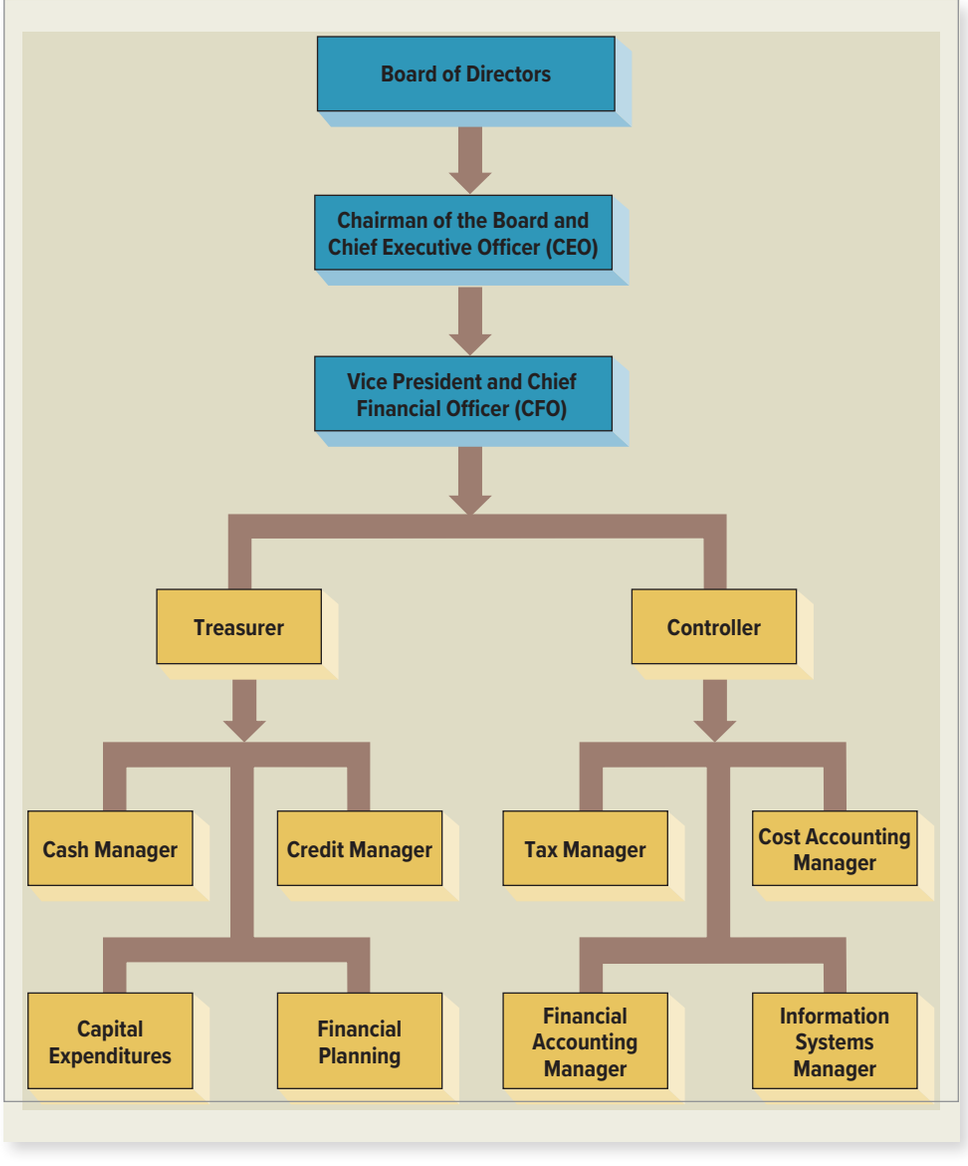
timing of cash inflows and cash outflows during operating activities. Furthermore, the amount and timing of operating cash flows are not known with certainty. Financial managers must attempt to manage the gaps in cash flow. From a balance sheet perspective, short-term management of cash flow is associated with a firm's **net working capital**. Net working capital is defined as current assets minus current liabilities. From a financial perspective, short-term cash flow problems come from the mismatching of cash inflows and outflows. This is the subject of short-term finance.

THE FINANCIAL MANAGER

For current issues facing CFOs, see **www.cfo.com**.

In large firms, the finance activity is usually associated with a top officer of the firm, such as the vice president or chief financial officer, and some lesser officers. Figure 1.2 depicts a general organizational structure emphasizing the finance activity within the firm.

Figure 1.2
Hypothetical Organization Chart



Reporting to the chief financial officer are the treasurer and the controller. The treasurer is responsible for handling cash flows, managing capital expenditure decisions, and making financial plans. The controller handles the accounting function, which includes taxes, cost and financial accounting, and information systems.

1.2 The Corporate Firm

The firm is a way of organizing the economic activity of many individuals. A basic problem of the firm is how to raise cash. The corporate form of business—that is, organizing the firm as a corporation—is the standard method for solving problems encountered in raising large amounts of cash. However, businesses can take other forms. In this section we consider the three basic legal forms of organizing firms, and we see how firms go about the task of raising large amounts of money under each form.

THE SOLE PROPRIETORSHIP

A **sole proprietorship** is a business owned by one person. Suppose you decide to start a business to produce mousetraps. Going into business is simple: You announce to all who will listen, "Today, I am going to build a better mousetrap."

Most large cities require that you obtain a business license. Afterward, you can begin to hire as many people as you need and borrow whatever money you need. At year-end all the profits and the losses will be yours.

Here are some factors that are important in considering a sole proprietorship:

For more about business types, see the "Launch your Business" section at **www.sba.gov**.

1. The sole proprietorship is the cheapest business to form. No formal charter is required, and few government regulations must be satisfied for most industries.
2. A sole proprietorship pays no corporate income taxes. All profits of the business are taxed as individual income.
3. The sole proprietorship has unlimited liability for business debts and obligations. No distinction is made between personal and business assets.
4. The life of the sole proprietorship is limited by the life of the sole proprietor.
5. The sole proprietor is the only owner, so the equity available to the business is limited to her personal wealth.

THE PARTNERSHIP

Any two or more people can get together and form a **partnership**. Partnerships fall into two categories: (1) general partnerships and (2) limited partnerships.

In a *general partnership*, all partners agree to provide some fraction of the work and cash and to share the profits and losses. Each partner is liable for all of the debts of the partnership. A partnership agreement specifies the nature of the arrangement. The partnership agreement may be an oral agreement or a formal document setting forth the understanding.

Limited partnerships permit the liability of some of the partners to be limited to the amount of cash each has contributed to the partnership. Limited partnerships usually require that (1) at least one partner be a general partner and (2) the limited partners do

not participate in managing the business. Here are some things that are important when considering a partnership:

1. Partnerships are usually inexpensive and easy to form. Written documents are required in complicated arrangements. Business licenses and filing fees may be necessary.
2. General partners have unlimited liability for all debts. The liability of limited partners is usually limited to the contribution each has made to the partnership. If one general partner is unable to meet his or her commitment, the shortfall must be made up by the other general partners.
3. The general partnership is terminated when a general partner dies or withdraws (but this is not so for a limited partner). It is difficult for a partnership to transfer ownership without dissolving. Usually all general partners must agree. However, limited partners may sell their interest in a business.
4. It is difficult for a partnership to raise large amounts of cash. Equity contributions are usually limited to a partner's ability and desire to contribute to the partnership. Many companies start life as a proprietorship or partnership, but at some point they choose to convert to corporate form.
5. Income from a partnership is taxed as personal income to the partners.
6. Management control resides with the general partners. Usually a majority vote is required on important matters, such as the amount of profit to be retained in the business.

It is difficult for large business organizations to exist as sole proprietorships or partnerships. The main advantage to a sole proprietorship or partnership is the cost of getting started. Afterward, the disadvantages, which may become severe, are: (1) unlimited liability, (2) limited life of the enterprise, and (3) difficulty of transferring ownership. These three disadvantages lead to (4) difficulty in raising cash.

THE CORPORATION

Of the forms of business enterprises, the **corporation** is by far the most important. It is a distinct legal entity. As such, a corporation can have a name and enjoy many of the legal powers of natural persons. For example, corporations can acquire and exchange property. Corporations can enter contracts and may sue and be sued. For jurisdictional purposes, the corporation is a citizen of its state of incorporation (it cannot vote, however).

Starting a corporation is more complicated than starting a proprietorship or partnership. The incorporators must prepare articles of incorporation and a set of bylaws. The articles of incorporation must include the following:

1. Name of the corporation.
2. Intended life of the corporation (it may be forever).
3. Business purpose.
4. Number of shares of stock that the corporation is authorized to issue, with a statement of limitations and rights of different classes of shares.
5. Nature of the rights granted to shareholders.
6. Number of members of the initial board of directors.

The bylaws are the rules to be used by the corporation to regulate its own existence, and they concern its shareholders, directors, and officers. Bylaws range from the briefest possible statement of rules for the corporation's management to hundreds of pages of text.

In its simplest form, the corporation comprises three sets of distinct interests: the shareholders (the owners), the directors, and the corporate officers (the top management). Traditionally, the shareholders control the corporation's direction, policies, and activities. The shareholders elect a board of directors, who in turn select top management. Members of top management serve as corporate officers and manage the operations of the corporation in the best interest of the shareholders. In closely held corporations with few shareholders, there may be a large overlap among the shareholders, the directors, and the top management. Even in larger corporations, top management usually own shares and often serve on the board of directors.

While overlap between shareholders, directors, and corporate officers is common, the potential separation of ownership from management gives the corporation several advantages over proprietorships and partnerships:

1. Because ownership in a corporation is represented by shares of stock, ownership can be readily transferred to new owners. Because the corporation exists independently of those who own its shares, there is no limit to the transferability of shares as there is in partnerships.
2. The corporation has unlimited life. Because the corporation is separate from its owners, the death or withdrawal of an owner does not affect the corporation's legal existence. The corporation can continue after the original owners have withdrawn.
3. The shareholders' liability is limited to the amount invested in the ownership shares. If a shareholder purchased $1,000 in shares of a corporation, the potential loss would be $1,000. In a partnership, a general partner with a $1,000 contribution could lose the $1,000 plus any other indebtedness of the partnership.

Limited liability, ease of ownership transfer, and perpetual succession are the major advantages of the corporate form of business organization. These give the corporation an enhanced ability to raise cash.

There is one great disadvantage to incorporation. The federal government taxes corporate income (the states do as well). When corporate income is paid out to investors through a dividend, shareholders have to pay personal income tax on the dividend income. This is double taxation for shareholders when compared to taxation on sole proprietorships and partnerships. Table 1.1 summarizes our discussion of partnerships and corporations.

Today all 50 states have enacted laws allowing for the creation of a relatively new form of business organization, the limited liability company (LLC). The goal of this entity is to operate and be taxed like a partnership but retain limited liability for owners, so an LLC is essentially a hybrid of partnership and corporation. Although states have differing definitions for LLCs, the more important scorekeeper is the Internal Revenue Service (IRS). The IRS will consider an LLC a corporation, thereby subjecting it to double taxation, unless it meets certain specific criteria. In essence, an LLC cannot be too corporation-like, or it will be treated as one by the IRS. LLCs have become common. For example, Goldman, Sachs and Co., one of Wall Street's last remaining partnerships, decided to convert from a private partnership to an LLC (it later "went public," becoming a publicly held corporation). Large accounting firms and law firms have largely converted to LLCs.

Table 1.1 A Comparison of Corporations and Partnerships

	Corporation	Partnership
Liquidity and marketability	Shares can be exchanged without termination of the corporation. Common stock can be listed on a stock exchange.	Units are subject to substantial restrictions on transferability. There is usually no established trading market for partnership units.
Voting rights	Usually each share of common stock entitles the holder to one vote per share on matters requiring a vote and on the election of the directors. Directors determine top management.	There are some voting rights by limited partners. However, general partners have exclusive control and management of operations.
Taxation	Corporations have double taxation: Corporate income is taxable, and dividends to shareholders are also taxable.	Partnerships are not taxable. Partners pay personal taxes on partnership profits.
Reinvestment and dividend payout	Corporations have broad latitude on dividend payout decisions.	Partnerships are generally prohibited from reinvesting partnership profits. All profits are distributed to partners.
Liability	Shareholders are not personally liable for obligations of the corporation.	Limited partners are not liable for obligations of partnerships. General partners may have unlimited liability.
Continuity of existence	Corporations may have perpetual lives.	Partnerships have limited lives.

A CORPORATION BY ANOTHER NAME . . .

The corporate form of organization has many variations around the world. The exact laws and regulations differ from country to country, of course, but the essential features of public ownership and limited liability remain. These firms are often called *joint stock companies*, *public limited companies*, or *limited liability companies*, depending on the specific nature of the firm and the country of origin.

Table 1.2 gives the names of a few well-known international corporations, their countries of origin, and a translation of the abbreviation that follows each company name.

Table 1.2 International Corporations

		Type of Company	
Company	Country of Origin	In Original Language	Interpretation
Bayerische Motoren Werke (BMW) AG	Germany	Aktiengesellschaft	Corporation
Red Bull GmbH	Austria	Gesellschaft mit beschränkter Haftung	Limited liability company
Rolls-Royce PLC	United Kingdom	Public Limited Company	Public limited company
Shell UK Ltd.	United Kingdom	Limited	Corporation
Unilever NV	Netherlands	Naamloze Vennootschap	Joint stock company
Fiat SpA	Italy	Società per Azioni	Joint stock company
Volvo AB	Sweden	Aktiebolag	Joint stock company
Peugeot SA	France	Société Anonyme	Joint stock company

1.3 The Importance of Cash Flows

The most important job of a financial manager is to create value from the firm's capital budgeting, financing, and net working capital activities. How do financial managers create value? The answer is that the firm should:

1. Try to buy assets that generate more cash than they cost.
2. Sell bonds, stocks, and other financial instruments that raise more cash than they cost.

The firm must create more cash flow than it uses. The cash flows paid to bondholders and stockholders of the firm should be greater than the cash flows put into the firm by the bondholders and stockholders.

The interplay of the firm's activities with the financial markets is illustrated in Figure 1.3. The arrows in Figure 1.3 trace cash flow from the firm to the financial markets and back again. Suppose we begin with the firm's financing activities. To raise money, the firm sells debt and equity shares to investors in the financial markets. This results in cash flows from the financial markets to the firm (A). This cash is invested in the investment activities (assets) of the firm (B) by the firm's management. The cash generated by the firm (C) is paid to shareholders and bondholders (F). The shareholders receive cash in the form of dividends; the bondholders who lent funds to the firm receive interest and, when the initial loan is repaid, principal. Not all of the firm's cash is paid out. Some is retained (E), and some is paid to the government as taxes (D).

Over time, if the cash paid to shareholders and bondholders (F) is greater than the cash raised in the financial markets (A), value will be created.

IDENTIFICATION OF CASH FLOWS

Unfortunately, it is sometimes not easy to directly observe cash flows generated by the firm. Much of the information we obtain is in the form of accounting statements, and much of the work of financial analysis is to extract cash flow information from these statements. The following example illustrates how this is done.

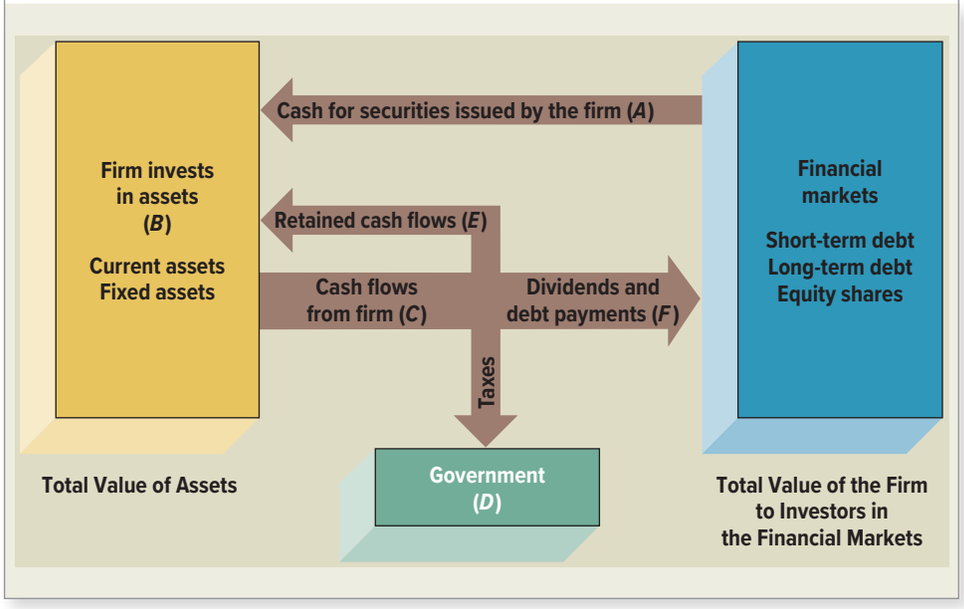


Figure 1.3 Cash Flows between the Firm and the Financial Markets

EXAMPLE 1.1

Accounting Profit versus Cash Flows The Midland Company refines and trades gold. At the end of the year, it sold 2,500 ounces of gold for $1 million. The company had acquired the gold for $900,000 at the beginning of the year. The company paid cash for the gold when it was purchased. Unfortunately, it has yet to collect from the customer to whom the gold was sold. The following is a standard accounting of Midland's financial circumstances at year-end.

The Midland Company
Accounting View Income Statement
Year Ended December 31

Sales	$1,000,000
Costs	900,000
Profit	$ 100,000

By generally accepted accounting principles (GAAP), the sale is recorded even though the customer has yet to pay. It is assumed that the customer will pay soon. From the accounting perspective, Midland seems to be profitable. The corporate finance perspective focuses on cash flows, as you can see in the following example.

The Midland Company
Financial View Income Statement
Year Ended December 31

Cash inflow	$ 0
Cash outflow	900,000
	−$900,000

The focus of corporate finance is on whether cash flows are being created by the gold trading operations of Midland. Value creation depends on cash flows. For Midland, value creation depends on whether and when it actually receives $1 million.

TIMING OF CASH FLOWS

The value of an investment made by a firm depends on the timing of cash flows. One of the most important principles of finance is that individuals prefer to receive cash flows earlier rather than later. One dollar received today is worth more than one dollar received next year.

EXAMPLE 1.2

Cash Flow Timing The Midland Company is attempting to choose between two new products. Both products will provide additional cash flows over a four-year period and will initially cost $10,000. The cash flows from the products are as follows:

Year	New Product A	New Product B
1	$ 0	$ 4,000
2	0	4,000
3	0	4,000
4	20,000	4,000
Total	$20,000	$16,000

(continued)

At first, it appears that Product A would be best. However, the cash flows from Product B come earlier than those of A. Without more information, we cannot decide which set of cash flows would create the most value for the bondholders and shareholders. It depends on whether the value of getting cash from B up front outweighs the extra total cash from A.

RISK OF CASH FLOWS

The firm must consider risk. The amount and timing of cash flows are not usually known with certainty. Most investors have an aversion to risk.

EXAMPLE 1.3

Risk The Midland Company is considering expanding operations overseas. It is evaluating Europe and Japan as possible sites. Europe is considered to be relatively safe, whereas operating in Japan is seen as very risky. In both cases, the company would close down operations after one year.

After doing a complete financial analysis, Midland has come up with the following cash flows of the alternative plans for expansion under three scenarios—pessimistic, most likely, and optimistic.

	Pessimistic	Most Likely	Optimistic
Europe	$75,000	$100,000	$125,000
Japan	0	150,000	200,000

If we ignore the pessimistic scenario, then Japan is the better alternative. When we take the pessimistic scenario into account, the choice is unclear. Japan is riskier because it may deliver zero cash flows under the pessimistic scenario. What is risk and how can it be defined? We must try to answer this important question. Corporate finance cannot avoid coping with risky alternatives and much of our book is devoted to developing methods for evaluating risky opportunities.

1.4 The Goal of Financial Management

Assuming that we restrict our discussion to for-profit businesses, the goal of financial management is to make money or add value for the owners. This goal is a little vague, of course, so we examine some different ways of formulating it to come up with a more precise definition. Such a definition is important because it leads to an objective basis for making and evaluating financial decisions.

POSSIBLE GOALS

If we were to consider possible financial goals, we might come up with some ideas like the following:

- Survive.
- Avoid financial distress and bankruptcy.
- Beat the competition.
- Maximize sales or market share.

- Minimize costs.
- Maximize profits.
- Maintain steady earnings growth.

These are only a few of the goals we could list. Furthermore, each of these possibilities presents problems as a goal for the financial manager.

For example, it's easy to increase market share or unit sales: All we have to do is lower our prices or relax our credit terms. Similarly, we can always cut costs by doing away with things such as research and development. We can avoid bankruptcy by never borrowing any money or never taking any risks, and so on. It's unclear whether any of these actions are in the stockholders' best interests.

Profit maximization would probably be the most commonly cited goal, but even this is not a precise objective. Do we mean profits this year? If so, then we should note that actions such as deferring maintenance, letting inventories run down, and taking other short-run, cost-cutting measures will tend to increase profits now, but these activities aren't necessarily desirable.

The goal of maximizing profits may refer to some sort of "long-run" or "average" profits, but it's still unclear exactly what this means. First, do we mean something like accounting net income or earnings per share? As we will see in more detail in the next chapter, these accounting numbers may have little to do with what is good or bad for the firm. We are actually more interested in cash flows. Second, what do we mean by the long run? As a famous economist once remarked, in the long run, we're all dead! More to the point, this goal doesn't tell us what the appropriate trade-off is between current and future profits.

The goals we've listed here are all different, but they tend to fall into two classes. The first of these relates to profitability. The goals involving sales, market share, and cost control all relate, at least potentially, to different ways of earning or increasing profits. The goals in the second group, involving bankruptcy avoidance, stability, and safety, relate in some way to controlling risk. Unfortunately, these two types of goals are somewhat contradictory. The pursuit of profit normally involves some element of risk, so it isn't really possible to maximize both safety and profit. What we need is a goal that encompasses both factors.

THE GOAL OF THE FINANCIAL MANAGER

The financial manager in a corporation makes decisions for the stockholders of the firm. So, instead of listing possible goals for the financial manager, we really need to answer a more fundamental question: From the stockholders' point of view, what is a good financial management decision?

If we assume that stockholders buy stock because they seek to gain financially, then the answer is obvious: Good decisions increase the value of the stock, and poor decisions decrease the value of the stock.

From our observations, it follows that the financial manager acts in the shareholders' best interests by making decisions that increase the value of the stock. The appropriate goal for the financial manager can be stated quite easily:

The goal of financial management is to maximize the current value of the existing stock.

The goal of maximizing the value of the stock avoids the problems associated with the different goals we listed earlier. There is no ambiguity in the criterion. There is no short-run versus long-run issue or safe versus risky issue. We explicitly mean that our goal is to maximize the *current* stock value.

If this goal seems a little strong or one-dimensional to you, keep in mind that the current stock value reflects the total value of owning a piece of the firm. Stockholders are entitled

to both the current and future cash flows of the firm. They also bear the costs of any risks associated with those cash flows. Therefore, the current stock value reflects how shareholders weigh the sometimes conflicting goals of getting cash flows sooner versus later, or increasing profits versus reducing risk. By maximizing the current value of the stock, managers are actually pursuing a broader set of goals in exactly the way that matters to shareholders.

By maximizing stock value, managers can also make the firm's other investors and stakeholders better off. This occurs because the stockholders in a firm are residual owners. By this we mean that they are entitled only to what is left after employees, suppliers, and creditors (and everyone else with legitimate claims) are paid what they are due. If any of these groups go unpaid, the stockholders get nothing. So if the stockholders are winning in the sense that the leftover, residual portion is growing, it is usually true that everyone else also is winning. As we will discuss in later chapters, an important exception occurs when the firm is at risk of bankruptcy. In those situations, creditors may prefer a safer strategy to guarantee that they will be paid, while stockholders may prefer a riskier strategy with upside potential.

Because the goal of financial management is usually to maximize the value of the stock, we need to learn how to identify investments and financing arrangements that favorably impact the value of the stock. This is precisely what we will be studying. In the previous section, we emphasized the importance of cash flows in value creation. In fact, we could have defined *corporate finance* as the study of the relationship between business decisions, cash flows, and the value of the stock in the business.

A MORE GENERAL GOAL

If our goal is as stated in the preceding section (to maximize the value of the stock), an obvious question comes up: What is the appropriate goal when the firm has no traded stock? Corporations are certainly not the only type of business; and the stock in many corporations rarely changes hands, so it's difficult to say what the value per share is at any particular time.

As long as we are considering for-profit businesses, only a slight modification is needed. The total value of the stock in a corporation is equal to the value of the owners' equity. Therefore, a more general way of stating our goal is as follows:

Maximize the value of the existing owners' equity.

With this in mind, we don't care whether the business is a sole proprietorship, partnership, or corporation. For each of these structures, good financial decisions increase the value of the owners' equity, and poor financial decisions decrease it. In fact, although we choose to focus on corporations in the chapters ahead, the principles we develop apply to all forms of business. Many of them even apply to the not-for-profit sector.

Finally, our goal does not imply that the financial manager should take illegal or unethical actions in the hope of increasing the value of the equity in the firm. What we mean is that the financial manager best serves the owners of the business by identifying goods and services that add value to the firm because they are desired, legal, and valued in the free marketplace.

Business ethics are considered at **www.business-ethics.com**.

1.5 The Agency Problem and Control of the Corporation

We've seen that the financial manager acts in the best interests of the stockholders by taking actions that increase the value of the stock. However, in large corporations, ownership can be spread over a huge number of stockholders. This dispersion of ownership

arguably means that management effectively controls the firm. In this case, will management necessarily act in the best interests of the stockholders? Put another way, might not management pursue its own goals at the stockholders' expense? In the following pages, we briefly consider some of the arguments relating to this question.

Corporate governance represents rules and practices that ensure that management acts in the interests of stockholders and other groups with a claim to the firm's cash flows. It varies quite a bit around the world. For example, in most countries other than the United States and the United Kingdom, publicly traded companies are usually controlled by one or more large shareholders.[1] Moreover, in countries with limited shareholder protection, when compared to countries with strong shareholder protection like the United States and the United Kingdom, large shareholders may have a greater opportunity to take advantage of minority shareholders. Research shows that a country's investor protection framework is important to understanding a firm's cash holdings and dividend payouts. Studies find that shareholders do not highly value cash holdings of firms in countries with low investor protection because of the fear that cash held inside the firm will not be paid out to minority investors.

In the basic corporate governance setup, the shareholders elect the board of directors, who, in turn, appoint the top corporate managers, such as the CEO. The CEO is usually a member of the board of directors. One aspect of corporate governance that has received attention recently concerns the chair of a firm's board of directors. In a large number of U.S. corporations, the CEO and the board chair are the same person. An argument can be made that combining the CEO and board chair positions can contribute to poor corporate governance. When comparing corporate governance in the United States and the United Kingdom, an edge is often given to the United Kingdom, partly because more than 90 percent of U.K. companies are chaired by outside directors rather than the CEO. This is a contentious issue confronting many U.S. corporations. For example, in 2019, 34 percent of the S&P 500 companies had named an independent outsider as board chair, up from only 10 percent a few years earlier. An additional 19 percent of S&P 500 companies had split the board chair and CEO roles. One trend that is evident in S&P 500 board memberships is the growth in diversity. During 2019, 432 board members were added to S&P 500 boards. Of this number, 59 percent were women or minority men. Currently, more than 90 percent of S&P 500 boards have two or more women directors.

AGENCY RELATIONSHIPS

The relationship between stockholders and management is called an *agency relationship*. Such a relationship exists whenever someone (the principal) hires another (the agent) to represent his or her interests. For example, you might hire someone (an agent) to sell a car that you own while you are away at school. In all such relationships, there is a possibility of a conflict of interest between the principal and the agent. Such a conflict is called an **agency problem**.

Suppose you hire someone to sell your car and you agree to pay that person a flat fee when he or she sells the car. The agent's incentive in this case is to make the sale, not necessarily to get you the best price. If you offer a commission of, say, 10 percent of the sales price instead of a flat fee, then this problem might not exist. This example illustrates that the way in which an agent is compensated is one factor that affects agency problems.

[1]For a somewhat contrary view about the concentration of shareholder ownership in the United States and around the world, see Clifford G. Holderness, "The Myth of Diffuse Ownership in the United States," *The Review of Financial Studies* 22, no. 4 (April 2009).

MANAGEMENT GOALS

To see how management and stockholder interests might differ, imagine that a firm is considering a new investment. The new investment is expected to favorably impact the share value, but it is also a relatively risky venture. The owners of the firm will wish to take the investment (because the stock value will rise), but management may not because there is the possibility that things will turn out badly and management jobs will be lost. If management does not take the investment, then the stockholders may lose a valuable opportunity. This is one example of an *agency cost*.

More generally, the term *agency costs* refers to the costs of the conflict of interest between stockholders and management. These costs can be indirect or direct. An indirect agency cost is a lost opportunity, such as the one we have just described.

Direct agency costs come in two forms. The first type is a corporate expenditure that benefits management but costs the stockholders. Perhaps the purchase of a luxurious and unneeded corporate jet would fall under this heading. The second type of direct agency cost is an expense that arises from the need to monitor management actions. Paying outside auditors to assess the accuracy of financial statement information is one example.

It is sometimes argued that, left to themselves, managers would tend to maximize the amount of resources over which they have control or, more generally, corporate power or wealth. This goal could lead to an overemphasis on corporate size or growth. For example, cases in which management is accused of overpaying to buy another company to increase the size of the business or to demonstrate corporate power are not uncommon. Obviously, if overpayment does take place, such a purchase does not benefit the stockholders of the purchasing company.

Our discussion indicates that management may overemphasize organizational survival to protect job security. Management may also dislike outside interference, and reject external oversight even when that would increase stockholder value.

DO MANAGERS ACT IN THE STOCKHOLDERS' INTERESTS?

Whether managers will, in fact, act in the best interests of stockholders depends on two factors. First, how closely are management goals aligned with stockholder goals? This question relates, at least in part, to the way managers are compensated. Second, can managers be replaced if they do not pursue stockholder goals? This issue relates to control of the firm. As we will discuss, managerial compensation structures and the threat of replacement can incentivize managers to act in the interests of stockholders.

Managerial Compensation Management will frequently have a significant economic incentive to increase share value for two reasons. First, managerial compensation, particularly at the top, is usually tied to financial performance in general and often to share value in particular. For example, managers are frequently given the option to buy stock at a certain price, known as the strike price. If the stock's value increases beyond the strike price, the option becomes more valuable. In fact, stock and option grants are often used to motivate employees of all types. For example, during 2020, Apple expensed about $12.2 billion in stock-related compensation, or about $63,200 per employee. In 2020, the total compensation for Tim Cook, CEO of Apple, was about $15 million. His base salary was $3 million with a bonus of $10.7 million, and $1 million for security and travel. He also owned restricted stock units totaling $281 million. Although there are many critics of the high level of CEO compensation, from the stockholders' point of view, sensitivity of compensation to firm performance is more important.

The second incentive managers have relates to job prospects. Better performers within the firm will tend to get promoted. More generally, managers who are successful in pursuing stockholder goals will be in greater demand in the labor market and command higher salaries.

In fact, managers who are successful in pursuing stockholder goals can reap enormous rewards. The best-paid executive in 2020 was Chad Richison, the founder and CEO of Paycom, who made about $211 million. By way of comparison, Kylie Jenner made $590 million, and Kanye West made about $170 million.[2]

While the appropriate level of executive compensation can be debated, bonuses and other payments made to executives who receive payments due to illegal or unethical behavior are a problem. Recently, "clawbacks" and deferred compensation have been introduced to combat such questionable payments. With a clawback, a bonus can be reclaimed by the company for specific reasons, such as fraud. For example, in 2019, Goldman Sachs said it was investigating the possibility of clawing back $14.2 million from former CEO Lloyd Blankfein and $15.4 million from Chief Executive David Solomon. The clawback was being considered after a Malaysian bribery scandal that caused the bank's value to tumble by half. The use of deferred compensation has also increased. Deferred compensation is money paid to an executive several years after it is earned. With a deferred compensation agreement, if circumstances warrant, the payment can be canceled.

Control of the Firm Control of the firm ultimately rests with stockholders. They elect the board of directors, who, in turn, hire and fire management.

An important mechanism by which unhappy stockholders can replace existing management is called a *proxy fight*. A proxy is the authority to vote someone else's stock. A proxy fight develops when a group solicits proxies in order to replace the existing board and thereby replace existing management. For example, in January 2019, activist hedge fund Elliott Management announced plans for a proxy fight with eBay. Elliott was joined by fellow activist investor Starboard Value. Elliott and Starboard wanted eBay to sell Stubhub and the company's Classifieds business. The funds eventually pushed for four seats on eBay's board. In response, eBay sold Stubhub for about $4 billion in November 2019. The proxy fight for four seats on the board ended in April 2020 when eBay hired Jamie Iannone as the new CEO of e-commerce. Even though the proxy fight had ended, eBay sold its Classifieds business in July 2020 for $9.2 billion.

Another way that management can be replaced is by takeover. Firms that are poorly managed are more attractive as acquisitions than well-managed firms because a greater profit potential exists from a change in management. For example, in July 2020, Eldorado completed its $17.3 billion acquisition of Caesars Entertainment, creating the largest gambling company in the United States. And, even though the new company kept the Caesars name and ticker symbol, the management of Caesars was let go, and Eldorado management took over the merged company. Avoiding a takeover by another firm gives management another incentive to act in the stockholders' interests. Unhappy prominent shareholders can suggest different business strategies to a firm's top management.

[2]This raises the issue of the level of top management pay and its relationship to other employees. According to the *Economic Policy Institute*, the average CEO compensation was greater than 221 times the average employee compensation in 2019 and only 30 times in 1978. However, there is no precise formula that governs the gap between top management compensation and that of employees. In 2018, large companies began reporting the pay ratio between the CEO compensation and the median compensation of other employees.

STAKEHOLDERS

Our discussion thus far implies that management and stockholders are the only parties with an interest in the firm's decisions. This is an oversimplification, of course. Employees, customers, suppliers, and even the government all have a financial interest in the firm.

Taken together, these various groups are called **stakeholders** in the firm. In general, a stakeholder is someone who potentially has a claim on the cash flows of the firm. Stakeholder groups may have conflicting interests and compete to exert control over the firm.

1.6 Regulation

Until now, we have talked mostly about the actions that shareholders and boards of directors can take to reduce the conflicts of interest between themselves and management. We have not talked about regulation.[3] Until recently, the main thrust of federal regulation has been to require that companies disclose all relevant information to investors and potential investors. Disclosure of relevant information by corporations is intended to put all investors on a level information playing field and reduce conflicts of interest. Of course, regulation imposes costs on corporations and any analysis of regulation must include both benefits and costs.

THE SECURITIES ACT OF 1933 AND THE SECURITIES EXCHANGE ACT OF 1934

The Securities Act of 1933 (the 1933 Act) and the Securities Exchange Act of 1934 (the 1934 Act) provide the basic regulatory framework in the United States for the public trading of securities.

The 1933 Act focuses on the issuing of new securities. Basically, the 1933 Act requires a corporation to file a registration statement with the Securities and Exchange Commission (SEC) that must be made available to every buyer of a new security. The intent of the registration statement is to provide potential stockholders with all the necessary information to make a reasonable decision. The 1934 Act extends the disclosure requirements of the 1933 Act to securities trading in markets after they have been issued. The 1934 Act established the SEC and covers a large number of issues including corporate reporting, tender offers, and insider trading. The 1934 Act requires corporations to file reports to the SEC on an annual basis (Form 10-K), on a quarterly basis (Form 10-Q), and on a monthly basis (Form 8-K).

As mentioned, the 1934 Act deals with the important issue of insider trading. Illegal insider trading occurs when any person who has acquired nonpublic, special information (i.e., inside information) buys or sells securities based upon that information. One section of the 1934 Act deals with insiders such as directors, officers, and large shareholders, while another deals with any person who has acquired inside information. The intent of these sections of the 1934 Act is to prevent insiders or persons with inside information from taking unfair advantage of this information when trading with outsiders.

To illustrate, suppose you learned that ABC firm was about to publicly announce that it had agreed to be acquired by another firm at a price significantly greater than its

[3] At this stage in our book, we focus on the regulation of corporate governance. We do not talk about many other regulators in financial markets, not to mention nonfinancial markets, such as the Federal Reserve Board. In Chapter 8, we discuss the nationally recognized statistical rating organizations (NRSROs) in the United States. These include Fitch Ratings, Moody's, and Standard & Poor's. Their ratings are used by market participants to help value securities such as corporate bonds. Many critics of the rating agencies blame the 2007–2009 subprime credit crisis on weak regulatory oversight of these agencies.

current price. This is an example of inside information. The 1934 Act prohibits you from buying ABC stock from shareholders who do not have this information. This prohibition would be especially strong if you were the CEO of the ABC firm. Other kinds of inside information could be knowledge of an initial dividend about to be paid, the discovery of a drug to cure cancer, or the default on a debt obligation.

SARBANES-OXLEY

In response to corporate scandals at companies such as Enron, WorldCom, Tyco, and Adelphia, Congress enacted the Sarbanes-Oxley Act in 2002. The act, better known as "SOX," is intended to protect investors from corporate abuses. For example, one section of SOX prohibits personal loans from a company to its officers, such as the ones that were received by WorldCom CEO Bernie Ebbers.

One of the key sections of SOX took effect on November 15, 2004. Section 404 requires, among other things, that each company's annual report must have an assessment of the company's internal control structure and financial reporting. The auditor must then evaluate and attest to management's assessment of these issues. SOX also created the Public Company Accounting Oversight Board (PCAOB) to establish new audit guidelines and ethical standards. It requires public companies' audit committees of corporate boards to include only independent, outside directors to oversee the annual audits and disclose if the committees have a financial expert (and, if not, why not).

SOX contains other key requirements. For example, the officers of the corporation must review and sign the annual reports. They must explicitly declare that the annual report does not contain any false statements or material omissions, that the financial statements fairly represent the financial results, and that they are responsible for all internal controls. Finally, the annual report must list any deficiencies in internal controls. In essence, SOX makes company management responsible for the accuracy of the company's financial statements.

Of course, as with any law, there are costs. SOX has increased the expense of corporate audits, sometimes dramatically. In 2004, the average compliance cost for large firms was $4.51 million, although costs have dropped significantly as you can see.

SOX Filer Status	Average Annual SOX Compliance Costs (Internal)*			
	2020	2019	Trend	Percent Change
Large accelerated filer	$1,371,200	$1,309,200	↑	5%
Accelerated filer	$1,133,200	$989,300	↑	15%
Nonaccelerated filer	$889,300	$734,200	↑	21%
Emerging growth company	$1,328,600	$1,338,800	↓	–1%

SOURCE: 2020 Sarbanes-Oxley Compliance Survey, Protiviti, www.protiviti.com/US-en/insights/sox-compliance-survey.

This added expense has led to several unintended results. For example, in 2003, 198 firms delisted their shares from exchanges, or "went dark," and about the same number delisted in 2004. Both numbers were up from 30 delistings in 1999. Many of the companies that delisted stated the reason was to avoid the cost of compliance with SOX.[4]

[4]But in "Has New York Become Less Competitive Than London in Global Markets? Evaluating Foreign Listing Choices Over Time," *Journal of Financial Economics* 91, no. 3 (March 2009), pp. 253–77, Craig Doidge, Andrew Karolyi, and René Stulz find that the decline in delistings is not directly related to Sarbanes-Oxley. They conclude that most New York delistings were because of mergers and acquisitions, distress, and restructuring.

A company that goes dark does not have to file quarterly or annual reports. Annual audits by independent auditors are not required and executives do not have to certify the accuracy of the financial statements, so the savings can be huge. Of course, there are costs. Stock prices typically fall when a company announces it is going dark. Such companies will typically have limited access to capital markets and usually will have a higher interest cost on bank loans.

SOX also has probably affected the number of companies choosing to go public in the United States. For example, when Peach Holdings, based in Boynton Beach, Florida, decided to go public, it shunned the U.S. stock markets, instead choosing the London Stock Exchange's Alternative Investment Market (AIM). To go public in the United States, the firm would have paid a $100,000 fee, plus about $2 million to comply with SOX. Instead, the company spent only $500,000 on its AIM stock offering.

Summary and Conclusions

This chapter introduced you to some of the basic ideas in corporate finance:

1. Corporate finance has three main areas of concern:
   a. *Capital budgeting*: What long-term investments should the firm take?
   b. *Capital structure*: Where will the firm get the long-term financing to pay for its investments? Also, what mixture of debt and equity should it use to fund operations?
   c. *Working capital management*: How should the firm manage its everyday financial activities?
2. The goal of financial management in a for-profit business is to make decisions that increase the value of the stock, or, more generally, increase the value of the equity.
3. The corporate form of organization is superior to other forms when it comes to raising money and transferring ownership interests, but it has the significant disadvantage of double taxation.
4. There is the possibility of conflicts between stockholders and management in a large corporation. We called these conflicts *agency problems* and discussed how they might be controlled and reduced.
5. The advantages of the corporate form are enhanced by the existence of financial markets.

Of the topics we've discussed thus far, the most important is the goal of financial management: maximizing the value of the stock. Throughout the text we will be analyzing many different financial decisions, but we will always ask the same question: How does the decision under consideration affect the value of the stock?

Concept Questions

1. **Agency Problems** Who owns a corporation? Describe the process whereby the owners control the firm's management. What is the main reason that an agency relationship exists in the corporate form of organization? In this context, what kinds of problems can arise?

2. **Not-for-Profit Firm Goals** Suppose you were the financial manager of a not-for-profit business (a not-for-profit hospital, perhaps). What kinds of goals do you think would be appropriate?
3. **Goal of the Firm** Evaluate the following statement: Managers should not focus on the current stock value because doing so will lead to an overemphasis on short-term profits at the expense of long-term profits.
4. **Ethics and Firm Goals** Can the goal of maximizing the value of the stock conflict with other goals, such as avoiding unethical or illegal behavior? In particular, do you think subjects like customer and employee safety, the environment, and the general good of society fit into this framework, or are they essentially ignored? Think of some specific scenarios to illustrate your answer.
5. **International Firm Goal** Would the goal of maximizing the value of the stock differ for financial management in a foreign country? Why or why not?
6. **Agency Problems** Suppose you own stock in a company. The current price per share is $25. Another company has just announced that it wants to buy your company and will pay $35 per share to acquire all the outstanding stock. Your company's management immediately begins fighting off this hostile bid. Is management acting in the shareholders' best interests? Why or why not?
7. **Agency Problems and Corporate Ownership** Corporate ownership varies around the world. Historically, individuals have owned the majority of shares in public corporations in the United States. In Germany and Japan, however, banks, other large financial institutions, and other companies own most of the stock in public corporations. Do you think agency problems are likely to be more or less severe in Germany and Japan than in the United States?
8. **Agency Problems and Corporate Ownership** In recent years, large financial institutions such as mutual funds and pension funds have become the dominant owners of stock in the United States, and these institutions are becoming more active in corporate affairs. What are the implications of this trend for agency problems and corporate control?
9. **Executive Compensation** Critics have charged that compensation to top managers in the United States is too high and should be cut back. For example, focusing on large corporations, Larry Culp of General Electric was one of the best-compensated CEOs in the United States during 2020, earning about $73 million. Are such amounts excessive? In answering, it might be helpful to recognize that superstar athletes such as Cristiano Ronaldo, top earners in the entertainment field such as Kanye West and Oprah Winfrey, and many others at the top of their respective fields earn at least as much, if not a great deal more.
10. **Goal of Financial Management** Why is the goal of financial management to maximize the current value of the company's stock? In other words, why isn't the goal to maximize the future value?

2

Financial Statements and Cash Flow

The COVID-19 crisis in the early part of 2020 affected many industries, perhaps none more significantly than the airlines. For the industry as a whole, the International Air Transport Association (IATA) stated that global losses would be about $84 billion in 2020 and an additional $15 billion in 2021. United Airlines, for example, lost about $2 billion in the first quarter of 2020 alone and another $1.6 billion in the second quarter.

Of course, global pandemics aren't the only reason companies report losses. In mid-2020, Shell announced that it would write off $22 billion due to a decrease in the value of its assets, and BP announced a $17.5 billion write-off for the same reason. Both companies attributed the write-offs to an expected reduction in oil and gas prices in the coming decades, along with the transition to cleaner energy sources.

So did stockholders in the major airlines lose money because of the traffic reduction? Definitely. Did stockholders in Shell and BP lose money when the write-offs were announced? Probably not. Understanding why ultimately leads us to the main subject of this chapter: that all-important substance known as *cash flow*.

Please visit us at **rwjcorporatefinance.blogspot.com** for the latest developments in the world of corporate finance.

2.1 The Balance Sheet

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The **balance sheet** is an accountant's snapshot of a firm's accounting value on a particular date, as though the firm stood momentarily still. The balance sheet has two sides: On the left are the *assets* and on the right are the *liabilities* and *stockholders' equity*. The balance sheet states what the firm owns and how it is financed. The accounting definition that underlies the balance sheet and describes the balance is:

$$\text{Assets} \equiv \text{Liabilities} + \text{Stockholders' equity}$$

We have put a three-line equality in the balance equation to indicate that it must always hold, by definition. In fact, the stockholders' equity is *defined* to be the difference between the assets and the liabilities of the firm. In principle, equity is what the stockholders would have if the firm were to discharge its obligations.

Table 2.1 gives the 2021 and 2022 balance sheet for the fictitious U.S. Composite Corporation. The assets in the balance sheet are listed in order by the length of time it normally would take an ongoing firm to convert them into cash. The asset side depends

Table 2.1 The Balance Sheet of the U.S. Composite Corporation

U.S. COMPOSITE CORPORATION
Balance Sheet 2021 and 2022
(in millions)

Assets	2021	2022	Liabilities (Debt) and Stockholders' Equity	2021	2022
Current assets:			Current liabilities:		
Cash and equivalents	$ 157	$ 198	Accounts payable	$ 455	$ 490
Accounts receivable	270	294	Total current liabilities	$ 455	$ 490
Inventory	280	269	Long-term liabilities:		
Total current assets	$ 707	$ 761	Deferred taxes	$ 104	$ 113
Fixed assets:			Long-term debt*	458	471
Property, plant, and equipment	$1,274	$1,423	Total long-term liabilities	$ 562	$ 584
Less accumulated depreciation	460	550	Stockholders' equity:		
Net property, plant, and equipment	$ 814	$ 873	Preferred stock	$ 39	$ 39
Intangible assets and others	221	245	Common stock ($1 par value)	32	55
Total fixed assets	$1,035	$1,118	Capital surplus	327	347
			Accumulated retained earnings	347	390
			Less treasury stock†	20	26
			Total equity	$ 725	$ 805
Total assets	$1,742	$1,879	Total liabilities and stockholders' equity‡	$1,742	$1,879

*Long-term debt rose by $471 million − 458 million = $13 million. This is the difference between $86 million new debt and $73 million in retirement of old debt.

†Treasury stock rose by $6 million. This reflects the repurchase of $6 million of U.S. Composite's company stock.

‡U.S. Composite reports $43 million in new equity. The company issued 23 million shares at a price of $1.87. The par value of common stock increased by $23 million, and capital surplus increased by $20 million.

on the nature of the business and how management chooses to conduct it. Management must make decisions about cash versus marketable securities, credit versus cash sales, whether to make or buy commodities, whether to lease or purchase items, the type of business in which to engage, and so on. The liabilities and the stockholders' equity are listed in the order in which they would typically be paid over time.

Two excellent sources for company financial information are **finance.yahoo.com** and **money.cnn.com**.

The liabilities and stockholders' equity side reflects the types and proportions of financing, which depend on management's choice of capital structure. Management will decide on which combination of debt and equity, and, for debt, which combination of short-term and long-term debt.

When analyzing a balance sheet, the financial manager should be aware of three concerns: liquidity, debt versus equity, and value versus cost.

LIQUIDITY

Liquidity refers to the ease and quickness with which assets can be converted to cash (without significant loss in value). *Current assets* are the most liquid and include cash and assets that will be turned into cash within a year from the date of the balance sheet. *Accounts receivable* are amounts not yet collected from customers for goods or services sold to them (after adjustment for potential bad debts). *Inventory* is composed of raw materials to be used in production, work in process, and finished goods. *Fixed assets* are the least liquid kind of assets. Tangible fixed assets include property, plant, and equipment.

Annual and quarterly financial statements for most public U.S. corporations can be found in the EDGAR database at **www.sec.gov**.

These assets do not convert to cash from normal business activity, and they are not usually used to pay expenses such as payroll.

Some fixed assets are intangible. Intangible assets have no physical existence but can be very valuable. Examples of intangible assets are the value of a trademark or the value of a patent. The more liquid a firm's assets, the less likely the firm is to experience problems meeting short-term obligations. The probability that a firm will avoid financial distress can be linked to the firm's liquidity. Unfortunately, liquid assets frequently have lower rates of return than fixed assets; for example, cash generates no investment income. To the extent a firm invests in liquid assets, it sacrifices an opportunity to invest in potentially more profitable investment vehicles.

DEBT VERSUS EQUITY

Liabilities are obligations of the firm that require a payout of cash within a stipulated period. Many liabilities involve contractual obligations to repay a stated amount plus interest over a period. Liabilities are debts and are frequently associated with fixed cash burdens, called *debt service*, that put the firm in default of a contract if they are not paid. *Stockholders' equity* is a claim against the firm's assets that is residual and not fixed. In general terms, when the firm borrows, it gives the bondholders first claim on the firm's cash flow.[1] Bondholders can sue the firm if the firm defaults on its bond contracts. This may lead the firm to declare itself bankrupt. Stockholders' equity is the difference between assets and liabilities:

$$\text{Assets} - \text{Liabilities} \equiv \text{Stockholders' equity}$$

This is the stockholders' share in the firm stated in accounting terms. The accounting value of stockholders' equity increases when retained earnings are added. This occurs when the firm retains part of its earnings instead of paying them out as dividends.

The home page for the Financial Accounting Standards Board (FASB) is **www.fasb.org**.

VALUE VERSUS COST

The accounting value of a firm's assets is frequently referred to as the *carrying value* or the *book value* of the assets.[2] Under **generally accepted accounting principles (GAAP)**, audited financial statements of firms in the United States carry assets at cost.[3] The terms *carrying value* and *book value* are misleading and cause many readers of financial statements to believe the firm's assets are recorded at true market values. *Market value* is the price at which willing buyers and sellers would trade the assets. It would be only a coincidence if accounting value and market value were the same. In fact, management's job is to create value for the firm that exceeds its cost.

Many people use the balance sheet, but the information each may wish to extract is different. A banker may look at a balance sheet for evidence of accounting liquidity and working capital, while a supplier also may note the size of accounts payable and the general promptness of payments. Many users of financial statements, including managers and investors, want to know the market value of the firm, not its cost. This information is not found on the balance sheet. In fact, many of the true resources of the firm do not

[1] Bondholders are investors in the firm's debt. They are creditors of the firm. In this discussion, the term *bondholder* means the same thing as *creditor*.

[2] Confusion often arises because many financial accounting terms have the same meaning. For example, the following terms usually refer to the same thing: *assets minus liabilities*, *net worth*, *stockholders' equity*, *owners' equity*, *book equity*, and *equity capitalization*.

[3] Generally, the U.S. GAAP require assets to be carried at the lower of cost or market value. In most instances, cost is lower than market value. However, in some cases when a fair market value can be readily determined, the assets have their value adjusted to the fair market value.

appear on the balance sheet: good management, proprietary assets, favorable economic conditions, and so on. Henceforth, whenever we refer to the value of an asset or the value of the firm, we will normally mean its market value. So, when we say the goal of the financial manager is to increase the value of the stock, we usually mean the market value of the stock, not the book value.

With the increasing globalization of business, there has been a growing need to make accounting standards more comparable across countries. In recent years, U.S. accounting standards have become more closely tied to International Financial Reporting Standards (IFRS). In particular, the Financial Accounting Standards Board, which is in charge of GAAP policies, and the International Accounting Standards Board, in charge of IFRS polices, have been working toward convergence of policies. Although GAAP and IFRS have become similar in several areas, it appears that a full convergence of accounting policies is off the table, at least for now.

For more information about IFRS, check out the website **www.ifrs.org**.

EXAMPLE 2.1

Market Value versus Book Value The Cooney Corporation has fixed assets with a book value of $700 and an appraised market value of about $1,000. Net working capital is $400 on the books, but approximately $600 would be realized if all the current accounts were liquidated. Cooney has $500 in long-term debt, in book value and market value terms. What is the book value of the equity? What is the market value?

We can construct two simplified balance sheets, one in accounting (book value) terms and one in economic (market value) terms:

COONEY CORPORATION
Balance Sheets
Market Value versus Book Value

Assets			Liabilities and Shareholders' Equity		
	Book	**Market**		**Book**	**Market**
Net working capital	$ 400	$ 600	Long-term debt	$ 500	$ 500
Net fixed assets	700	1,000	Shareholders' equity	600	1,100
	$1,100	$1,600		$1,100	$1,600

In this example, shareholders' equity is actually worth almost twice as much as what is shown on the books. The distinction between book and market values is important precisely because book values can be so different from market values.

2.2 The Income Statement

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The **income statement** measures performance over a specific period—say a year. The accounting definition of income is:

$$\text{Revenue} - \text{Expenses} \equiv \text{Income}$$

If the balance sheet is like a snapshot, the income statement is like a video recording of what the company did between two snapshots. Table 2.2 gives the income statement for the U.S. Composite Corporation for 2022.