



Fundamentals of Corporate Finance

Brealey

Myers

Marcus

Ninth Edition

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Education

Fundamentals of
Corporate Finance

Ninth EDITION

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Fundamentals of Corporate Finance

Ninth EDITION

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FUNDAMENTALS OF CORPORATE FINANCE, NINTH EDITION

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Dedication To Our Families

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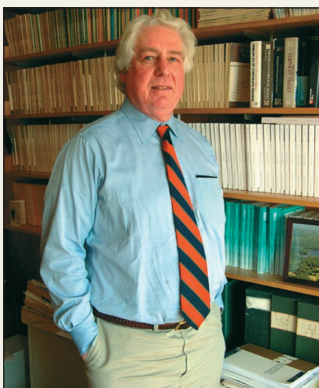


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Professor Brealey is the former president of the European Finance Association and a former director of the American Finance Association. He is a fellow of the British Academy and has served as Special Adviser to the Governor of the Bank of England and as director of a number of financial institutions. Professor Brealey is also the author (with Professor Myers and Franklin Allen) of this book's sister text, *Principles of Corporate Finance* (McGraw-Hill Education).



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This book is an introduction to corporate finance. It focuses on how companies invest in real assets, how they raise the money to pay for the investments, and how those assets ultimately affect the value of the firm. It also provides a broad overview of the financial landscape, discussing, for example, the major players in financial markets, the role of financial institutions in the economy, and how securities are traded and valued by investors. The book offers a framework for systematically thinking about most of the important financial problems that both firms and individuals are likely to confront.

Financial management is important, interesting, and challenging. It is *important* because today's capital investment decisions may determine the businesses that the firm is in 10, 20, or more years ahead. Needless to say, a firm's success or failure depends, in large part, on its ability to find the capital that it requires.

Finance is *interesting* for several reasons. Financial decisions often involve huge sums of money. Large investment projects or acquisitions may involve billions of dollars. Also, the financial community is international and fast-moving, with colorful heroes and a sprinkling of unpleasant villains.

Finance is *challenging*. Financial decisions are rarely cut and dried, and the financial markets in which companies operate are changing rapidly. Good managers can cope with routine problems, but only the best managers can respond to change. To handle new problems, you need more than rules of thumb; you need to understand why companies and financial markets behave as they do and when common practice may not be best practice. Once you have a consistent framework for making financial decisions, complex problems become more manageable.

This book provides that framework. It is not an encyclopedia of finance. It focuses instead on setting out the basic *principles* of financial management and applying them to the main decisions faced by the financial manager. It explains why the firm's owners would like the manager to increase firm value and shows how managers make choices between investments that may pay off at different points of time or have different degrees of risk. It also describes the main features of financial markets and discusses why companies may prefer a particular source of finance.

We organize the book around the key concepts of modern finance. These concepts, properly explained, simplify the subject. They are also practical. The tools of financial management are easier to grasp and use effectively when presented in a consistent conceptual framework. This text provides that framework.

Modern financial management is not "rocket science." It is a set of ideas that can be made clear by words, graphs, and numerical examples. The ideas provide the "why" behind the tools that good financial managers use to make investment and financing decisions.

We wrote this book to make financial management clear, useful, and fun for the beginning student. We set out to show that modern finance and good financial practice go together, even for the financial novice.

Fundamentals and Principles of Corporate Finance

This book is derived in part from its sister text *Principles of Corporate Finance*. The spirit of the two books is similar. Both apply modern finance to give students a working ability to make financial decisions. However, there are also substantial differences between the two books.

First, we provide in *Fundamentals* much more detailed discussion of the principles and mechanics of the time value of money. This material underlies almost all of this text, and we spend a lengthy chapter providing extensive practice with this key concept.

Second, we use numerical examples in this text to a greater degree than in *Principles*. Each chapter presents several detailed numerical examples to help the reader become familiar and comfortable with the material.

Third, we have streamlined the treatment of most topics. Whereas *Principles* has 34 chapters, *Fundamentals* has only 25. The relative brevity of *Fundamentals* necessitates a broader-brush coverage of some topics, but we feel that this is an advantage for a beginning audience.

Fourth, we assume little in the way of background knowledge. While most users will have had an introductory accounting course, we review the concepts of accounting that are important to the financial manager in Chapter 3.

Principles is known for its relaxed and informal writing style, and we continue this tradition in *Fundamentals*. In addition, we use as little mathematical notation as possible. Even when we present an equation, we usually write it in words rather than symbols. This approach has two advantages. It is less intimidating, and it focuses attention on the underlying concept rather than the formula.

Organizational Design

Fundamentals is organized in eight parts.

Part 1 (Introduction) provides essential background material. In the first chapter, we discuss how businesses are organized, the role of the financial manager, and the financial markets in which the manager operates. We explain how shareholders want managers to take actions that increase the value of their investment, and we introduce the concept of the opportunity cost of capital and the trade-off that the firm needs to make when assessing investment proposals. We also describe some of the mechanisms that help to align the interests of managers and shareholders. Of course, the task of increasing shareholder value does not justify corrupt and unscrupulous behavior. We, therefore, discuss some of the ethical issues that confront managers.

Chapter 2 surveys and sets out the functions of financial markets and institutions. This chapter also reviews the crisis of 2007–2009. The events of those years illustrate clearly why and how financial markets and institutions matter.

A large corporation is a team effort, so the firm produces financial statements to help the players monitor its progress. Chapter 3 provides a brief overview of these financial statements and introduces two key distinctions—between market and book values and between cash flows and profits. This chapter also discusses some of the shortcomings in accounting practice. The chapter concludes with a summary of federal taxes.

Chapter 4 provides an overview of financial statement analysis. In contrast to most introductions to this topic, our discussion is motivated by considerations of valuation and the insight that financial ratios can provide about how management has added to the firm's value.

Part 2 (Value) is concerned with valuation. In Chapter 5, we introduce the concept of the time value of money, and because most readers will be more familiar with their own financial affairs than with the big leagues of finance, we motivate our discussion by looking first at some personal financial decisions. We show how to value long-lived streams of cash flows and work through the valuation of perpetuities and annuities. Chapter 5 also contains a short concluding section on inflation and the distinction between real and nominal returns.

Chapters 6 and 7 introduce the basic features of bonds and stocks and give students a chance to apply the ideas of Chapter 5 to the valuation of these securities. We show how to find the value of a bond given its yield, and we show how prices of bonds fluctuate as interest rates change. We look at what determines stock prices and how stock valuation formulas can be used to infer the return that investors expect. Finally, we see how investment opportunities are reflected in the stock price and why analysts focus on the price-earnings multiple. Chapter 7 also introduces the concept of market efficiency. This concept is crucial to interpreting a stock's valuation; it also provides a framework for the later treatment of the issues that arise when firms issue securities or make decisions concerning dividends or capital structure.

The remaining chapters of Part 2 are concerned with the company's investment decision. In Chapter 8, we introduce the concept of net present value and show how to calculate the NPV of a simple investment project. We then consider more complex investment proposals, including choices between alternative projects, machine replacement decisions, and decisions of when to invest. We also look at other measures of an investment's attractiveness—its internal rate of return, profitability index, and payback period. We show how the profitability index can be used to choose between investment projects when capital is scarce. The appendix to Chapter 8 shows how to sidestep some of the pitfalls of the IRR rule.

The first step in any NPV calculation is to decide what to discount. Therefore, in Chapter 9, we work through a realistic example of a capital budgeting analysis, showing how the manager needs to recognize the investment in working capital and how taxes and depreciation affect cash flows.

We start Chapter 10 by looking at how companies organize the investment process and ensure everyone works toward a common goal. We then go on to look at various techniques to help managers identify the key assumptions in their estimates, such as sensitivity analysis, scenario analysis, and break-even analysis. We explain the distinction between accounting break-even and NPV break-even. We conclude the chapter by describing how managers try to build future flexibility into projects so that they can capitalize on good luck and mitigate the consequences of bad luck.

Part 3 (Risk) is concerned with the cost of capital. Chapter 11 starts with a historical survey of returns on bonds and stocks and goes on to distinguish between the specific risk and market risk of individual stocks. Chapter 12 shows how to measure market risk and discusses the relationship between risk and expected return. Chapter 13 introduces the weighted-average cost of capital and provides a practical illustration of how to estimate it.

Part 4 (Financing) begins our discussion of the financing decision. Chapter 14 provides an overview of the securities that firms issue and their relative importance as sources of finance. In Chapter 15, we look at how firms issue securities, and we follow a firm from its first need for venture capital, through its initial public offering, to its continuing need to raise debt or equity.

Part 5 (Debt and Payout Policy) focuses on the two classic long-term financing decisions. In Chapter 16, we ask how much the firm should borrow, and we summarize bankruptcy procedures that occur when firms can't pay their debts. In Chapter 17, we study how firms should set dividend and payout policy. In each case, we start with Modigliani and Miller's (MM's) observation that in well-functioning markets, the decision should not matter, but we use this initial observation to help the reader understand why financial managers in practice *do* pay attention to these decisions.

Part 6 (Financial Analysis and Planning) starts with long-term financial planning in Chapter 18, where we look at how the financial manager considers the combined effects of investment and financing decisions on the firm as a whole. We also show how measures of internal and sustainable growth help managers check that the firm's planned growth is consistent with its financing plans. Chapter 19 is an introduction to short-term financial planning. It shows how managers ensure that the firm will have enough cash to pay its bills over the coming year. Chapter 20 addresses working capital management. It describes the basic steps of credit management, the principles of inventory management, and how firms handle payments efficiently and put cash to work as quickly as possible. It also describes how firms invest temporary surpluses of cash and how they can borrow to offset any temporary deficiency. Chapter 20 is conceptually straightforward, but it contains a large dollop of institutional material.

Part 7 (Special Topics) covers several important but somewhat more advanced topics—mergers (Chapter 21), international financial management (Chapter 22), options (Chapter 23), and risk management (Chapter 24). Some of these topics are touched on in earlier chapters. For example, we introduce the idea of options in Chapter 10, when we show how companies build flexibility into capital projects. However, Chapter 23 generalizes this material, explains at an elementary level how options are valued, and provides some examples of why the financial manager needs to be concerned about options. International finance is also not confined to Chapter 22. As one might expect from a book that is written by an international group of authors, examples from different countries and financial systems are scattered throughout the book. However, Chapter 22 tackles the specific problems that arise when a corporation is confronted by different currencies.

Part 8 (Conclusion) contains a concluding chapter (Chapter 25), in which we review the most important ideas covered in the text. We also introduce some interesting questions that either were unanswered in the text or are still puzzles to the finance profession. Thus, the last chapter is an introduction to future finance courses as well as a conclusion to this one.

Routes through the Book

There are about as many effective ways to organize a course in corporate finance as there are teachers. For this reason, we have ensured that the text is modular so that topics can be introduced in different sequences.

We like to discuss the principles of valuation before plunging into financial planning. Nevertheless, we recognize that many instructors will prefer to move directly from Chapter 4 (Measuring Corporate Performance) to Chapter 18 (Long-Term Financial Planning) in order to provide a gentler transition from the typical prerequisite accounting course. We have made sure that Part 6 (Financial Analysis and Planning) can easily follow Part 1.

Similarly, we like to discuss working capital after the student is familiar with the basic principles of valuation and financing, but we recognize that here also many instructors prefer to reverse our order. There should be no difficulty in taking Chapter 20 out of order.

When we discuss project valuation in Part 2, we stress that the opportunity cost of capital depends on project risk. But we do not discuss how to measure risk or how return and risk are linked until Part 3. This ordering can easily be modified. For example, the chapters on risk and return can be introduced before, after, or midway through the material on project valuation.

Changes in the Ninth Edition

Users of previous editions of this book will not find dramatic changes in either the material or the ordering of topics. But, throughout, we have made the book more up to date and easier to read. Here are some of the ways that we have done this.

Beyond the Page The biggest change in the last edition was the introduction of Beyond the Page digital extensions and applications. These digital extensions are not, as they may sound, artificial fingernails; they are additional examples, anecdotes, spreadsheet programs, and more thoroughgoing explanations of some topics. This material is very easily accessed on the web. In this edition, we have added a number of additional applications and made them easier to access. For example, the applications are seamlessly available with a click on the e-version of the book, but they are also readily accessible in the traditional hard copy of the text using the shortcut URLs provided in the margins of relevant pages.

Improving the Flow A major part of our effort in revising this text was spent on improving the flow. Often this has meant a word change here or a redrawn diagram there, but sometimes we have made more substantial changes. One example is the discussion of WACC in Chapter 13. Rather than chop and change between our two illustrative companies, Geothermal and Big Oil, we now follow through the Geothermal example to the end. By then, the reader should understand when one can and can't use WACC and can move on to tackling the practical problems of estimating Big Oil's capital structure and expected returns. The material is substantially unchanged, but we think that the flow is much improved.

Updating Of course, in each new edition we try to ensure that any statistics are as up to date as possible. For example, since the previous edition, we have available an extra 3 years of data on security returns. These show up in the figures in Chapter 11 of the long-run returns on stocks, bonds, and bills. Measures of EVA, data on security ownership, dividend payments, and stock repurchases are just a few of the other cases where data have been brought up to date.

Recent Events We discussed the financial crisis of 2007–2009 in the previous edition, but we have now been able to revise our discussion to include the spill-over to the crisis in the eurozone and to draw some general lessons. The eurozone crisis was also a reminder that government debt is not risk free. We come back to that issue in Chapter 6 when we discuss default risk.

Concepts There are several places where we have introduced new conceptual material. For example, students who have learned about the dividend discount model are often confused about how to value the many companies that also repurchase their stock. We introduce the issue in Chapters 7 and 13, and in Chapter 17, we explain how to value stocks of companies that both pay dividends and repurchase stock.

New Illustrative Boxes The text contains a number of boxes with illustrative real-world examples. Many of these are new. Look, for example, at the box in Chapter 2 that describes prediction markets and what they had to say about the 2016 primaries. Or look at the box in Chapter 15 that shows how HUDWAY used crowdfunding to finance its Head-Up Display project.

More Worked Examples We have added more worked examples in the text, many of them taken from real companies.

Specific Chapter Changes in the Ninth Edition

Here are a few of the additions to chapter material:

- Chapter 1** contains a discussion of the ethical implications of Volkswagen's suppression of emissions data for its diesel cars.
- Chapter 2** includes a new box on mortgage-backed securities and their role in the financial crisis.
- Chapter 3** includes updated discussions of accounting malfeasance and of the ebb and flow of attempts to harmonize GAAP and IFRS accounting standards.
- Chapter 5** has a reorganized and integrated discussion of calculators and spreadsheets.
- Chapter 6** includes a new Finance in Practice box to show how to find bond information on the web.
- Chapter 7** contains a new section on using discounted cash flow to value entire businesses. The section on the efficient market theory has also been substantially revised and given a more up-to-date feel.
- Chapter 9** now includes a short section that looks ahead to the techniques of project analysis in Chapter 10.
- Chapter 10** has been substantially rewritten and better integrated with Chapter 9. It continues with the Blooper example from the earlier chapter to show how capital budgeting practices and project analysis techniques combine to ensure that investment decisions truly add value.
- Chapter 14** now includes a discussion of shareholder votes on management compensation.
- Chapter 16** now includes a section warning of the effects of hidden debt and a summary section that discusses how a thoughtful financial manager should set the company's debt strategy.
- Chapter 17** contains a quick overview of trends in taxation and payout policy.
- Chapter 18** has been considerably revised with a new example. It takes the example of Dynamic Mattress and sets out the three steps needed to derive a financial plan for the company.
- Chapter 19** now offers a more focused look at short-term planning models. Discussions of working capital and the sources of short-term finance have been deferred until the next chapter.
- Chapter 20** introduces the components of working capital and the determinants of the cash cycle. It then looks briefly at each of the components including short-term debt. Chapter 20 is longer than in the previous edition, but we think that it stands much better on its own.
- Chapter 21** features numerous updates to reflect merger news of recent years, including the Allergan/Valeant battle.

Assurance of Learning

Assurance of learning is an important element of many accreditation standards. *Fundamentals of Corporate Finance*, Ninth Edition, is designed specifically to support your assurance-of-learning initiatives. Each chapter in the book begins with a list of numbered learning objectives, which are referred to in the end-of-chapter problems and exercises. Every test bank question is also linked to one of these objectives, in addition to level of difficulty, topic area, Bloom's Taxonomy level, and AACSB skill area. Connect, McGraw-Hill's online homework solution, and *EZ Test*, 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

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Corporate Finance, Ninth Edition, 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 *Fundamentals of Corporate Finance*, Ninth Edition, 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 *Fundamentals of Corporate Finance*, Ninth Edition, 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.

Unique Features

What makes *Fundamentals of Corporate Finance* such a powerful learning tool?

Integrated Examples

Numbered and titled examples are integrated in each chapter. Students can learn how to solve specific problems step-by-step as well as gain insight into general principles by seeing how they are applied to answer concrete questions and scenarios.

Example 5.8 ▶ Winning Big at the Lottery

In September 2015, a 50-year-old Michigan woman bought a Powerball lottery ticket and won \$310.5 million. We suspect that she received unsolicited congratulations, good wishes, and requests for money from dozens of more or less worthy charities, relations, and newly devoted friends. In response, she could fairly point out that the prize wasn't really worth \$310.5 million. That sum was to be paid in 30 equal annual installments of \$10.35 million each. Assuming that the first payment occurred at the end of 1 year, what was the present value of the prize? The interest rate at the time was about 3.2%.

The present value of these payments is simply the sum of the present values of each annual payment. But rather than valuing the payments separately, it is much easier to treat them as a 30-year annuity. To value this annuity, we multiply \$10.35 million by the 30-year annuity factor:

$$PV = 10.35 \times 30\text{-year annuity factor}$$

$$= 10.35 \times \left[\frac{1}{r} - \frac{1}{r(1+r)^{30}} \right]$$

At an interest rate of 3.2%, the annuity factor is

$$\left[\frac{1}{.032} - \frac{1}{.032(1.032)^{30}} \right] = 19.1033$$

Spreadsheet Solutions Boxes

These boxes provide the student with detailed examples of how to use Excel spreadsheets when applying financial concepts. The boxes include questions that apply to the spreadsheet, and their solutions are given at the end of the applicable chapter. These spreadsheets are available for download in Connect.

Spreadsheet Solutions Bond Valuation

Excel and most other spreadsheet programs provide built-in functions to compute bond values and yields. They typically ask you to input both the date you buy the bond (called the settlement date) and the maturity date of the bond.

The Excel function for bond value is:

=PRICE(settlement date, maturity date, annual coupon rate, yield to maturity, redemption value as percent of face value, number of coupon payments per year)

(If you can't remember the formula, just remember that you can go to the Formulas tab in Excel, and from the Financial tab pull down the PRICE function, which will prompt you for the necessary inputs.) For our 1.25% coupon bond, we would enter the values shown in the spreadsheet below. Alternatively, we could simply enter the following function in Excel: =PRICE("1/1/2010", "1/1/2012", 0.0125, 0.07, 100, 2)

The value of the bond assuming annual coupon payments is 100.164% of face value, or \$1,001.64. If we wanted to assume semiannual coupon payments, as in Example 6.1, we would simply change the entry in cell B10 to 2 (see column D), and the bond value would change to 100.165% of face value, as we found in that example.

We have also assumed that the first coupon payment comes in exactly one period (either a year or a half-year). In other words, the settlement date is precisely at the beginning of the period. However, the PRICE function will make the necessary adjustments for intraperiod purchase dates.

Suppose now that you wish to find the price of a 30-year maturity bond with a coupon rate of 6% (paid annually) selling at a yield to maturity of 7%. You are not given a specific settlement or maturity date. You can still use the PRICE function to value the bond. Simply choose an arbitrary settlement date.

Excel Exhibits

Selected exhibits are set as Excel spreadsheets. The accompanying files are available for instructors and students in Connect.

SPREADSHEET 5.3 Using a spreadsheet to find the present value of multiple cash flows

	A	B	C	D	E
1	Finding the present value of multiple cash flows using a spreadsheet				
2					
3	Time until CF	Cash flow	Present value	Formula in Col C	Alternative formula for Col C
4	0	8000	\$8,000.00	=PV(\$B\$10, A4, 0, -B4)	=B4/(1 + \$B\$10)^A4
5	1	4000	\$3,703.70	=PV(\$B\$10, A5, 0, -B5)	=B5/(1 + \$B\$10)^A5
6	2	4000	\$3,429.36	=PV(\$B\$10, A6, 0, -B6)	=B6/(1 + \$B\$10)^A6
7					
8	SUM		\$15,133.06	=SUM(C4:C6)	=SUM(C4:C6)
9					
10	Discount rate:	0.08			
11					
12	Notice that the time until each payment is found in column A.				
13	Once we enter the formula for present value in cell C4, we can copy it to cells C5 and C6.				
14	The present value for other interest rates can be found by changing the entry in cell B10.				

values (column C) therefore appear as positive numbers. Column E shows an alternative to the use of the PV function, where we calculate present values directly. This allows us to check our work.

Finance in Practice Boxes

These are excerpts that appear in most chapters, often from the financial press, providing real-life illustrations of the chapter's topics, such as ethical choices in finance, disputes about stock valuation, financial planning, and credit analysis.

Finance in Practice Ethical Disputes in Finance

Short-Selling

Investors who take short positions are betting that securities will fall in price. Usually they do this by borrowing the security, selling it for cash, and then waiting in the hope that they will be able to buy it back cheaply.* In 2007, hedge fund manager John Paulson took a huge short position in mortgage-backed securities. The bet paid off, and that year Paulson's trade made a profit of \$1 billion for his fund.*

Was Paulson's trade unethical? Some believe not only that he was profiting from the misery that resulted from the crash in mortgage-backed securities, but that his short trades accentuated the collapse. It is certainly true that short-sellers have never been popular. For example, following the crash of 1929, one commentator compared short-selling to the ghouliness of "creatures who, at all great earthquakes and fires, swoop in to rob broken homes and injured and dead

But sometimes raids can enhance shareholder value. For example, in 2012 and 2013, Relational Investors teamed up with the California State Teachers' Retirement System (CSTRS, a pension fund) to try to force Timken Co. to split into two separate companies, one for its steel business and one for its industrial bearings business. Relational and CSTRS believed that Timken's combination of unrelated businesses was unfocused and inefficient. Timken management responded that breakup would "deprive our shareholders of long-run value—all in an attempt to create illusory short-term gains through financial engineering." But Timken's stock price rose at the prospect of a breakup, and a nonbinding shareholder vote on Relational's proposal attracted a 53% majority. Finally in 2014 Timken spun off its steel business in a new corporation, Timken Steel.

How do you "draw the ethical line" in such examples? Was

Financial Calculator Boxes and Exercises

In a continued effort to help students grasp the critical concept of the time value of money, many pedagogical tools have been added throughout the first section of the text. Financial Calculator boxes provide examples for solving a variety of problems, with directions for the most popular financial calculators.

Financial Calculator Using a Financial Calculator to Compute Bond Yield

You can use a financial calculator to calculate the yield to maturity on our 1.25% Treasury bond. The inputs are:

	n	i	PV	PMT	FV
Inputs	3		-1001.64	12.5	1000
Compute		1.194			

payments of \$6.25. Therefore, we can find the semiannual yield as follows:

	n	i	PV	PMT	FV
Inputs	6		-1001.64	6.25	1000
Compute		.5971			

Now compute i and you should get an answer of 1.194%.

Let's now redo this calculation but recognize that the coupons are paid semiannually. Instead of three annual coupon payments of \$12.50, the bond makes six semiannual

This yield to maturity, of course, is a 6-month yield, not an annual one. Bond dealers would typically annualize the semiannual rate by doubling it, so the yield to maturity would be quoted as $.5971 \times 2 = 1.1942\%$.

Self-Test Questions


Provided in each chapter, these helpful questions enable students to check their understanding as they read. Answers are worked out at the end of each chapter.


6.4 Self-Test

Suppose that the market interest rate is 4% and then drops overnight to 2%. Calculate the present values of the 1.25%, 3-year bond and of the 1.25%, 30-year bond both before and after this change in interest rates. Assume annual coupon payments. Confirm that your answers correspond with Figure 6.5. Use your financial calculator or a spreadsheet. You can find a box on bond pricing using Excel later in this chapter.

“Beyond the Page” Interactive Content and Applications

Additional resources and hands-on applications are just a click away. Students can tap or click the icons in the e-version or use the direct web links to learn more about key concepts and try out calculations, tables, and figures when they go “Beyond the Page.”

BEYOND THE PAGE
 How changes in interest rates affect long- and short-term bonds
mhhe.com/brealey9e

BEYOND THE PAGE
 Which is the longer-term bond?
mhhe.com/brealey9e

the market interest rate rises, the value of their investment falls.

A change in interest rates has only a modest impact on the present value of near-term cash flows but a much greater impact on the value of distant cash flows. Therefore, any change has a greater impact on the price of long-term bonds than the price of short-term bonds. For example, compare the two curves in Figure 6.5. The blue line shows how the value of the 3-year, 1.25% coupon bond varies with the interest rate. The green line shows how the price of a 30-year, 1.25% bond varies. You can see that the 30-year bond is more sensitive to interest rate fluctuations than the 3-year bond. This should not surprise you. If you buy a 3-year bond and rates then rise, you will be stuck with a bad deal—you could have got a better interest rate if you had waited. However, think how much worse it would be if the loan had been for 30 years rather than 3 years. The longer the loan, the more income you have lost by accepting what turns out to be a low interest rate. This shows up in a bigger decline in the price of the longer-term bond. Of course, there is a flip side to this effect, which you can also see from Figure 6.5. When interest rates fall, the longer-term bond responds with a greater increase in price.

Web Exercises

Select chapters include Web Exercises that allow students to utilize the Internet to apply their knowledge and skills with real-world companies.

WEB EXERCISES

1. Log on to www.investopedia.com to find a simple calculator for working out bond prices. (Start by clicking the *Investing* link.) Check whether a change in yield has a greater effect on the price of a long-term or a short-term bond.
2. When we plotted the yield curve in Figure 6.7, we used the prices of Treasury strips. You can find current prices of strips by logging on to *The Wall Street Journal* website (www.wsj.com) and clicking on *Market, Market Data*, and then *Rates*. Try plotting the yields on stripped coupons against maturity. Do they currently increase or decline with maturity? Can you explain why? You can also use *The Wall Street Journal* site to compare the yields on nominal Treasury bonds with those on TIPS. Suppose that you are confident that inflation will be 3% per year. Which bonds are the better buy?
3. You can find the most recent bond rating for many companies by logging on to finance.yahoo.com and going to the Bond Center. Find the bond rating for some major companies. Were they investment-grade or below?
4. In Figure 6.9, we showed how bonds with greater credit risk have promised higher yields to maturity. This yield spread goes up when the economic outlook is particularly uncertain. You can check how the extra yield on a lower-grade bond has changed today by logging on to

Minicases

Integrated minicases allow students to apply their knowledge to relatively complex, practical problems and typical real-world scenarios.

MINICASE

Old Alfred Road, who is well-known to drivers on the Maine Turnpike, has reached his 70th birthday and is ready to retire. Mr. Road has no formal training in finance but has saved his money and invested carefully.

Mr. Road owns his home—the mortgage is paid off—and does not want to move. He is a widower, and he wants to bequeath the house and any remaining assets to his daughter.

He has accumulated savings of \$180,000, conservatively invested. The investments are yielding 9% interest. Mr. Road also has \$12,000 in a savings account at 5% interest. He wants to keep the savings account intact for unexpected expenses or emergencies.

Mr. Road’s basic living expenses now average about \$1,500 per inflation. That is, they will be automatically increased in proportion to changes in the consumer price index.

Mr. Road’s main concern is with inflation. The inflation rate has been below 3% recently, but a 3% rate is unusually low by historical standards. His Social Security payments will increase with inflation, but the interest on his investment portfolio will not.

What advice do you have for Mr. Road? Can he safely spend all the interest from his investment portfolio? How much could he withdraw at year-end from that portfolio if he wants to keep its real value intact?

Suppose Mr. Road will live for 20 more years and is willing to use up all of his investment portfolio over that period. He also

Supplements

In addition to the overall refinement and improvement of the text material, considerable effort was put into developing an exceptional supplement package to provide students and instructors with an abundance of teaching and learning resources.

Instructor Library

The Connect Instructor Library is your repository for additional resources to improve student engagement in and out of class. You can select and use any asset that enhances your lecture. The Connect Instructor Library includes all of the instructor supplements for this text.

Solutions Manual

Mishal Rawaf worked with the authors to prepare this resource containing detailed and thoughtful solutions to all the end-of-chapter problems.

Instructor's Manual

This manual, updated and enhanced by Matthew Will at the University of Indianapolis, includes a descriptive preface containing alternative course formats and case teaching methods, a chapter overview and outline, key terms and concepts, a description of the PowerPoint slides, video teaching notes, related web links, and pedagogical ideas.

Test Bank

Author Richard Brealey has thoroughly reviewed and revised the test bank, adding new questions and ensuring that all of the content is closely correlated to the text. More than 2,000 true/false, multiple-choice, and discussion questions/problems are available to the instructor at varying levels of difficulty and comprehension. All questions are tagged by learning objective, topic, AACSB category, and Bloom's Taxonomy level. Complete answers are provided for all test questions and problems. The test bank is available as downloadable Word files, and tests can also be created online within McGraw-Hill's Connect or through TestGen.

TestGen is a complete, state-of-the-art test generator and editing application software that allows instructors to quickly and easily select test items from McGraw-Hill's

test bank content. The instructors can then organize, edit, and customize questions and answers to rapidly generate tests for paper or online administration. Questions can include stylized text, symbols, graphics, and equations that are inserted directly into questions using built-in mathematical templates. TestGen's random generator provides the option to display different text or calculated number values each time questions are used. With both quick-and-simple test creation and flexible and robust editing tools, TestGen is a complete test generator system for today's educators.

PowerPoint Presentations

These visually stimulating slides have been fully updated by Matthew Will, with colorful graphs, charts, and lists. The slides can be edited or manipulated to fit the needs of a particular course.

Beyond the Page Content

The authors have created a wealth of additional examples, explanations, and applications, available for quick access by instructors and students. Each "Beyond the Page" feature is called out in the text with an icon that links directly to the content.

Excel Solutions and Templates

Excel templates are available in Connect for select exhibits and various end-of-chapter problems that have been set as Excel spreadsheets. They correlate with specific concepts in the text and allow students to work through financial problems and gain experience using spreadsheets. Also refer to the valuable Spreadsheet Solutions Boxes that are sprinkled throughout the text for some helpful prompts on working in Excel.

Student Study Center

The Connect Student Study Center is the place for students to access additional resources. The Student Study Center:

- Offers students quick access to the Beyond the Page features, Excel files and templates, lectures, eBooks, and more.
- Provides instant practice material and study questions, easily accessible on the go.

Student Progress Tracking

Connect keeps instructors informed about how each student, section, and class is performing, allowing for more productive use of lecture and office hours. The progress-tracking function enables you to:

- View scored work immediately and track individual or group performance with assignment and grade reports.
- Access an instant view of student or class performance relative to learning objectives.
- Collect data and generate reports required by many accreditation organizations, such as AACSB and AICPA.

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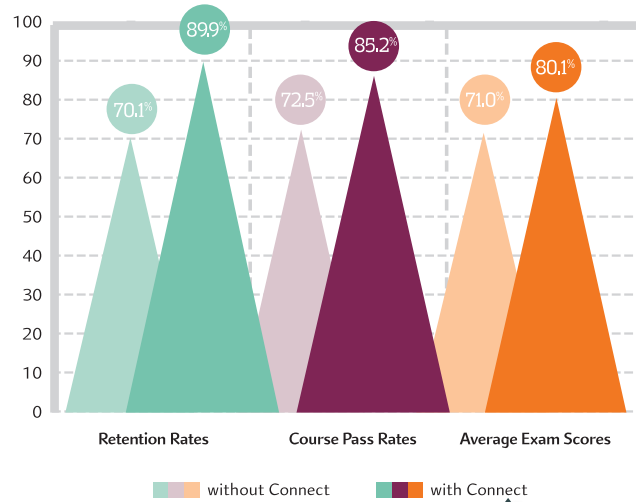
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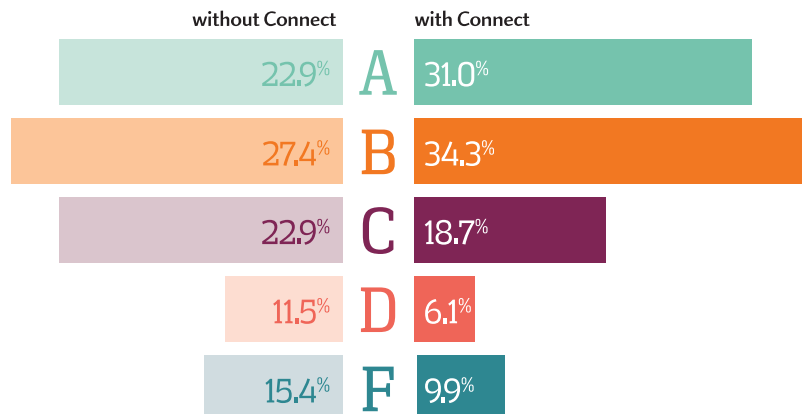
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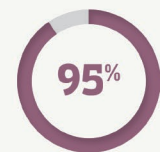
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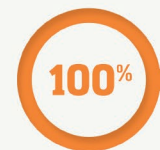
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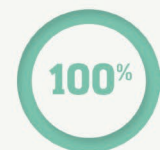
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Fundamentals of
Corporate Finance

Ninth EDITION

1

Goals and Governance of the Corporation

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- 1-1** Give examples of the investment and financing decisions that financial managers make.
- 1-2** Distinguish between real and financial assets.
- 1-3** Cite some of the advantages and disadvantages of organizing a business as a corporation.
- 1-4** Describe the responsibilities of the CFO, treasurer, and controller.
- 1-5** Explain why maximizing market value is the natural financial goal of the corporation.
- 1-6** Understand what is meant by “agency problems,” and cite some of the ways that corporate governance helps mitigate agency problems.
- 1-7** Explain why unethical behavior does not maximize market value.

RELATED WEBSITES FOR THIS CHAPTER CAN BE FOUND IN CONNECT.



To grow from small beginnings to a major corporation, FedEx needed to make good investment and financing decisions.
Frank Kovalchek via Alaskan Dude/Flickr/CC BY 2.0

To carry on business, a corporation needs an almost endless variety of assets. Some are tangible assets such as plant and machinery, office buildings, and vehicles; others are intangible assets such as brand names and patents. Corporations finance these assets by borrowing, by reinvesting profits back into the firm, and by selling additional shares to the firm's shareholders.

Financial managers, therefore, face two broad questions. First, what investments should the corporation make? Second, how should it pay for these investments? *Investment decisions* spend money. *Financing decisions* raise money for investment.

We start this chapter with examples of recent investment and financing decisions by major U.S. and foreign corporations. We review what a corporation is and describe the roles of its top financial managers. We then turn to the financial goal of the corporation, which is usually expressed as *maximizing value*, or at least

adding value. Financial managers add value whenever the corporation can invest to earn a higher return than its shareholders can earn for themselves.

But managers are human beings; they cannot be perfect servants who always and everywhere maximize value. We will consider the conflicts of interest that arise in large corporations and how corporate governance helps to align the interests of managers and shareholders.

If we ask managers to maximize value, can the corporation also be a good citizen? Won't the managers be tempted to try unethical or illegal financial tricks? They may sometimes be tempted, but wise managers realize that such tricks are not just dishonest; they almost always destroy value, not increase it. More challenging are the gray areas where the line between ethical and unethical financial actions is hard to draw.

Finally, we look ahead to the rest of this book and look back to some entertaining snippets of financial history.

1.1 Investment and Financing Decisions

Fred Smith is best known today as the founder of FedEx. But in 1965 he was still a sophomore at Yale, where he wrote an economics term paper arguing that delivery systems were not keeping up with increasing needs for speed and dependability.¹ He later joined his stepfather at a struggling equipment and maintenance firm for air carriers. He observed firsthand the difficulties of shipping spare parts on short notice. He saw the need for an integrated air and ground delivery system with a central hub that could connect a large number of points more efficiently than a point-to-point delivery system. In 1971, at the age of 27, Smith founded Federal Express.

Like many start-up firms, Federal Express flirted again and again with failure. Smith and his family had an inheritance of a few million dollars, but this was far from enough. The young company needed to purchase and retrofit a small fleet of aging Dassault Falcon jets; build a central-hub facility; and hire and train pilots, delivery, and office staff. The initial source of capital was short-term bank loans. Because of the company's shaky financial position, the bank demanded that the planes be used as collateral and that Smith personally guarantee the loan with his own money.

In April 1973, the company went live with a fleet of 14 jets, servicing 25 U.S. cities out of its Memphis hub. By then, the company had spent \$25 million and was effectively flat broke, without enough funds to pay for its weekly delivery of jet fuel. In desperation, it managed to acquire a bank loan for \$23.7 million. This loan had to be backed by a guarantee from General Dynamics, which in return acquired an option to buy the company. (Today, General Dynamics must regret that it never exercised this option.)

In November of that year, the company finally achieved some financial stability when it raised \$24.5 million from venture capitalists, investment firms that provide funds and advice to young companies in return for a partial ownership share. Eventually, venture capitalists invested about \$90 million in Federal Express.

In 1977, private firms were allowed for the first time to compete with the Postal Service in package delivery. Federal Express responded by expanding its operations. It acquired seven Boeing 727s, each with about seven times the capacity of the Falcon jets. To pay for these new investments, Federal Express raised about \$19 million by selling shares of stock to the general public in an *initial public offering* (IPO). The new stockholders became part-owners of the company in proportion to the number of shares they purchased.

From this point on, success followed success, and the company invested heavily to expand its air fleet as well as its supporting infrastructure. It introduced an automated shipping system and a bar-coded tracking system. In 1994, it launched its fedex.com website for online package tracking. It opened several new hubs across the United States as well as in Canada, France, the Philippines, and China. In 2007, FedEx (as the company was now called) became the world's largest airline measured by number of planes. FedEx also invested in other companies, capped by the acquisition of Kinko's for \$2.4 billion in 2004. By 2016, FedEx had 325,000 employees, annual revenue of \$49 billion, and a stock market value of almost \$40 billion. Its name had become a verb—to “FedEx a package” was to ship it overnight.

Even in retrospect, FedEx's success was hardly a sure thing. Fred Smith's idea was inspired, but its implementation was complex and difficult. FedEx had to make *good investment decisions*. In the beginning, these decisions were constrained by lack of financing. For example, used Falcon jets were the only option, given the young company's precarious financial position. At first it could service only a short list of the major cities. As the company grew, its investment decisions became more complex. Which type of planes should it buy? When should it expand coverage to Europe and

¹ Legend has it that Smith received a grade of C on this paper. In fact, he doesn't remember the grade.

Asia? How many operations hubs should it build? What computer and tracking systems were necessary to keep up with the increasing package volume and geographic coverage? Which companies should it acquire as it expanded its range of services?

FedEx also needed to make *good financing decisions*. For example, how should it raise the money it needed for investment? In the beginning, these choices were limited to family money and bank loans. As the company grew, its range of choices expanded. Eventually it was able to attract funding from venture capitalists, but this posed new questions. How much cash did the firm need to raise from the venture capitalists? How big a share in the firm would the venture capitalists demand in return? The initial public offering of stock prompted similar questions. How many shares should the company try to sell? At what price? As the company grew, it raised more funds by borrowing money from its banks and by selling publicly traded bonds to investors. At each point, it needed to decide on the proper form and terms of financing as well as the amounts to be raised.

In short, FedEx needed to be *good at finance*. It had a head start over potential competitors, but a series of bad financial decisions would have sunk the company. No two companies' histories are the same, but, like FedEx, all successful companies must make good investment and financing decisions. And, as with FedEx, those decisions range from prosaic and obvious to difficult and strategically crucial.

Let's widen our discussion. Table 1.1 gives an example of a recent investment and financing decision for 11 corporations. Seven are U.S. corporations. Four are foreign: Virgin Atlantic's headquarters are in London, TransCanada's in Calgary, LVMH's in Paris,² and Vale's in Rio de Janeiro. We have chosen very large public corporations that you are likely to be familiar with. You may have flown with Virgin Atlantic, shopped at Walmart, or posted a picture on Facebook.

TABLE 1.1 Examples of recent investment and financing decisions by major public corporations

Company	Recent Investment Decisions	Recent Financing Decisions
Entergy	Purchased the Union Power generating station near El Dorado, Arkansas, for \$948 million.	Entergy's Arkansas subsidiary issued \$325 million of bonds maturing in 2026.
ExxonMobil	Cut total capital investment for 2016 to \$34 billion, down 12% because of plummeting oil prices.	Eliminated share repurchases for 2016, thus reducing payout to stockholders.
Facebook	Spent \$60 million to acquire Pebbles, an Israeli company developing virtual reality software.	Financed capital investment and acquisitions with operating cash flow.
Ford	Announced plan to invest \$1 billion to build an assembly plant in Mexico.	Ford's credit subsidiary issued \$3.5 billion in long-term debt.
John Deere	Total capital investment fell to \$655 million, after completing investments for producing clean-burning diesel engines.	Maintained credit lines with banks that allowed it to borrow up to \$7.2 billion.
LVMH	Acquired Luxola, a Singapore cosmetics e-commerce start-up.	Repaid €750 million in debt issued in 2009 and 2011.
Procter & Gamble	Spent \$2.0 billion on research and development in 2015.	Spent \$4.6 billion to repurchase its common stock.
TransCanada	Announced purchase of Columbia Pipeline Group for \$10.2 billion.	Will pay Columbia shareholders in cash and also assume \$2.8 billion of existing Columbia debt.
Vale	Started up the Caue Itabiritos iron-ore project after capital investment of \$927 million.	Announced plan to issue at least \$750 million of 30-year debt.
Virgin Atlantic Airlines	Ordered 12 new Airbus A350-1000 planes.	Used value of its landing slots at London's Heathrow Airport as collateral for a £220 million bond issue.
Walmart	Announced plans to open more than 200 new stores in 2016.	Raised its annual dividend to \$2.00 a share.

² LVMH (Moët Hennessy Louis Vuitton) markets perfumes and cosmetics, wines and spirits, leather goods, watches, and other luxury products. And, yes, we know what you are thinking, but "LVMH" really is short for "Moët Hennessy Louis Vuitton."

Take a look at the decisions now. We think you will agree that they appear sensible—at least there is nothing obviously wrong with them. But if you are new to finance, it may be difficult to think about why these companies made these decisions and not others.

The Investment (Capital Budgeting) Decision

capital budgeting or capital expenditure (CAPEX) decision
Decision to invest in tangible or intangible assets.

Investment decisions, such as those shown in Table 1.1, are also called **capital budgeting or capital expenditure (CAPEX) decisions**. Some of the investments in the table, such as Walmart’s new stores or Virgin Atlantic’s new planes, involve tangible assets—assets that you can touch and kick. Others involve intangible assets, such as research and development (R&D), advertising, and the design of computer software. For example, major pharmaceutical manufacturers invest billions every year on R&D for new drugs.

Most of the investments in Table 1.1 have long-term consequences. For example, the planes acquired by Virgin Atlantic may still be flying 20 or 30 years from now. Other investments may pay off in only a few months. For example, with the approach of the Christmas holidays, Walmart spends nearly \$50 billion to stock up its warehouses and retail stores. As the goods are sold over the following months, the company recovers its investment in these inventories.

The world of business can be intensely competitive, and corporations prosper only if they can keep launching new products or services. In some cases, the costs and risks of doing so are amazingly large. For example, the cost of developing the Gorgon natural gas field in Australia has been estimated at \$54 billion. It’s not surprising that this cost is being shared among several major energy companies. But do not think of companies as making billion-dollar investments on a daily basis. Most investment decisions are smaller, such as the purchase of a truck, machine tool, or computer system. Corporations make thousands of such investments each year. The cumulative amount of these small expenditures can be just as large as the occasional jumbo investments, such as those shown in Table 1.1.

Not all investments succeed. In October 2011 Hewlett-Packard (HP) paid \$11.1 billion to acquire the British software company Autonomy. Just 13 months later, HP wrote down the value of this investment by \$8.8 billion. HP claimed that it was misled by improper accounting at Autonomy. Nevertheless, the Autonomy acquisition was a disastrous investment for HP. HP’s CEO was fired in short order.

There are no free guarantees in finance. But you can tilt the odds in your favor if you learn the tools of investment analysis and apply them intelligently. We cover these tools in detail later in this book.

The Financing Decision

financing decision
Decision on the sources and amounts of financing.

The financial manager’s second main responsibility is to raise the money that the firm requires for its investments and operations. This is the **financing decision**. When a company needs to raise money, it can invite investors to put up cash in exchange for a share of future profits, or it can promise to pay back the investors’ cash plus a fixed rate of interest. In the first case, the investors receive shares of stock and become shareholders, part-owners of the corporation. The investors in this case are referred to as *equity investors*, who contribute *equity financing*. In the second case, the investors are lenders, that is, *debt investors*, who one day must be repaid. The choice between debt and equity financing is often called the *capital structure decision*. Here “capital” refers to the firm’s sources of long-term financing. A firm that is seeking to raise long-term financing is said to be “raising capital.”

real assets
Assets used to produce goods and services.

financial assets
Financial claims to the income generated by the firm’s real assets.

Notice the essential difference between the investment and financing decisions. When the firm invests, it acquires **real assets**, which are then used to produce the firm’s goods and services. The firm finances its investment in real assets by issuing **financial assets** to investors. A share of stock is a financial asset, which has value as a

claim on the firm's real assets and on the income that those assets will produce. A bank loan is a financial asset also. It gives the bank the right to get its money back plus interest. If the firm's operations can't generate enough income to repay the bank, the bank can force the firm into bankruptcy and stake a claim on its real assets. Financial assets that can be purchased and traded by investors in public markets are called *securities*. The shares of stock issued by the public corporations in Table 1.1 are all securities. Entergy's 10-year bond in Table 1.1 is a security. But a bank loan from JPMorgan to Entergy is not called a security unless the bank resells the loan to public investors.

The firm can issue an almost endless variety of financial assets. Suppose it decides to borrow. It can issue debt to investors, or it can borrow from a bank. It can borrow for 1 year or 20 years. If it borrows for 20 years, it can reserve the right to pay off the debt early if interest rates fall. It can borrow in Paris, receiving and promising to repay euros, or it can borrow dollars in New York. (As Table 1.1 shows, Ford chose to borrow U.S. dollars, but it could have borrowed euros or Japanese yen instead.)

In some ways, financing decisions are less important than investment decisions. Financial managers say that "value comes mainly from the investment side of the balance sheet." Also, the most successful corporations sometimes have the simplest financing strategies. Take Microsoft as an example. It is one of the world's most valuable corporations. In early 2016, Microsoft shares traded for \$53 each. There were 7.91 billion shares outstanding. Therefore Microsoft's market value—its *market capitalization* or *market cap*—was $53 \times 7.91 = \$419$ billion. Where did this market value come from? It came from Microsoft's products, from its brand name and worldwide customer base, from its R&D, and from its ability to make profitable future investments. It did not come from sophisticated financing. Microsoft's financing strategy is very simple: It finances almost all investment by retaining and reinvesting operating cash flow.

Financing decisions may not add much value compared to good investment decisions, but they can destroy value if they are stupid or ambushed by bad news. For example, when a consortium of investment companies bought the energy giant TXU in 2007, the company took on an additional \$40 billion in debt. This may not have been a stupid decision, but it did prove fatal. The consortium did not foresee the expansion of shale gas production and the resulting sharp fall in natural gas and electricity prices, and in April 2014 the company (renamed Energy Future Holdings) was bankrupt.

1.1 Self-Test

Are the following capital budgeting or financing decisions? (*Hint: In one case the answer is "both."*)

- Intel decides to spend \$7 billion to develop a new microprocessor factory.
- BMW borrows 350 million euros (€350 million) from Deutsche Bank.
- Royal Dutch Shell constructs a pipeline to bring natural gas onshore from a production platform in Australia.
- Avon spends €200 million to launch a new range of cosmetics in European markets.
- Pfizer issues new shares to buy a small biotech company.

We have emphasized the financial manager's responsibility for two decisions:

The investment decision = purchase of real assets

The financing decision = sale of financial assets

But this is an oversimplification because the financial manager is also involved in many other day-to-day activities that are essential to the smooth operation of a business.

For example, if the firm sells goods or services on credit, it needs to make sure that its customers pay on time. Corporations that operate internationally must constantly transfer cash from one currency to another. And the manager must keep an eye on the risks that the firm runs and ensure that they don't land the firm in a pickle.

1.2 Self-Test

Which of the following are financial assets, and which are real assets?

- A patent.
- A share of stock issued by Wells Fargo Bank.
- A blast furnace in a steelmaking factory.
- A mortgage loan taken out to help pay for a new home.
- After a successful advertising campaign, potential customers trust FedEx to deliver packages promptly and reliably.
- An IOU ("I owe you") from your brother-in-law.

1.2 What Is a Corporation?

We have been referring to "corporations." But before going too far or too fast, we need to offer some basic definitions.

A **corporation** is a distinct, permanent legal entity. Suppose you decide to create a new corporation.³ You would work with a lawyer to prepare *articles of incorporation*, which set out the purpose of the business and how it is to be financed, managed, and governed. These articles must conform to the laws of the state in which the business is incorporated. For many purposes, the corporation is considered a resident of its state. For example, it can enter into contracts, borrow or lend money, and sue or be sued. It pays its own taxes (but it cannot vote!).

A corporation's owners are called *shareholders* or *stockholders*.⁴ The shareholders do not directly own the business's real assets (factories, oil wells, stores, etc.). Instead they have indirect ownership via financial assets (the shares of the corporation).

A corporation is legally distinct from the shareholders. Therefore, the shareholders have **limited liability** and cannot be held personally responsible for the corporation's debts. When the U.S. financial corporation Lehman Brothers failed in 2008, no one demanded that its stockholders put up more money to cover Lehman's massive debts. Shareholders can lose their entire investment in a corporation, but no more.

corporation

A business organized as a separate legal entity owned by stockholders.

limited liability

The owners of a corporation are not personally liable for its obligations.

Example

1.1 ▶

Business Organization

Suppose you buy a building and open a restaurant. You have invested in the building itself, kitchen equipment, dining-room furnishings, plus various other assets. If you do not incorporate, you own these assets personally, as the *sole proprietor* of the business. If you have borrowed money from a bank to start the business, then you are personally responsible for this debt. If the business loses money and cannot pay the bank, then the bank can demand

³ In the United States, corporations are identified by the label "Corporation," "Incorporated," or "Inc.," as in *Caterpillar Inc.* The United Kingdom identifies public corporations by "plc" (short for "Public Limited Corporation"). French corporations have the suffix "SA" ("Société Anonyme"). The corresponding labels in Germany are "GmbH" ("Gesellschaft mit beschränkter Haftung") and "AG" ("Aktiengesellschaft").

⁴ "Shareholder" and "stockholder" mean exactly the same thing and are used interchangeably.

that you raise cash by selling other assets—your car or house, for example—in order to repay the loan. But if you incorporate the restaurant business, and then the corporation borrows from the bank, your other assets are shielded from the restaurant's debts. Of course, incorporation also means that the bank will be more cautious in lending, because the bank will have no recourse to your other assets.⁵

Notice that if you incorporate your business, you exchange direct ownership of its real assets (the building, kitchen equipment, etc.) for indirect ownership via financial assets (the shares of the new corporation). ■

When a corporation is first established, its shares may be privately owned by a small group of investors, perhaps the company's managers and a few backers. In this case, the shares are not publicly traded and the company is *closely held*. Eventually, when the firm grows and new shares are issued to raise additional capital, its shares are traded in public markets such as the New York Stock Exchange. Such corporations are known as *public companies*. Most well-known corporations in the United States are public companies with widely dispersed shareholdings. In other countries, it is more common for large corporations to remain in private hands, and many public companies may be controlled by just a handful of investors.

A large public corporation may have hundreds of thousands of shareholders, who together own the business. An individual may have 100 shares, receive 100 votes, and be entitled to a tiny fraction of the firm's income and value. On the other hand, a pension fund or insurance company may own millions of shares, receive millions of votes, and have a correspondingly large stake in the firm's performance.

Public shareholders cannot possibly manage or control the corporation directly. Instead, they elect a *board of directors*, who in turn appoint the top managers and monitor their performance. This *separation of ownership and control* gives corporations permanence. Even if managers quit or are dismissed, the corporation survives. Today's stockholders can sell all their shares to new investors without disrupting the operations of the business. Corporations can, in principle, live forever, and in practice they may survive many human lifetimes. One of the oldest corporations is the Hudson's Bay Company, which was formed in 1670 to profit from the fur trade between northern Canada and England. The company still operates as one of Canada's leading retail chains.

The separation of corporate ownership and control can also have a downside, for it can open the door for managers and directors to act in their own interests rather than in the stockholders' interest. We return to this problem later in the chapter.

There are other disadvantages to being a corporation. One is the cost, in both time and money, of managing the corporation's legal machinery. These costs are particularly burdensome for small businesses.

There is also an important tax drawback to corporations in the United States. Because the corporation is a separate legal entity, it is taxed separately. So corporations pay tax on their profits, and shareholders are taxed again when they receive dividends from the company or sell their shares at a profit. By contrast, income generated by businesses that are not incorporated is taxed just once as personal income.⁶

Other Forms of Business Organization

Corporations do not have to be prominent, multinational businesses such as those listed in Table 1.1. You can organize a local plumbing contractor or barber shop as a corporation if you want to take the trouble. But most corporations are larger

BEYOND THE PAGE



S-corporations

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⁵ The bank may ask you to put up personal assets as collateral for the loan to your restaurant corporation. But it has to ask and get your agreement. It doesn't have to ask if your business is a sole proprietorship.

⁶ The U.S. tax system is somewhat unusual in this respect. To avoid taxing the same income twice, many other countries give shareholders at least some credit for the taxes that the corporation has already paid.