

CHAPTER 1

THE FOUNDATIONS

It's all corporate finance.

My unbiased view of the world

Every decision made in a business has financial implications, and any decision that involves the use of money is a corporate financial decision. Defined broadly, everything that a business does fits under the rubric of corporate finance. It is, in fact, unfortunate that we even call the subject corporate finance, because it suggests to many observers a focus on how large corporations make financial decisions and seems to exclude small and private businesses from its purview. A more appropriate title for this book would be *Business Finance*, because the basic principles remain the same, whether one looks at large, publicly traded firms or small, privately run businesses. All businesses have to invest their resources wisely, find the right kind and mix of financing to fund these investments, and return cash to the owners if there are not enough good investments.

In this chapter, we will lay the foundation for the rest of the book by listing the three fundamental principles that underlie corporate finance—the investment, financing, and dividend principles—and the objective of firm value maximization that is at the heart of corporate financial theory.

The Firm: Structural Set-Up

In the chapters that follow, we will use **firm** generically to refer to any business, large or small, manufacturing or service, private or public. Thus, a corner grocery store and Microsoft are both firms.

The firm's investments are generically termed **assets**. Although assets are often categorized by accountants into fixed assets, which are long-lived, and current assets, which are short-term, we prefer a different categorization. The assets that the firm has already invested in are called **assets in place**, whereas those assets that the firm is

expected to invest in the future are called **growth assets**. Though it may seem strange that a firm can get value from investments it has not made yet, high-growth firms get the bulk of their value from these yet-to-be-made investments.

To finance these assets, the firm can raise money from two sources. It can raise funds from investors or financial institutions by promising investors a fixed claim (interest payments) on the cash flows generated by the assets, with a limited or no role in the day-to-day running of the business. We categorize this type of financing to be **debt**. Alternatively, it can offer a residual claim on the cash flows (i.e., investors can get what is left over after the interest payments have been made) and a much greater role in the operation of the business. We call this **equity**. Note that these definitions are general enough to cover both private firms, where debt may take the form of bank loans and equity is the owner’s own money, as well as publicly traded companies, where the firm may issue bonds (to raise debt) and common stock (to raise equity).

Thus, at this stage, we can lay out the financial balance sheet of a firm as follows:

Assets		Liabilities	
Existing Investments Generate cashfi ows today Includes long lived (fi xed) and short-lived(working capital) assets	Assets in Place	Debt	Fixed Claim on cash fi ows Little or No role in management <i>Fixed Maturity</i> <i>Tax Deductible</i>
Expected Value that will be created by future investments	Growth Assets	Equity	Residual Claim on cash fi ows Signifi cant Role in management <i>Perpetual Lives</i>

We will return this framework repeatedly through this book.

First Principles

Every discipline has first principles that govern and guide everything that gets done within it. All of corporate finance is built on three principles, which we will call, rather unimaginatively, the investment principle, the financing principle, and the dividend principle. The investment principle determines where businesses invest their resources, the financing principle governs the mix of funding used to fund these investments, and the dividend principle answers the question of how much earnings should be reinvested back into the business and how much returned to the owners of the business. These core corporate finance principles can be stated as follows:

- ***The Investment Principle:*** Invest in assets and projects that *yield a return greater than the minimum acceptable hurdle rate*. The hurdle rate should be *higher for riskier projects* and should reflect the *financing mix* used—owners' funds (equity) or borrowed money (debt). Returns on projects should be measured based on *cash flows* generated and the *timing* of these cash flows; they should also consider both *positive and negative side effects* of these projects.
- ***The Financing Principle:*** Choose a *financing mix (debt and equity)* that maximizes the value of the investments made and *match the financing to the nature of the assets* being financed.
- ***The Dividend Principle:*** If there are not enough investments that earn the hurdle rate, *return the cash* to the owners of the business. In the case of a publicly traded firm, the *form of the return*—dividends or stock buybacks—will depend on what stockholders prefer.

When making investment, financing and dividend decisions, corporate finance is single-minded about the ultimate objective, which is assumed to be maximizing the value of the business. These first principles provide the basis from which we will extract the numerous models and theories that comprise modern corporate finance, but they are also commonsense principles. It is incredible conceit on our part to assume that until corporate finance was developed as a coherent discipline starting just a few decades ago, people who ran businesses made decisions randomly with no principles to govern their thinking. Good businesspeople through the ages have always recognized the importance of these first principles and adhered to them, albeit in intuitive ways. In fact, one of the ironies of recent times is that many managers at large and presumably sophisticated firms with access to the latest corporate finance technology have lost sight of these basic principles.

The Objective of the Firm

No discipline can develop cohesively over time without a unifying objective. The growth of corporate financial theory can be traced to its choice of a single objective and the development of models built around this objective. The objective in conventional corporate financial theory when making decisions is to maximize the value of the business or firm. Consequently, any decision (investment, financial, or dividend) that

increases the value of a business is considered a good one, whereas one that reduces firm value is considered a poor one. Although the choice of a singular objective has provided corporate finance with a unifying theme and internal consistency, it comes at a cost. To the degree that one buys into this objective, much of what corporate financial theory posits makes sense. To the degree that this objective is flawed, however, it can be argued that the theory built on it is flawed as well. Many of the disagreements between corporate financial theorists and others (academics as well as practitioners) can be traced to fundamentally different views about the correct objective for a business. For instance, there are some critics of corporate finance who argue that firms should have multiple objectives where a variety of interests (stockholders, labor, customers) are met, and there are others who would have firms focus on what they view as simpler and more direct objectives, such as market share or profitability.

Given the significance of this objective for both the development and the applicability of corporate financial theory, it is important that we examine it much more carefully and address some of the very real concerns and criticisms it has garnered: It assumes that what stockholders do in their own self-interest is also in the best interests of the firm, it is sometimes dependent on the existence of efficient markets, and it is often blind to the social costs associated with value maximization. In the next chapter, we consider these and other issues and compare firm value maximization to alternative objectives.

The Investment Principle

Firms have scarce resources that must be allocated among competing needs. The first and foremost function of corporate financial theory is to provide a framework for firms to make this decision wisely. Accordingly, we define *investment decisions* to include not only those that create revenues and profits (such as introducing a new product line or expanding into a new market) but also those that save money (such as building a new and more efficient distribution system). Furthermore, we argue that decisions about how much and what inventory to maintain and whether and how much credit to grant to customers that are

<p>Hurdle Rate: A hurdle rate is a minimum acceptable rate of return for investing resources in a new investment.</p>
--

traditionally categorized as working capital decisions, are ultimately investment decisions as well. At the other end of the spectrum, broad strategic decisions regarding which markets to enter and the acquisitions of other companies can also be considered investment decisions.

Corporate finance attempts to measure the return on a proposed investment decision and compare it to a minimum acceptable hurdle rate to decide whether the project is acceptable. The hurdle rate has to be set higher for riskier projects and has to reflect the financing mix used, i.e., the owner's funds (equity) or borrowed money (debt). In Chapter 3, we begin this process by defining risk and developing a procedure for measuring risk. In Chapter 4, we go about converting this risk measure into a hurdle rate, i.e., a minimum acceptable rate of return, both for entire businesses and for individual investments.

Having established the hurdle rate, we turn our attention to measuring the returns on an investment. In Chapter 5 we evaluate three alternative ways of measuring returns—conventional accounting earnings, cash flows, and time-weighted cash flows (where we consider both how large the cash flows are and when they are anticipated to come in). In Chapter 6 we consider some of the potential side costs that might not be captured in any of these measures, including costs that may be created for existing investments by taking a new investment, and side benefits, such as options to enter new markets and to expand product lines that may be embedded in new investments, and synergies, especially when the new investment is the acquisition of another firm.

The Financing Principle

Every business, no matter how large and complex, is ultimately funded with a mix of borrowed money (debt) and owner's funds (equity). With a publicly trade firm, debt may take the form of bonds and equity is usually common stock. In a private business, debt is more likely to be bank loans and an owner's savings represent equity. Though we consider the existing mix of debt and equity and its implications for the minimum acceptable hurdle rate as part of the investment principle, we throw open the question of whether the existing mix is the right one in the financing principle section. There might be regulatory and other real-world constraints on the financing mix that a business can

use, but there is ample room for flexibility within these constraints. We begin this section in Chapter 7, by looking at the range of choices that exist for both private businesses and publicly traded firms between debt and equity. We then turn to the question of whether the existing mix of financing used by a business is optimal, given the objective function of maximizing firm value, in Chapter 8. Although the trade-off between the benefits and costs of borrowing are established in qualitative terms first, we also look at quantitative approaches to arriving at the optimal mix in Chapter 8. In the first approach, we examine the specific conditions under which the optimal financing mix is the one that minimizes the minimum acceptable hurdle rate. In the second approach, we look at the effects on firm value of changing the financing mix.

When the optimal financing mix is different from the existing one, we map out the best ways of getting from where we are (the current mix) to where we would like to be (the optimal) in Chapter 9, keeping in mind the investment opportunities that the firm has and the need for timely responses, either because the firm is a takeover target or under threat of bankruptcy. Having outlined the optimal financing mix, we turn our attention to the type of financing a business should use, such as whether it should be long-term or short-term, whether the payments on the financing should be fixed or variable, and if variable, what it should be a function of. Using a basic proposition that a firm will minimize its risk from financing and maximize its capacity to use borrowed funds if it can match up the cash flows on the debt to the cash flows on the assets being financed, we design the perfect financing instrument for a firm. We then add additional considerations relating to taxes and external monitors (equity research analysts and ratings agencies) and arrive at strong conclusions about the design of the financing.

The Dividend Principle

Most businesses would undoubtedly like to have unlimited investment opportunities that yield returns exceeding their hurdle rates, but all businesses grow and mature. As a consequence, every business that thrives reaches a stage in its life when the cash flows generated by existing investments is greater than the funds needed to take on good investments. At that point, this business has to figure out ways to return the excess cash to owners. In private businesses, this may just involve the owner withdrawing a

portion of his or her funds from the business. In a publicly traded corporation, this will involve either paying dividends or buying back stock. Note that firms that choose not to return cash to owners will accumulate cash balances that grow over time. Thus, analyzing whether and how much cash should be returned to the owners of a firm is the equivalent of asking (and answering) the question of how much cash accumulated in a firm is too much cash.

In Chapter 10, we introduce the basic trade-off that determines whether cash should be left in a business or taken out of it. For stockholders in publicly traded firms, we note that this decision is fundamentally one of whether they trust the managers of the firms with their cash, and much of this trust is based on how well these managers have invested funds in the past. In Chapter 11, we consider the options available to a firm to return assets to its owners—dividends, stock buybacks and spin-offs—and investigate how to pick between these options.

Corporate Financial Decisions, Firm Value, and Equity Value

If the objective function in corporate finance is to maximize firm value, it follows that firm value must be linked to the three corporate finance decisions outlined—investment, financing, and dividend decisions. The link between these decisions and firm value can be made by recognizing that *the value of a firm is the present value of its expected cash flows, discounted back at a rate that reflects both the riskiness of the projects of the firm and the financing mix used to finance them*. Investors form expectations about future cash flows based on observed current cash flows and expected future growth, which in turn depend on the quality of the firm's projects (its investment decisions) and the amount reinvested back into the business (its dividend decisions). The financing decisions affect the value of a firm through both the discount rate and potentially through the expected cash flows.

This neat formulation of value is put to the test by the interactions among the investment, financing, and dividend decisions and the conflicts of interest that arise between stockholders and lenders to the firm, on one hand, and stockholders and managers, on the other. We introduce the basic models available to value a firm and its equity in Chapter 12, and relate them back to management decisions on investment,

financial, and dividend policy. In the process, we examine the determinants of value and how firms can increase their value.

A Real-World Focus

The proliferation of news and information on real-world businesses making decisions every day suggests that we do not need to use hypothetical examples to illustrate the principles of corporate finance. We will use five businesses through this book to make our points about corporate financial policy:

1. *Disney Corporation*: Disney Corporation is a publicly traded firm with wide holdings in entertainment and media. Most people around the world recognize the Mickey Mouse logo and have heard about or visited a Disney theme park or seen some or all of the Disney animated classic movies, but it is a much more diversified corporation than most people realize. Disney's holdings include cruise line, real estate (in the form of time shares and rental properties in Florida and South Carolina), television (Disney cable, ABC and ESPN), publications, movie studios (Miramax, Pixar and Disney) and consumer products. Disney will help illustrate the decisions that large multi-business and multinational corporations have to make as they are faced with the conventional corporate financial decisions—Where do we invest? How do we finance these investments? How much do we return to our stockholders?
2. *Bookscape Books*: This company is a privately owned independent bookstore in New York City, one of the few left after the invasion of the bookstore chains, such as Barnes and Noble and Borders. We will take Bookscape Books through the corporate financial decision-making process to illustrate some of the issues that come up when looking at small businesses with private owners.
3. *Aracruz Celulose*: Aracruz Celulose is a Brazilian firm that produces eucalyptus pulp and operates its own pulp mills, electrochemical plants, and port terminals. Although it markets its products around the world for manufacturing high-grade paper, we use it to illustrate some of the questions that have to be dealt with when analyzing a company that is highly dependent upon commodity prices – paper and pulp, in this instance, and operates in an environment where inflation is high and volatile and the economy itself is in transition.

4. *Deutsche Bank*: Deutsche Bank is the leading commercial bank in Germany and is also a leading player in investment banking. We will use Deutsche Bank to illustrate some of the issues that come up when a financial service firm has to make investment, financing and dividend decisions. Since banks are highly regulated institutions, it will also serve to illustrate the constraints and opportunities created by the regulatory framework.
5. *Tata Chemicals*: Tata Chemicals is a firm involved in the chemical and fertilizer business and is part of one of the largest Indian family group companies, the Tata Group, with holdings in technology, manufacturing and service businesses. In addition to allowing us to look at issues specific to manufacturing firms, Tata Chemicals will also give us an opportunity to examine how firms that are part of larger groups make corporate finance decisions.

We will look at every aspect of finance through the eyes of all five companies, sometimes to draw contrasts between the companies, but more often to show how much they share.

A Resource Guide

To make the learning in this book as interactive and current as possible, we employ a variety of devices.



This icon indicates that spreadsheet programs can be used to do some of the analysis that will be presented. For instance, there are spreadsheets that calculate the optimal financing mix for a firm as well as valuation spreadsheets.



This symbol marks the second supporting device: updated data on some of the inputs that we need and use in our analysis that is available online for this book. Thus, when we estimate the risk parameters for firms, we will draw attention to the data set that is maintained online that reports average risk parameters by industry.



At regular intervals, we will also ask readers to answer questions relating to a topic. These questions, which will generally be framed using real-world examples, will help emphasize the key points made in a chapter and will be marked with this icon.

✂. In each chapter, we will introduce a series of boxes titled “In Practice,” which will look at issues that are likely to come up in practice and ways of addressing these issues.



We examine how firms behave when it comes to assessing risk, evaluating investments and determining the mix of debt and equity, and dividend policy. To make this assessment, we will look at both surveys of decision makers (which chronicle behavior at firms) as well as the findings from studies in behavioral finance that try to explain patterns of management behavior.

Some Fundamental Propositions about Corporate Finance

There are several fundamental arguments we will make repeatedly throughout this book.

1. *Corporate finance has an internal consistency* that flows from its choice of maximizing firm value as the only objective function and its dependence on a few bedrock principles: Risk has to be rewarded, cash flows matter more than accounting income, markets are not easily fooled, and every decision a firm makes has an effect on its value.
2. *Corporate finance must be viewed as an integrated whole*, rather than a collection of decisions. Investment decisions generally affect financing decisions and vice versa; financing decisions often influence dividend decisions and vice versa. Although there are circumstances under which these decisions may be independent of each other, this is seldom the case in practice. Accordingly, it is unlikely that firms that deal with their problems on a piecemeal basis will ever resolve these problems. For instance, a firm that takes poor investments may soon find itself with a dividend problem (with insufficient funds to pay dividends) and a financing problem (because the drop in earnings may make it difficult for them to meet interest expenses).
3. *Corporate finance matters to everybody*. There is a corporate financial aspect to almost every decision made by a business; though not everyone will find a use for all the components of corporate finance, everyone will find a use for at least some *part* of it. Marketing managers, corporate strategists, human resource managers, and information

technology managers all make corporate finance decisions every day and often don't realize it. An understanding of corporate finance will help them make better decisions.

4. *Corporate finance is fun.* This may seem to be the tallest claim of all. After all, most people associate corporate finance with numbers, accounting statements, and hardheaded analyses. Although corporate finance is quantitative in its focus, there is a significant component of creative thinking involved in coming up with solutions to the financial problems businesses do encounter. It is no coincidence that financial markets remain breeding grounds for innovation and change.

5. *The best way to learn corporate finance is by applying its models and theories to real-world problems.* Although the theory that has been developed over the past few decades is impressive, the ultimate test of any theory is application. As we show in this book, much (if not all) of the theory can be applied to real companies and not just to abstract examples, though we have to compromise and make assumptions in the process.

Conclusion

This chapter establishes the first principles that govern corporate finance. The investment principle specifies that businesses invest only in projects that yield a return that exceeds the hurdle rate. The financing principle suggests that the right financing mix for a firm is one that maximizes the value of the investments made. The dividend principle requires that cash generated in excess of good project needs be returned to the owners. These principles are the core for what follows in this book.