PART ONE

VALUE

IN 2001, DUPONT announced plans to build a new production line at its plant in Richmond, Virginia. The $50 million investment would increase DuPont's output of Kevlar high-strength fiber by 15 percent. Meanwhile, in New Orleans Procter & Gamble had started work on a 100,000 square foot facility to produce Folger's coffee. This was expected to open in 2002 at a cost of $100 million.

What was special about these two developments? The answer is "nothing." We cite them because they are typical of the investments in new products and equipment that U.S. companies are making every day.

Presumably, DuPont and Procter & Gamble decided to undertake the investments because they thought that the new plant would be worth more than it cost. But that raises an obvious question. How can firms calculate what an investment is worth when its returns may stretch 10, 20, or more years into the future?

This is the topic of Part One. Chapter 1 sets the scene by showing how businesses are organized and the role that the financial manager plays in evaluating investments and finding money to pay for them. Chapter 2 starts to build a theory of value. By the end of Chapter 6, you should be able to tackle a standard investment decision such as those faced by DuPont or Procter & Gamble.

CHAPTER ONE

FINANCE AND THE FINANCIAL MANAGER

THIS BOOK IS about financial decisions made by corporations. We should start by saying what these decisions are and why they are important.

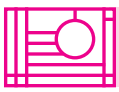
Corporations face two broad financial questions: What investments should the firm make? and How should it pay for those investments? The first question involves spending money; the second involves raising it.

The secret of success in financial management is to increase value. That is a simple statement, but not very helpful. It is like advising an investor in the stock market to "Buy low, sell high." The problem is how to do it.

There may be a few activities in which one can read a textbook and then do it, but financial management is not one of them. That is why finance is worth studying. Who wants to work in a field where there is no room for judgment, experience, creativity, and a pinch of luck? Although this book cannot supply any of these items, it does present the concepts and information on which good financial decisions are based, and it shows you how to use the tools of the trade of finance.

We start in this chapter by explaining what a corporation is and introducing you to the responsibilities of its financial managers. We will distinguish *real assets* from *financial assets* and *capital investment decisions* from *financing decisions*. We stress the importance of financial markets, both national and international, to the financial manager.

Finance is about money and markets, but it is also about people. The success of a corporation depends on how well it harnesses everyone to work to a common end. The financial manager must appreciate the conflicting objectives often encountered in financial management. Resolving conflicts is particularly difficult when people have different information. This is an important theme which runs through to the last chapter of this book. In this chapter we will start with some definitions and examples.



1.1 WHAT IS A CORPORATION?

Not all businesses are corporations. Small ventures can be owned and managed by a single individual. These are called *sole proprietorships.* In other cases several people may join to own and manage a *partnership.*[1] However, this book is about *corporate* finance. So we need to explain what a **corporation** is.

Almost all large and medium-sized businesses are organized as corporations. For example, General Motors, Bank of America, Microsoft, and General Electric are corporations. So are overseas businesses, such as British Petroleum, Unilever, Nestlé, Volkswagen, and Sony. In each case the firm is owned by stockholders who hold shares in the business.

When a corporation is first established, its shares may all be held 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 will be widely traded. Such corporations are known as *public companies.*

[1]Many professional businesses, such as accounting and legal firms, are partnerships. Most large investment banks started as partnerships, but eventually these companies and their financing needs grew too large for them to continue in this form. Goldman Sachs, the last of the leading investment-bank partnerships, issued shares and became a public corporation in 1998.

Most well-known corporations in the United States are public companies. In many other countries, it's common for large companies to remain in private hands.

By organizing as a corporation, a business can attract a wide variety of investors. Some may hold only a single share worth a few dollars, cast only a single vote, and receive a tiny proportion of profits and dividends. Shareholders may also include giant pension funds and insurance companies whose investment may run to millions of shares and hundreds of millions of dollars, and who are entitled to a correspondingly large number of votes and proportion of profits and dividends.

Although the stockholders own the corporation, they do not manage it. Instead, they vote to elect a *board of directors.* Some of these directors may be drawn from top management, but others are non-executive directors, who are not employed by the firm. The board of directors represents the shareholders. It appoints top management and is supposed to ensure that managers act in the shareholders' best interests.

This *separation of ownership and management* gives corporations permanence.[2] Even if managers quit or are dismissed and replaced, the corporation can survive, and today's stockholders can sell all their shares to new investors without disrupting the operations of the business.

Unlike partnerships and sole proprietorships, corporations have **limited liability,** which means that stockholders cannot be held personally responsible for the firm's debts. If, say, General Motors were to fail, no one could demand that its shareholders put up more money to pay off its debts. The most a stockholder can lose is the amount he or she has invested.

Although a corporation is owned by its stockholders, it is legally distinct from them. It is based on *articles of incorporation* that set out the purpose of the business, how many shares can be issued, the number of directors to be appointed, and so on. These articles must conform to the laws of the state in which the business is incorporated.[3] For many legal purposes, the corporation is considered as a resident of its state. As a legal "person," it can borrow or lend money, and it can sue or be sued. It pays its own taxes (but it cannot vote!).

Because the corporation is distinct from its shareholders, it can do things that partnerships and sole proprietorships cannot. For example, it can raise money by selling new shares to investors and it can buy those shares back. One corporation can make a takeover bid for another and then merge the two businesses.

There are also some *disadvantages* to organizing as a corporation. Managing a corporation's legal machinery and communicating with shareholders can be time-consuming and costly. Furthermore, in the United States there is an important tax drawback. Because the corporation is a separate legal entity, it is taxed separately. So corporations pay tax on their profits, and, in addition, shareholders pay tax on any dividends that they receive from the company. The United States is unusual in this respect. To avoid taxing the same income twice, most other countries give shareholders at least some credit for the tax that the company has already paid.[4]

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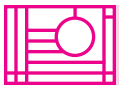
[2]Corporations can be immortal but the law requires partnerships to have a definite end. A partnership agreement must specify an ending date or a procedure for wrapping up the partnership's affairs. A sole proprietorship also will have an end because the proprietor is mortal.

[3]Delaware has a well-developed and supportive system of corporate law. Even though they may do little business in that state, a high proportion of United States corporations are incorporated in Delaware.

[4]Or companies may pay a lower rate of tax on profits paid out as dividends.



1.2 THE ROLE OF THE FINANCIAL MANAGER

To carry on business, corporations need an almost endless variety of **real assets.** Many of these assets are tangible, such as machinery, factories, and offices; others are intangible, such as technical expertise, trademarks, and patents. All of them need to be paid for. To obtain the necessary money, the corporation sells claims on its real assets and on the cash those assets will generate. These claims are called **financial assets** or **securities.** For example, if the company borrows money from the bank, the bank gets a written promise that the money will be repaid with interest. Thus the bank trades cash for a financial asset. Financial assets include not only bank loans but also shares of stock, bonds, and a dizzying variety of specialized securities.[5]

The financial manager stands between the firm's operations and the **financial (**or **capital) markets,** where investors hold the financial assets issued by the firm.[6] The financial manager's role is illustrated in Figure 1.1, which traces the flow of cash from investors to the firm and back to investors again. The flow starts when the firm sells securities to raise cash (arrow 1 in the figure). The cash is used to purchase real assets used in the firm's operations (arrow 2). Later, if the firm does well, the real assets generate cash inflows which more than repay the initial investment (arrow 3). Finally, the cash is either reinvested (arrow 4*a*) or returned to the investors who purchased the original security issue (arrow 4*b*). Of course, the choice between arrows 4*a* and 4*b* is not completely free. For example, if a bank lends money at stage 1, the bank has to be repaid the money plus interest at stage 4*b.*

Our diagram takes us back to the financial manager's two basic questions. First, what real assets should the firm invest in? Second, how should the cash for the investment be raised? The answer to the first question is the firm's **investment,** or **capital budgeting, decision.** The answer to the second is the firm's **financing decision.**

Capital investment and financing decisions are typically *separated,* that is, analyzed independently. When an investment opportunity or "project" is identified, the financial manager first asks whether the project is worth more than the capital required to undertake it. If the answer is yes, he or she then considers how the project should be financed.

But the separation of investment and financing decisions does *not* mean that the financial manager can forget about investors and financial markets when analyzing capital investment projects. As we will see in the next chapter, the fundamental financial objective of the firm is to maximize the value of the cash invested in the firm by its stockholders. Look again at Figure 1.1. Stockholders are happy to contribute cash at arrow 1 only if the decisions made at arrow 2 generate at least adequate returns at arrow 3. "Adequate" means returns at least equal to the returns available to investors outside the firm in financial markets. If your firm's projects consistently generate *in*adequate returns, your shareholders will want their money back.

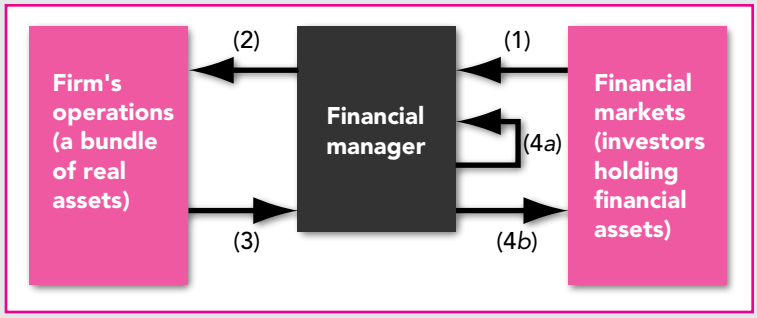
Financial managers of large corporations also need to be men and women of the world. They must decide not only *which* assets their firm should invest in but also *where* those assets should be located. Take Nestlé, for example. It is a Swiss company, but only a small proportion of its production takes place in Switzerland. Its 520 or so

[5]We review these securities in Chapters 14 and 25.

[6]You will hear financial managers use the terms *financial markets* and *capital markets* almost synonymously. But *capital markets* are, strictly speaking, the source of long-term financing only. Short-term financing comes from the *money market.* "Short-term" means less than one year. We use the term *financial markets* to refer to all sources of financing.

FIGURE 1.1

Flow of cash between financial markets and the firm's operations. Key: (1) Cash raised by selling financial assets to investors; (2) cash invested in the firm's operations and used to purchase real assets; (3) cash generated by the firm's operations; (4*a*) cash reinvested; (4*b*) cash returned to investors.



factories are located in 82 countries. Nestlé's managers must therefore know how to evaluate investments in countries with different currencies, interest rates, inflation rates, and tax systems.

The financial markets in which the firm raises money are likewise international. The stockholders of large corporations are scattered around the globe. Shares are traded around the clock in New York, London, Tokyo, and other financial centers. Bonds and bank loans move easily across national borders. A corporation that needs to raise cash doesn't have to borrow from its hometown bank. Day-to-day cash management also becomes a complex task for firms that produce or sell in different countries. For example, think of the problems that Nestlé's financial managers face in keeping track of the cash receipts and payments in 82 countries.

We admit that Nestlé is unusual, but few financial managers can close their eyes to international financial issues. So throughout the book we will pay attention to differences in financial systems and examine the problems of investing and raising money internationally.

1.3 WHO IS THE FINANCIAL MANAGER?

In this book we will use the term *financial manager* to refer to anyone responsible for a significant investment or financing decision. But only in the smallest firms is a single person responsible for all the decisions discussed in this book. In most cases, responsibility is dispersed. Top management is of course continuously involved in financial decisions. But the engineer who designs a new production facility is also involved: The design determines the kind of real assets the firm will hold. The marketing manager who commits to a major advertising campaign is also making an important investment decision. The campaign is an investment in an intangible asset that is expected to pay off in future sales and earnings.

Nevertheless there are some managers who specialize in finance. Their roles are summarized in Figure 1.2. The **treasurer** is responsible for looking after the firm's cash, raising new capital, and maintaining relationships with banks, stockholders, and other investors who hold the firm's securities.

For small firms, the treasurer is likely to be the only financial executive. Larger corporations also have a **controller,** who prepares the financial statements, manages the firm's internal accounting, and looks after its tax obligations. You can see that the treasurer and controller have different functions: The treasurer's main responsibility is to obtain and manage the firm's capital, whereas the controller ensures that the money is used efficiently.

FIGURE 1.2

Senior financial managers in large corporations.

Still larger firms usually appoint a **chief financial officer (CFO)** to oversee both the treasurer's and the controller's work. The CFO is deeply involved in financial policy and corporate planning. Often he or she will have general managerial responsibilities beyond strictly financial issues and may also be a member of the board of directors.

The controller or CFO is responsible for organizing and supervising the capital budgeting process. However, major capital investment projects are so closely tied to plans for product development, production, and marketing that managers from these areas are inevitably drawn into planning and analyzing the projects. If the firm has staff members specializing in corporate planning, they too are naturally involved in capital budgeting.

Because of the importance of many financial issues, ultimate decisions often rest by law or by custom with the board of directors. For example, only the board has the legal power to declare a dividend or to sanction a public issue of securities. Boards usually delegate decisions for small or medium-sized investment outlays, but the authority to approve large investments is almost never delegated.

1.4 SEPARATION OF OWNERSHIP AND MANAGEMENT

In large businesses separation of ownership and management is a practical necessity. Major corporations may have hundreds of thousands of shareholders. There is no way for all of them to be actively involved in management: It would be like running New York City through a series of town meetings for all its citizens. Authority has to be delegated to managers.

The separation of ownership and management has clear advantages. It allows share ownership to change without interfering with the operation of the business. It allows the firm to hire professional managers. But it also brings problems if the managers' and owners' objectives differ. You can see the danger: Rather than attending to the wishes of shareholders, managers may seek a more leisurely or luxurious

working lifestyle; they may shun unpopular decisions, or they may attempt to build an empire with their shareholders' money.

Such conflicts between shareholders' and managers' objectives create *principal–agent problems.* The shareholders are the principals; the managers are their agents. Shareholders want management to increase the value of the firm, but managers may have their own axes to grind or nests to feather. **Agency costs** are incurred when (1) managers do not attempt to maximize firm value and (2) shareholders incur costs to monitor the managers and influence their actions. Of course, there are no costs when the shareholders are also the managers. That is one of the advantages of a sole proprietorship. Owner–managers have no conflicts of interest.

Conflicts between shareholders and managers are not the only principal–agent problems that the financial manager is likely to encounter. For example, just as shareholders need to encourage managers to work for the shareholders' interests, so senior management needs to think about how to motivate everyone else in the company. In this case senior management are the principals and junior management and other employees are their agents.

Agency costs can also arise in financing. In normal times, the banks and bondholders who lend the company money are united with the shareholders in wanting the company to prosper, but when the firm gets into trouble, this unity of purpose can break down. At such times decisive action may be necessary to rescue the firm, but lenders are concerned to get their money back and are reluctant to see the firm making risky changes that could imperil the safety of their loans. Squabbles may even break out between different lenders as they see the company heading for possible bankruptcy and jostle for a better place in the queue of creditors.

Think of the company's overall value as a pie that is divided among a number of claimants. These include the management and the shareholders, as well as the company's workforce and the banks and investors who have bought the company's debt. The government is a claimant too, since it gets to tax corporate profits.

All these claimants are bound together in a complex web of contracts and understandings. For example, when banks lend money to the firm, they insist on a formal contract stating the rate of interest and repayment dates, perhaps placing restrictions on dividends or additional borrowing. But you can't devise written rules to cover every possible future event. So written contracts are incomplete and need to be supplemented by understandings and by arrangements that help to align the interests of the various parties.

Principal–agent problems would be easier to resolve if everyone had the same information. That is rarely the case in finance. Managers, shareholders, and lenders may all have different information about the value of a real or financial asset, and it may be many years before all the information is revealed. Financial managers need to recognize these *information asymmetries* and find ways to reassure investors that there are no nasty surprises on the way.

Here is one example. Suppose you are the financial manager of a company that has been newly formed to develop and bring to market a drug for the cure of toetitis. At a meeting with potential investors you present the results of clinical trials, show upbeat reports by an independent market research company, and forecast profits amply sufficient to justify further investment. But the potential investors are still worried that you may know more than they do. What can you do to convince them that you are telling the truth? Just saying "Trust me" won't do the trick. Perhaps you need to *signal* your integrity by putting your money where your mouth is. For example, investors are likely to have more confidence in your plans if they see that you and the other managers have large personal stakes in the new

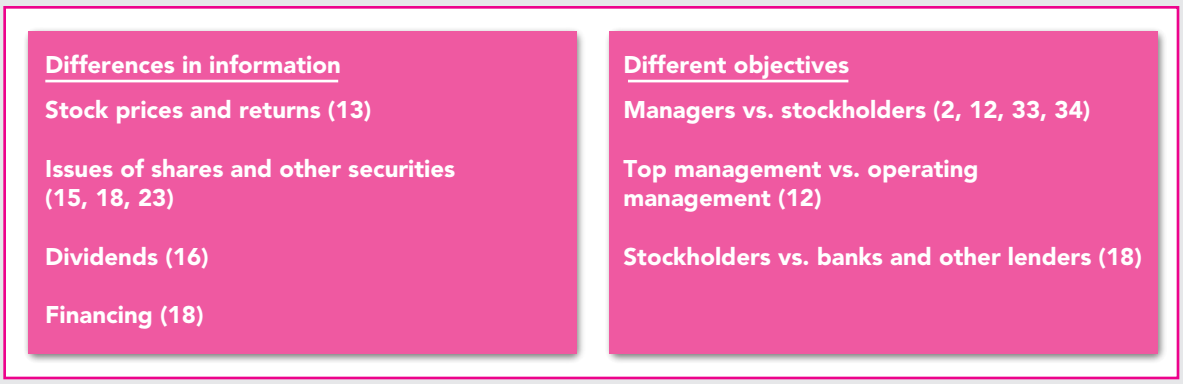


FIGURE 1.3

Differences in objectives and information can complicate financial decisions. We address these issues at several points in this book (chapter numbers in parentheses).

enterprise. Therefore your decision to invest your own money can provide information to investors about the true prospects of the firm.

In later chapters we will look more carefully at how corporations tackle the problems created by differences in objectives and information. Figure 1.3 summarizes the main issues and signposts the chapters where they receive most attention.

1.5 TOPICS COVERED IN THIS BOOK

We have mentioned how financial managers separate investment and financing decisions: Investment decisions typically precede financing decisions. That is also how we have organized this book. Parts 1 through 3 are almost entirely devoted to different aspects of the investment decision. The first topic is how to value assets, the second is the link between risk and value, and the third is the management of the capital investment process. Our discussion of these topics occupies Chapters 2 through 12.

As you work through these chapters, you may have some basic questions about financing. For example, What does it mean to say that a corporation has "issued shares"? How much of the cash contributed at arrow 1 in Figure 1.1 comes from shareholders and how much from borrowing? What types of debt securities do firms actually issue? Who actually buys the firm's shares and debt—individual investors or financial institutions? What are those institutions and what role do they play in corporate finance and the broader economy? Chapter 14, "An Overview of Corporate Financing," covers these and a variety of similar questions. This chapter stands on its own bottom—it does not rest on previous chapters. You can read it any time the fancy strikes. You may wish to read it now.

Chapter 14 is one of three in Part 4, which begins the analysis of corporate financing decisions. Chapter 13 reviews the evidence on the *efficient markets* hypothesis, which states that security prices observed in financial markets accurately reflect underlying values and the information available to investors. Chapter 15 describes how debt and equity securities are issued.

Part 5 continues the analysis of the financing decision, covering dividend policy and the mix of debt and equity financing. We will describe what happens when

firms land in financial distress because of poor operating performance or excessive borrowing. We will also consider how financing decisions may affect decisions about the firm's investment projects.

Part 6 introduces options. Options are too advanced for Chapter 1, but by Chapter 20 you'll have no difficulty. Investors can trade options on stocks, bonds, currencies, and commodities. Financial managers find options lurking in *real* assets—that is, *real options*—and in the securities the firms may issue. Having mastered options, we proceed in Part 7 to a much closer look at the many varieties of long-term debt financing.

An important part of the financial manager's job is to judge which risks the firm should take on and which can be eliminated. Part 8 looks at risk management, both domestically and internationally.

Part 9 covers financial planning and short-term financial management. We address a variety of practical topics, including short- and longer-term forecasting, channels for short-term borrowing or investment, management of cash and marketable securities, and management of accounts receivable (money lent by the firm to its customers).

Part 10 looks at mergers and acquisitions and, more generally, at the control and governance of the firm. We also discuss how companies in different countries are structured to provide the right incentives for management and the right degree of control by outside investors.

Part 11 is our conclusion. It also discusses some of the things that we *don't* know about finance. If you can be the first to solve any of these puzzles, you will be justifiably famous.

SUMMARY

In Chapter 2 we will begin with the most basic concepts of asset valuation. However, we should first sum up the principal points made in this introductory chapter.

Large businesses are usually organized as corporations. Corporations have three important features. First, they are legally distinct from their owners and pay their own taxes. Second, corporations provide limited liability, which means that the stockholders who own the corporation cannot be held responsible for the firm's debts. Third, the owners of a corporation are not usually the managers.

The overall task of the financial manager can be broken down into (1) the investment, or capital budgeting, decision and (2) the financing decision. In other words, the firm has to decide (1) what real assets to buy and (2) how to raise the necessary cash.

In small companies there is often only one financial executive, the treasurer. However, most companies have both a treasurer and a controller. The treasurer's job is to obtain and manage the company's financing, while the controller's job is to confirm that the money is used correctly. In large firms there is also a chief financial officer or CFO.

Shareholders want managers to increase the value of the company's stock. Managers may have different objectives. This potential conflict of interest is termed a principal–agent problem. Any loss of value that results from such conflicts is termed an agency cost. Of course there may be other conflicts of interest. For example, the interests of the shareholders may sometimes conflict with those of the firm's banks and bondholders. These and other agency problems become more complicated when agents have more or better information than the principals.

The financial manager plays on an international stage and must understand how international financial markets operate and how to evaluate overseas investments. We discuss international corporate finance at many different points in the chapters that follow.

FURTHER READING

Financial managers read *The Wall Street Journal (WSJ)*, *The Financial Times (FT)*, or both daily. You should too. *The Financial Times* is published in Britain, but there is a North American edition. *The New York Times* and a few other big-city newspapers have good business and financial sections, but they are no substitute for the *WSJ* or *FT*. The business and financial sections of most United States dailies are, except for local news, nearly worthless for the financial manager.

The Economist, *Business Week*, *Forbes*, and *Fortune* contain useful financial sections, and there are several magazines that specialize in finance. These include *Euromoney*, *Corporate Finance*, *Journal of Applied Corporate Finance*, *Risk*, and *CFO Magazine*. This list does not include research journals such as the *Journal of Finance*, *Journal of Financial Economics*, *Review of Financial Studies*, and *Financial Management*. In the following chapters we give specific references to pertinent research.

QUIZ

1. Read the following passage: "Companies usually buy (*a*) assets. These include both tangible assets such as (*b*) and intangible assets such as (*c*). In order to pay for these assets, they sell (*d*) assets such as (*e*). The decision about which assets to buy is usually termed the (*f*) or (*g*) decision. The decision about how to raise the money is usually termed the (*h*) decision." Now fit each of the following terms into the most appropriate space: *financing*, *real*, *bonds*, *investment*, *executive airplanes*, *financial*, *capital budgeting*, *brand names*.
2. Vocabulary test. Explain the differences between:
   a. Real and financial assets.
   b. Capital budgeting and financing decisions.
   c. Closely held and public corporations.
   d. Limited and unlimited liability.
   e. Corporation and partnership.
3. Which of the following are real assets, and which are financial?
   a. A share of stock.
   b. A personal IOU.
   c. A trademark.
   d. A factory.
   e. Undeveloped land.
   f. The balance in the firm's checking account.
   g. An experienced and hardworking sales force.
   h. A corporate bond.
4. What are the main *disadvantages* of the corporate form of organization?
5. Which of the following statements more accurately describe the treasurer than the controller?
   a. Likely to be the only financial executive in small firms.
   b. Monitors capital expenditures to make sure that they are not misappropriated.
   c. Responsible for investing the firm's spare cash.
   d. Responsible for arranging any issue of common stock.
   e. Responsible for the company's tax affairs.
6. Which of the following statements always apply to corporations?
   a. Unlimited liability.
   b. Limited life.
   c. Ownership can be transferred without affecting operations.
   d. Managers can be fired with no effect on ownership.
   e. Shares must be widely traded.
7. In most large corporations, ownership and management are separated. What are the main implications of this separation?
8. What are agency costs and what causes them?