



THE BASICS OF FINANCE

+ Web Site

*An Introduction to
Financial Markets, Business Finance,
and Portfolio Management*

PAMELA PETERSON DRAKE • FRANK J. FABOZZI

The Basics of Finance

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FRANK J. FABOZZI



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To my husband, Randy, and my children, Ken and Erica
—P.P.D.

*To my wife, Donna, and my children, Francesco,
Patricia, and Karly*
—F.J.F.

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Preface

An investment in knowledge pays the best interest.

—Benjamin Franklin

The purpose of this book is to provide an introduction to financial decision-making, and the framework in which these decisions are made. *The Basics of Finance* is an accessible book for those who want to gain a better understanding of this field, but lack a strong business background. In this book, we cover the essential concepts, tools, methods, and strategies in finance without delving too far into theory.

In *Basics of Finance*, we discuss financial instruments and markets, portfolio management techniques, understanding and analyzing financial statements, and corporate financial strategy, planning, and policy. We explain concepts in various areas of finance without getting too complicated.

We explore, in a basic way, topics such as cash flow analysis, asset valuation, capital budgeting, and derivatives. We also provide a solid foundation in the field of finance, which you can quickly build upon.

Along the way, we provide sample problems—Try it! problems—so that you can try out any math that we demonstrate in the chapter. We also provide end-of-chapter questions—with solutions easily accessible on our web site—that test your knowledge of the basic terms and concepts that we discuss in the chapter. Solutions to end-of-chapter problems can be downloaded by visiting www.wiley.com/go/petersonbasics. Please log in to the web site using this password: Petersonbasics123.

The Basics of Finance offers essential guidance on financial markets and institutions, business finance, portfolio management, risk management, and much more. If you're looking to learn more about finance, this is the place to start.

We thank Glen Larsen, Professor of Finance at the Kelley School of Business, Indiana University, for coauthoring with us the section on relative valuation in Chapter 19.

PAMELA PETERSON DRAKE

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May 2010

What Is Finance?

A truly great business must have an enduring ‘moat’ that protects excellent returns on invested capital. The dynamics of capitalism guarantee that competitors will repeatedly assault any business ‘castle’ that is earning high returns. Therefore a formidable barrier such as a company’s being the low cost producer (GEICO, Costco) or possessing a powerful world-wide brand (Coca-Cola, Gillette, American Express) is essential for sustained success. Business history is filled with ‘Roman Candles,’ companies whose moats proved illusory and were soon crossed.

—Warren Buffett, Letter to Shareholders of Berkshire Hathaway, February 2008

Finance is the application of economic principles to decision-making that involves the allocation of money under conditions of uncertainty. In other words, in finance we worry about money and we worry about the future. Investors allocate their funds among financial assets in order to accomplish their objectives, and businesses and governments raise funds by issuing claims against themselves and then use those funds for operations.

Finance provides the framework for making decisions as to how to get funds and what we should do with them once we have them. It is the financial system that provides the platform by which funds are transferred from those entities that have funds to those entities that need funds.

The foundations for finance draw from the field of economics and, for this reason, finance is often referred to as *financial economics*. For example, as you saw with the quote by Warren Buffett at the beginning of this chapter, competition is important in the valuation of a company. The ability to keep

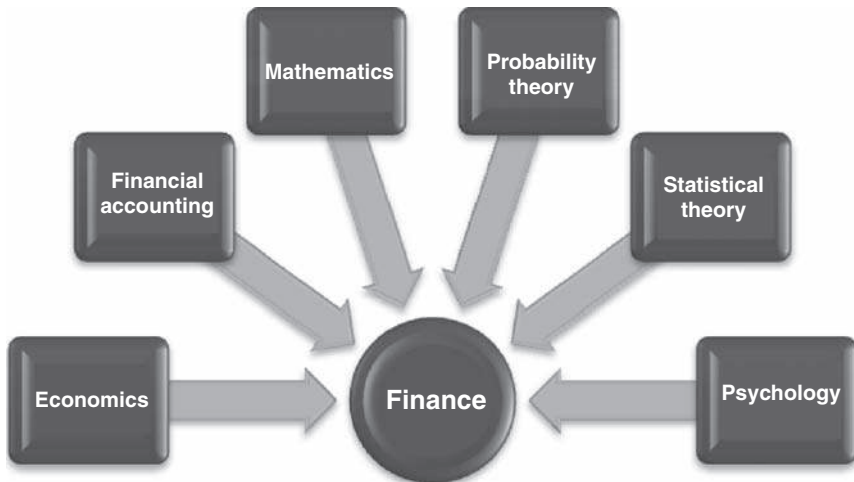


EXHIBIT 1.1 Finance and Its Relation to Other Fields

competitors at bay is valuable because it ensures that the company can continue to earn economic profits.¹

FINANCE IS . . .

- analytical, using statistical, probability, and mathematics to solve problems.
- based on economic principles.
- uses accounting information as inputs to decision-making.
- global in perspective.
- the study of how to raise money and invest it productively.

The tools used in financial decision-making, however, draw from many areas outside of economics: financial accounting, mathematics, probability theory, statistical theory, and psychology, as we show in Exhibit 1.1.

We can think of the field of finance as comprised of three areas: capital markets and capital market theory, financial management, and investment

¹*Economic profits* are earnings beyond the cost of capital used to generate those earnings. In other words, economic profits are those in excess of normal profits—those returns expected based on the investment's risk.



EXHIBIT 1.2 The Three Areas within the Field of Finance

management, as we illustrate in Exhibit 1.2. And, as this exhibit illustrates, the three areas are all intertwined, based on a common set of theories and principles. In the balance of this chapter, we discuss each of these specialty areas.

CAPITAL MARKETS AND CAPITAL MARKET THEORY

The field of *capital markets and capital market theory* focuses on the study of the financial system, the structure of interest rates, and the pricing of risky assets. The financial system of an economy consists of three components: (1) financial markets; (2) financial intermediaries; and (3) financial regulators. For this reason, we often refer to this area as *financial markets and institutions*.

Several important topics included in this specialty area of finance are the pricing efficiency of financial markets, the role and investment behavior of the players in financial markets, the best way to design and regulate financial markets, the measurement of risk, and the theory of asset pricing. The pricing efficiency of the financial markets is critical because it deals with whether investors can “beat the market.” If a market is highly *price efficient*, it is extremely difficult for investors to earn returns that are greater than those expected for the investment’s level of risk—that is, it is difficult for investors to beat the market. An investor who pursues an investment strategy that seeks to “beat the market” must believe that the sector of the financial market to which the strategy is applied is not highly price efficient. Such a strategy seeking to “beat the market” is called an *active strategy*. Financial theory tells us that if a capital market is efficient, the optimal

strategy is not an active strategy, but rather is a *passive strategy* that seeks to match the performance of the market.

In finance, beating the market means outperforming the market by generating a return on investment beyond what is expected after adjusting for risk and transaction costs. To be able to quantitatively determine what is “expected” from an investment after adjusting for risk, it is necessary to formulate and empirically test theories about how assets are priced or, equivalently, valuing an asset to determine its fair value.

A cow for her milk
A hen for her eggs,
And a stock, by heck,
For her dividends.

An orchard for fruit,
Bees for their honey,
And stocks, besides,
For their dividends.

—John Burr Williams
“Evaluation of the Rule of Present Worth,”
Theory of Investment Value, 1937

The fundamental principle of valuation is that the value of any financial asset is the present value of the expected cash flows. Thus, the valuation of a financial asset involves (1) estimating the expected cash flows; (2) determining the appropriate interest rate or interest rates that should be used to discount the cash flows; and (3) calculating the present value of the expected cash flows. For example, in valuing a stock, we often estimate future dividends and gauge how uncertain are these dividends. We use basic mathematics of finance to compute the present value or discounted value of cash flows. In the process of this calculation of the present value or discounted value, we must use a suitable interest rate, which we will refer to as a *discount rate*. Capital market theory provides theories that guide investors in selecting the appropriate interest rate or interest rates.

FINANCIAL MANAGEMENT

Financial management, sometimes called *business finance* or *corporate finance*, is the specialty area of finance concerned with financial decision-making within a business entity. Although financial management is often

referred to as corporate finance, the principles of financial management also apply to other forms of business and to government entities. Financial managers are primarily concerned with investment decisions and financing decisions within organizations, whether that organization is a sole proprietorship, a partnership, a limited liability company, a corporation, or a governmental entity.

Regarding investment decisions, we are concerned with the use of funds—the buying, holding, or selling of all types of assets: Should a business purchase a new machine? Should a business introduce a new product line? Sell the old production facility? Acquire another business? Build a manufacturing plant? Maintain a higher level of inventory?

Financing decisions are concerned with the procuring of funds that can be used for long-term investing and financing day-to-day operations. Should financial managers use profits raised through the company's revenues or distribute those profits to the owners? Should financial managers seek money from outside of the business? A company's operations and investments can be financed from outside the business by incurring debt—such as through bank loans or the sale of bonds—or by selling ownership interests. Because each method of financing obligates the business in different ways, financing decisions are extremely important. The financing decision also involves the dividend decision, which involves how much of a company's profit should be retained and how much to distribute to owners.

A company's financial strategic plan is a framework of achieving its goal of maximizing owner's wealth. Implementing the strategic plan requires both long-term and short-term financial planning that brings together forecasts of the company's sales with financing and investment decision-making. Budgets are employed to manage the information used in this planning; performance measures are used to evaluate progress toward the strategic goals.

The *capital structure* of a company is the mixture of debt and equity that management elects to raise to finance the assets of the company. There are several economic theories about how the company should be financed and whether an optimal capital structure (that is, one that maximizes a company's value) exists.

Investment decisions made by the financial manager involve the long-term commitment of a company's scarce resources in long-term investments. We refer to these decisions as *capital budgeting decisions*. These decisions play a prominent role in determining the success of a business enterprise. Although there are capital budgeting decisions that are routine and, hence, do not alter the course or risk of a company, there are also strategic capital budgeting decisions that either affect a company's future market position in its current product lines or permit it to expand into new product lines in the future.

A financial manager must also make decisions about a company's current assets. *Current assets* are those assets that could reasonably be converted into cash within one operating cycle or one year, whichever takes longer. Current assets include cash, marketable securities, accounts receivable, and inventories, and support the long-term investment decisions of a company.

Another critical task in financial management is the *risk management* of a company. The process of risk management involves determining which risks to accept, which to neutralize, and which to transfer. The four key processes in risk management are risk:

1. Identification
2. Assessment
3. Mitigation
4. Transference

The traditional process of risk management focuses on managing the risks of only parts of the business (products, departments, or divisions), ignoring the implications for the value of the company. Today, some form of *enterprise risk management* is followed by large corporations, which is risk management applied to the company as a whole. Enterprise risk management allows management to align the risk appetite and strategies across the company, improve the quality of the company's risk response decisions, identify the risks across the company, and manage the risks across the company.

The first step in the risk management process is to acknowledge the reality of risk. Denial is a common tactic that substitutes deliberate ignorance for thoughtful planning.

—Charles Tremper

INVESTMENT MANAGEMENT

Investment management is the specialty area within finance dealing with the management of individual or institutional funds. Other terms commonly used to describe this area of finance are *asset management*, *portfolio management*, *money management*, and *wealth management*. In industry jargon, an asset manager “runs money.”

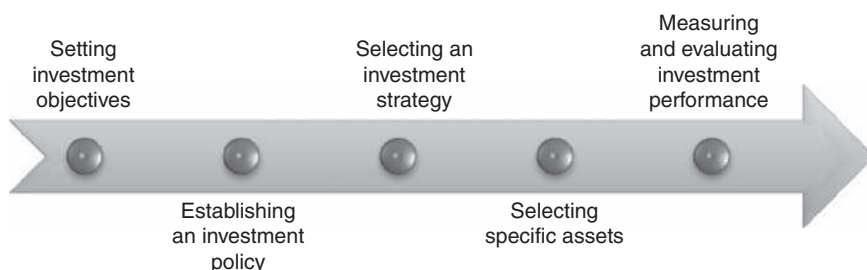


EXHIBIT 1.3 Investment Management Activities

Investment management involves five primary activities, as we detail in Exhibit 1.3. Setting investment objectives starts with a thorough analysis of what the entity or client wants to accomplish. Given the investment objectives, the investment manager develops policy guidelines, taking into consideration any client-imposed investment constraints, legal/regulatory constraints, and tax restrictions. This task begins with the decision of how to allocate assets in the portfolio (i.e., how the funds are to be allocated among the major asset classes). The *portfolio* is simply the set of investments that are managed for the benefit of the client or clients. Next, the investment manager must select a portfolio strategy that is consistent with the investment objectives and investment policy guidelines.

In general, portfolio strategies are classified as either active or passive. Selecting the specific financial assets to include in the portfolio, which is referred to as the portfolio selection problem, is the next step. The theory of portfolio selection was formulated by Harry Markowitz in 1952.² This theory proposes how investors can construct portfolios based on two parameters: mean return and standard deviation of returns. The latter parameter is a measure of risk. An important task is the evaluation of the performance of the asset manager. This task allows a client to determine answers to questions such as: How did the asset manager perform after adjusting for the risks associated with the active strategy employed? And, how did the asset manager achieve the reported return?

ORGANIZATION OF THIS BOOK

We have organized this book in parts to enable you to see how all the pieces in finance come together. In Part One, we provide the basic

²Harry M. Markowitz, "Portfolio Selection," *Journal of Finance* 7(1952): 77–91.

framework of the financial system and the players in this system. In Part Two, we focus on financial management, and discuss financial statements, financial decision-making within a business enterprise, strategy, and decisions including dividends, financing, and investment management.

In Part Three, we focus more on the analytical part of finance, which involves valuing assets, making investment decisions, and analyzing performance. In Part Four, we introduce you to investments, which include derivatives and risk management, as well as portfolio management. In this part, we also explain the basic methods that are used to value stocks and bonds, and some of the theories behind these valuations.

THE BOTTOM LINE

- Finance blends together economics, psychology, accounting, statistics, mathematics, and probability theory to make decisions that involve future outcomes.
- We often characterize finance as comprised of three related areas: capital markets and capital market theory, financial management, and investment management.
- Capital markets and capital market theory focus on the financial system that includes markets, intermediaries, and regulators.
- Financial management focuses on the decision-making of a business enterprise, which includes decisions related to investing in long-lived assets and financing these investments.
- Investment management deals with managing the investments of individuals and institutions.

QUESTIONS

1. What distinguishes investment management from financial management?
2. What is the role of a discount rate in decision-making?
3. What is the responsibility of the investment manager with respect to the investment portfolio?
4. Distinguish between capital budgeting and capital structure.
5. What are current assets?

6. If a market is price efficient,
 - a. Can an investor “beat the market”?
 - b. Which type of portfolio management—active or passive—is best?
7. What does the financing decision of a firm involve?
8. List the general steps in the risk management of a company.
9. What is enterprise risk management?
10. List the five activities of an investment manager.

PART

One

The Financial System

Financial Instruments, Markets, and Intermediaries

A strong financial system is vitally important—not for Wall Street, not for bankers, but for working Americans. When our markets work, people throughout our economy benefit—Americans seeking to buy a car or buy a home, families borrowing to pay for college, innovators borrowing on the strength of a good idea for a new product or technology, and businesses financing investments that create new jobs. And when our financial system is under stress, millions of working Americans bear the consequences. Government has a responsibility to make sure our financial system is regulated effectively. And in this area, we can do a better job. In sum, the ultimate beneficiaries from improved financial regulation are America’s workers, families, and businesses—both large and small.

—Henry M. Paulson, Jr., then Secretary of the U.S. Department of the Treasury, March 31, 2008

THE FINANCIAL SYSTEM

A country’s financial system consists of entities that help facilitate the flow of funds from those that have funds to invest to those who need funds to invest. Consider if you had to finance a purchase of a home by rounding up enough folks willing to lend to you. This would be challenging—and a bit awkward. In addition, this would require careful planning—and lots of paperwork—to keep track of the loan contracts, and how much you must repay and to whom. And what about the folks you borrow from? How are they going to evaluate whether they should lend to you and what interest rate they should charge you for the use of their funds?

In lending and investing situations, there is not only the awkwardness of dealing directly with the other party or parties, but there is the problem that one party has a different information set than the other. In other words, there is *information asymmetry*.

A financial system makes possible a more efficient transfer of funds by mitigating the information asymmetry problem between those with funds to invest and those needing funds. In addition to the lenders and the borrowers, the financial system has three components: (1) financial markets, where transactions take place; (2) financial intermediaries, who facilitate the transactions; and (3) regulators of financial activities, who try to make sure that everyone is playing fair. In this chapter, we look at each of these components and the motivation for their existence. Before we discuss the participants, we need to first discuss financial assets, which represent the borrowings or investments.

Financial Assets

An *asset* is any resource that we expect to provide future benefits and, hence, has economic value. We can categorize assets into two types: *tangible assets* and *intangible assets*. The value of a tangible asset depends on its physical properties. Buildings, aircraft, land, and machinery are examples of tangible assets, which we often refer to as *fixed assets*.

An intangible asset represents a legal claim to some future economic benefit or benefits. Examples of intangible assets include patents, copyrights, and trademarks. The value of an intangible asset bears no relation to the form, physical or otherwise, in which the claims are recorded. *Financial assets*, such as stocks and bonds, are also intangible assets because the future benefits come in the form of a claim to future cash flows. Another term we use for a financial asset is *financial instrument*. We often refer to certain types of financial instruments as *securities*, which include stocks and bonds.

For every financial instrument, there is a minimum of two parties. The party that has agreed to make future cash payments is the *issuer*; the party that owns the financial instrument and therefore the right to receive the payments made by the issuer is the *investor*.

Why Do We Need Financial Assets?

Financial assets serve two principal functions:

1. They allow the transference of funds from those entities that have surplus funds to invest to those who need funds to invest in tangible assets.

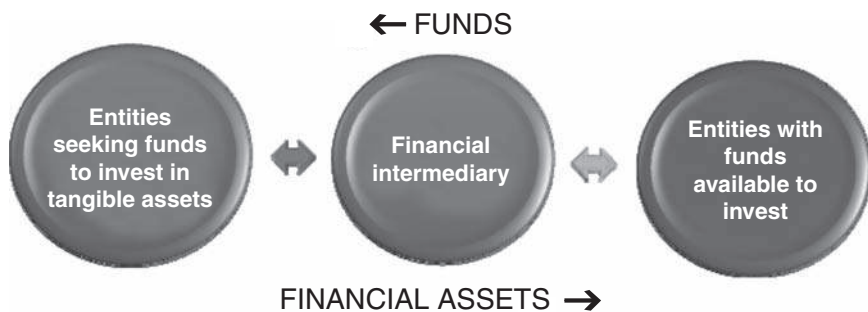


EXHIBIT 2.1 The Role of the Financial Intermediary

2. They permit the transference of funds in such a way as to redistribute the unavoidable risk associated with the tangible assets' cash flow among those seeking and those providing the funds.

However, the claims held by the final wealth holders generally differ from the liabilities issued by those entities because of the activity of entities operating in financial systems—the financial intermediaries—who transform the final liabilities into different financial assets preferred by investors (see Exhibit 2.1). We discuss financial intermediaries in more detail later.

What Is the Difference between Debt and Equity?

We can classify a financial instrument by the type of claims that the investor has on the issuer. A financial instrument in which the issuer agrees to pay the investor interest, plus repay the amount borrowed, is a *debt instrument* or, simply, *debt*. A debt can be in the form of a note, bond, or loan. The issuer must pay interest payments, which are fixed contractually. In the case of a debt instrument that is required to make payments in U.S. dollars, the amount may be a fixed dollar amount or percentage of the face value of the debt, or it can vary depending upon some benchmark. The investor who lends the funds and expects interest and the repayment of the debt is a *creditor* of the issuer.

The key point is that the investor in a debt instrument can realize no more than the contractual amount. For this reason, we often refer to debt instruments as *fixed income instruments*.

MICKEY MOUSE DEBT

The Walt Disney Company bonds issued in July 1993, which mature in July 2093, pay interest at a rate of 7.55%. This means that Disney pays the investors who bought the bonds \$7.55 per year for every \$100 of principal value of debt they own.

In contrast to a debt obligation, an *equity instrument* specifies that the issuer pay the investor an amount based on earnings, if any, after the obligations that the issuer is required to make to the company's creditors are paid. *Common stock* and *partnership shares* are examples of equity instruments. Common stock is the ownership interest in a corporation, whereas a partnership share is an ownership interest in a partnership. We refer to any distribution of a company's earnings as *dividends*.

AN EXAMPLE OF COMMON STOCK

At the end of 2008 there were 3,032,717 shares of common stock outstanding of Proctor & Gamble, a U.S. consumer products company. At that time, financial institutions owned almost 60% of this stock. These institutions include pension funds and mutual funds. Individual investors owned the remainder of Proctor & Gamble's stock.

The stock is listed on the New York Stock Exchange with the ticker symbol PG.

Some financial instruments fall into both categories in terms of their attributes. *Preferred stock* is such a hybrid because it looks like debt because investors in this security are only entitled to receive a fixed contractual amount. Yet preferred stock is similar to equity because the payment to investors is only made after obligations to the company's creditors are satisfied.

Because preferred stockholders typically are entitled to a fixed contractual amount, we refer to preferred stock as a fixed income instrument. Hence, fixed income instruments include debt instruments and preferred stock.

Another hybrid instrument is a *convertible bond* or *convertible note*. A convertible bond or note is a debt instrument that allows the investor to

convert it into shares of common stock under certain circumstances and at a specified exchange ratio.

DO YOU WANT DEBT OR STOCK?

Sirius XM Radio (ticker: SIRI) issued convertible notes in October 2004. These notes pay an interest rate of 3.25%, and can be exchanged for the common stock of Sirius XM Radio Inc. at a rate of 188.6792 shares of the company's common stock for every \$1,000 principal amount of the notes.

The notes mature in 2011, so investors in these convertible notes have until that time to exchange their note for shares; otherwise, they will receive the \$1,000 face value of the notes.

The classification of debt and equity is important for two legal reasons. First, in the case of a bankruptcy of the issuer, investors in debt instruments have a priority on the claim on the issuer's assets over equity investors. Second, in the United States, the tax treatment of the payments by the issuer differs depending on the type of class. Specifically, interest payments made on debt instruments are tax deductible to the issuer, whereas dividends are not.

THE ROLE OF FINANCIAL MARKETS

Investors exchange financial instruments in a financial market. The more popular term used for the exchanging of financial instruments is that they are "traded." Financial markets provide the following three major economic functions: (1) price discovery, (2) liquidity, and (3) reduced transaction costs.

Price discovery means that the interactions of buyers and sellers in a financial market determine the price of the traded asset. Equivalently, they determine the required return that participants in a financial market demand in order to buy a financial instrument. Financial markets signal how the funds available from those who want to lend or invest funds are allocated among those needing funds. This is because the motive for those seeking funds depends on the required return that investors demand.

Second, financial markets provide a forum for investors to sell a financial instrument and therefore offer investors liquidity. *Liquidity* is the presence of buyers and sellers ready to trade. This is an appealing feature when circumstances arise that either force or motivate an investor to sell a financial

instrument. Without liquidity, an investor would be compelled to hold onto a financial instrument until either (1) conditions arise that allow for the disposal of the financial instrument, or (2) the issuer is contractually obligated to pay it off. For a debt instrument, that is when it matures, but for an equity instrument that does not mature—but rather, is a perpetual security—it is until the company is either voluntarily or involuntarily liquidated. All financial markets provide some form of liquidity. However, the degree of liquidity is one of the factors that characterize different financial markets.

The third economic function of a financial market is that it reduces the cost of transacting when parties want to trade a financial instrument. In general, we can classify the costs associated with transacting into two types: search costs and information costs.

Search costs in turn fall into two categories: explicit costs and implicit costs. Explicit costs include expenses to advertise one's intention to sell or purchase a financial instrument. Implicit costs include the value of time spent in locating a *counterparty*—that is, a buyer for a seller or a seller for a buyer—to the transaction. The presence of some form of organized financial market reduces search costs.

Information costs are costs associated with assessing a financial instrument's investment attributes. In a price-efficient market, prices reflect the aggregate information collected by all market participants.

THE ROLE OF FINANCIAL INTERMEDIARIES

Despite the important role of financial markets, their role in allowing the efficient allocation for those who have funds to invest and those who need funds may not always work as described earlier. As a result, financial systems have found the need for a special type of financial entity, a *financial intermediary*, when there are conditions that make it difficult for lenders or investors of funds to deal directly with borrowers of funds in financial markets. Financial intermediaries include depository institutions, nondeposit finance companies, regulated investment companies, investment banks, and insurance companies.

The role of financial intermediaries is to create more favorable transaction terms than could be realized by lenders/investors and borrowers dealing directly with each other in the financial market. Financial intermediaries accomplish this in a two-step process:

1. Obtaining funds from lenders or investors.
2. Lending or investing the funds that they borrow to those who need funds.

The funds that a financial intermediary acquires become, depending on the financial claim, either the debt of the financial intermediary or equity participants of the financial intermediary. The funds that a financial intermediary lends or invests become the asset of the financial intermediary.

Consider two examples using financial intermediaries that we will elaborate upon further:

Example 1: A Commercial Bank

A commercial bank is a type of depository institution. Everyone knows that a bank accepts deposits from individuals, corporations, and governments. These depositors are the lenders to the commercial bank. The funds received by the commercial bank become the liability of the commercial bank. In turn, as explained later, a bank lends these funds by either making loans or buying securities. The loans and securities become the assets of the commercial bank.

Example 2: A Mutual Fund

A mutual fund is one type of regulated investment company. A mutual fund accepts funds from investors who in exchange receive mutual fund shares. In turn, the mutual fund invests those funds in a portfolio of financial instruments. The mutual fund shares represent an equity interest in the portfolio of financial instruments and the financial instruments are the assets of the mutual fund.

Basically, this process allows a financial intermediary to transform financial assets that are less desirable for a large part of the investing public into other financial assets—their own liabilities—which are more widely preferred by the public. This asset transformation provides at least one of three economic functions:

1. Maturity intermediation.
2. Risk reduction via diversification.
3. Cost reduction for contracting and information processing.

We describe each of these shortly.

There are other services that financial intermediaries can provide. They include:

- Facilitating the trading of financial assets for the financial intermediary's customers through brokering arrangements.

- Facilitating the trading of financial assets by using its own capital to take the other position in a financial asset to accommodate a customer's transaction.
- Assisting in the creation of financial assets for its customers and then either distributing those financial assets to other market participants.
- Providing investment advice to customers.
- Managing the financial assets of customers.
- Providing a payment mechanism.

We now discuss the three economic functions of financial intermediaries when they transform financial assets.

Maturity Intermediation

In our example of the commercial bank, you should note two things. First, the deposits' maturity is typically short term. Banks hold deposits that are payable upon demand or have a specific maturity date, and most are less than three years. Second, the maturity of the loans made by a commercial bank may be considerably longer than three years. Think about what would happen if commercial banks did not exist in a financial system. In this scenario, borrowers would have to either (1) borrow for a shorter term in order to match the length of time lenders are willing to loan funds; or (2) locate lenders that are willing to invest for the length of the loan sought.

Now put commercial banks back into the financial system. By issuing its own financial claims, the commercial bank, in essence, transforms a longer-term asset into a shorter-term one by giving the borrower a loan for the length of time sought and the depositor—who is the lender—a financial asset for the desired investment horizon. We refer to this function of a financial intermediary a *maturity intermediation*.

The implications of maturity intermediation for financial systems are twofold. The first implication is that lenders/investors have more choices with respect to the maturity for the financial instruments in which they invest and borrowers have more alternatives for the length of their debt obligations. The second implication is that because investors are reluctant to commit funds for a long time, they require long-term borrowers to pay a higher interest rate than on short-term borrowing. However, a financial intermediary is willing to make longer-term loans, and at a lower cost to the borrower than an individual investor would because the financial intermediary can rely on successive funding sources over a long time period (although at some risk). For example, a depository institution can reasonably expect to have successive deposits to be able to fund a longer-term investment. As

a result of this intermediation, the cost of longer-term borrowing is likely reduced in an economy.

Risk Reduction via Diversification

Consider the second example above of a mutual fund. Suppose that the mutual fund invests the funds received from investors in the stock of a large number of companies. By doing so, the mutual fund diversifies and reduces its risk. *Diversification* is the reduction in risk from investing in assets whose returns do not move in the same direction at the same time.

Investors with a small sum to invest would find it difficult to achieve the same degree of diversification as a mutual fund because of their lack of sufficient funds to buy shares of a large number of companies. Yet by investing in the mutual fund for the same dollar investment, investors can achieve this diversification, thereby reducing risk.

Financial intermediaries perform the economic function of diversification, transforming more risky assets into less risky ones. Though individual investors with sufficient funds can achieve diversification on their own, they may not be able to accomplish it as cost effectively as financial intermediaries. Realizing cost-effective diversification in order to reduce risk by purchasing the financial assets of a financial intermediary is an important economic benefit for financial systems.

Reducing the Costs of Contracting and Information Processing

Investors purchasing financial assets must develop skills necessary to evaluate their risk and return. After developing the necessary skills, investors can apply them in analyzing specific financial assets when contemplating their purchase or subsequent sale. Investors who want to make a loan to a consumer or business need to have the skill to write a legally enforceable contract with provisions to protect their interests. After investors make this loan, they would have to monitor the financial condition of the borrower and, if necessary, pursue legal action if the borrower violates any provisions of the loan agreement. Although some investors might enjoy devoting leisure time to this task if they had the prerequisite skill set, most find leisure time to be in short supply and want compensation for sacrificing it. The form of compensation could be a higher return obtained from an investment.

In addition to the opportunity cost of the time to process the information about the financial asset and its issuer, we must consider the cost of acquiring that information. Such costs are information-processing costs. The costs associated with writing loan agreements are *contracting costs*.

Another aspect of contracting costs is the cost of enforcing the terms of the loan agreement.

With these points in mind, consider our two examples of financial intermediaries—the commercial bank and the mutual fund. The staffs of these two financial intermediaries include investment professionals trained to analyze financial assets and manage them. In the case of loan agreements, either standardized contracts may be prepared, or legal counsel can be part of the professional staff to write contracts involving transactions that are more complex. Investment professionals monitor the activities of the borrower to assure compliance with the loan agreement's terms and, where there is any violation, take action to protect the interests of the financial intermediary.

It is clearly cost effective for financial intermediaries to maintain such staffs because investing funds is their normal business. There are economies of scale that financial intermediaries realize in contracting and processing information about financial assets because of the amount of funds that they manage.¹ These reduced costs, compared to what individual investors would have to incur to provide funds to those who need them, accrue to the benefit of (1) investors who purchase a financial claim of the financial intermediary; and (2) issuers of financial assets (a result of lower funding costs).

Regulating Financial Activities

Most governments throughout the world regulate various aspects of financial activities because they recognize the vital role played by a country's financial system. Although the degree of regulation varies from country to country, regulation takes one of four forms:

1. Disclosure regulation.
2. Financial activity regulation.
3. Regulation of financial institutions.
4. Regulation of foreign participants.

Disclosure regulation requires that any publicly traded company provide financial information and nonfinancial information on a timely basis that would be expected to affect the value of its security to actual and potential investors. Governments justify disclosure regulation by pointing out that

¹*Economies of scale* are the reduction of costs per unit when the number of units produced and sold increases. In this context, this is the cost advantage an intermediary achieves when it increases the scale of its operations in contracting and processing.

the issuer has access to better information about the economic well-being of the entity than those who own or are contemplating ownership of the securities.

Economists refer to this uneven access or uneven possession of information as *asymmetric information*. In the United States, disclosure regulation is embedded in various securities acts that delegate to the Securities and Exchange Commission (SEC) the responsibility for gathering and publicizing relevant information, and for punishing those issuers who supply fraudulent or misleading data. However, disclosure regulation does not attempt to prevent the issuance of risky assets. Rather, the SEC's sole motivation is to assure that issuers supply diligent and intelligent investors with the information needed for a fair evaluation of the securities.

Rules about traders of securities and trading on financial markets comprise financial activity regulation. Probably the best example of this type of regulation is the set of rules prohibiting the trading of a security by those who, because of their privileged position in a corporation, know more about the issuer's economic prospects than the general investing public. Such individuals are insiders and include, yet are not limited to, corporate managers and members of the board of directors. Though it is not illegal for insiders to buy or sell the stock of a company in which they are considered an insider, *illegal insider trading* is the trading in a security of a company by a person who is an insider, and the trade is based on material, nonpublic information. Illegal insider trading is another problem posed by asymmetric information. The SEC is responsible for monitoring the trades that corporate officers, directors, as well as major stockholders, execute in the securities of their firms.

Another example of financial activity regulation is the set of rules imposed by the SEC regarding the structure and operations of exchanges where securities trade. The justification for such rules is that it reduces the likelihood that members of exchanges may be able, under certain circumstances, to collude and defraud the general investing public. Both the SEC and the self-regulatory organization, the Financial Industry Regulatory Authority (FINRA), are responsible for the regulation of markets and securities firms in the United States.

The SEC and the Commodity Futures Trading Commission (CFTC), another federal government entity, share responsibility for the federal regulation of trading in options, futures and other derivative instruments. *Derivative instruments* are securities whose value depends on a specified other security or asset. For example, a call option on a stock is a derivative security whose value depends on the value of the underlying stock; if the value of the stock increases, the value of the call option on the stock increases as well.

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