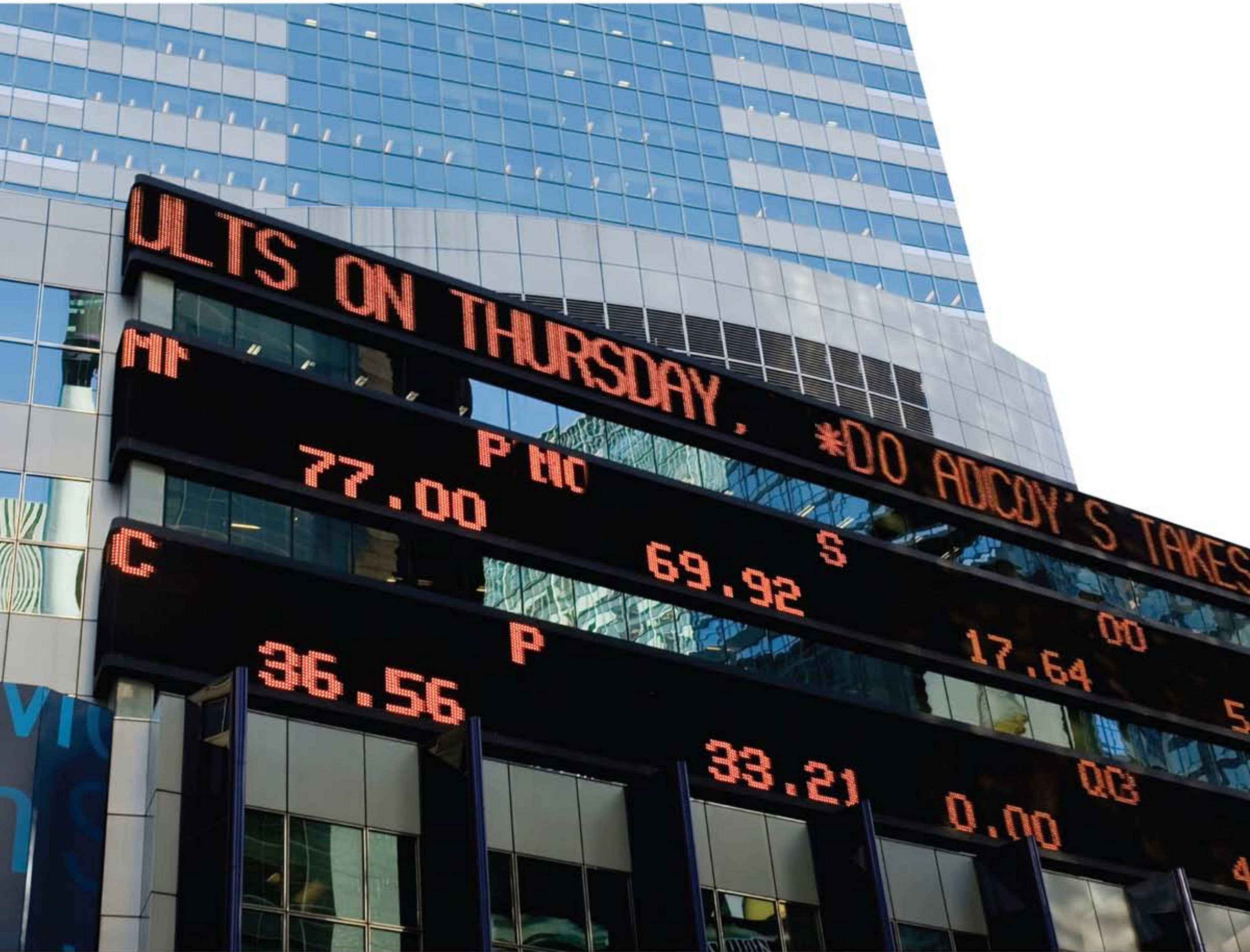
FINANCIAL MARKETS and INSTITUTIONS



JEFF MADURA

11th Edition

FINANCIAL MARKETS and INSTITUTIONS

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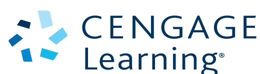
FINANCIAL MARKETS and INSTITUTIONS

11th Edition

Jeff Madura

Florida Atlantic University



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In 2012, this fund donated $200,000 to Best Friends as partial support for a new healthcare facility for the animals. During the 2011–2013 period, this fund also donated more than $50,000 to other animal care societies, including Friends of Greyhounds (Fort Lauderdale, FL), Greyhound Pets of America in Central Florida (Melbourne, FL), and Tri-County Humane Society (Boca Raton, FL).

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Preface

Financial markets finance much of the expenditures by corporations, governments, and individuals. Financial institutions are the key intermediaries in financial markets because they transfer funds from savers to the individuals, firms, or government agencies that need funds. *Financial Markets and Institutions,* 11th Edition, describes financial markets and the financial institutions that serve those markets. It provides a conceptual framework that can be used to understand why markets exist. Each type of financial market is described with a focus on the securities that are traded and the participation by financial institutions.

Today, many financial institutions offer all types of financial services, such as banking, securities services, mutual fund services, and insurance services. Each type of financial service is unique, however. Therefore, the discussion of financial services in this book is organized by type of financial service that can be offered by financial institutions.

Since the credit crisis, regulatory actions have been taken to prevent another crisis in the future. Accordingly, this text gives special attention to the impact of financial reform on each type of financial market and financial institution.

Intended Market

This text is suitable for undergraduate and master's level courses in financial markets, or financial institutions. To maximize students' comprehension, some of the more difficult questions and problems should be assigned in addition to the special applications at the end of each chapter and the Comprehensive Project. A term paper on the credit crisis may also be a valuable exercise, and several possible topics for this paper are provided at the end of the first chapter.

Organization of the Text

Part 1 (Chapters 1 through 3) introduces the key financial markets and financial institutions, explains why interest rates change over time, and explains why yields vary among securities. Part 2 (Chapters 4 and 5) describes the functions of the Federal Reserve System (the Fed) and explains how its monetary policy influences interest rates and other economic conditions. Part 3 (Chapters 6 through 9) covers the major debt security markets, Part 4 (Chapters 10 through 12) describes equity securities markets, and Part 5 (Chapters 13 through 16) covers the derivative security markets. Each chapter in Parts 3 through 5 focuses on a particular market. The integration of each market with other markets is stressed throughout these chapters. Part 6 (Chapters 17 through 20) concentrates on commercial banking, and Part 7 (Chapters 21 through 25) covers all other types of financial services provided by financial institutions.

Courses that emphasize financial markets should focus on the first five parts (Chapters 1 through 16); however, some chapters in the section on commercial banking are also relevant. Courses that emphasize financial institutions and financial services should focus on Parts 1, 2, 6, and 7, although some background on securities markets (Parts 3, 4, and 5) may be helpful.

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Professors may wish to focus on certain chapters of this book, and skip others, depending on the other courses available to their students. For example, if a course on derivative securities is commonly offered, Part 5 of this text may be ignored. Alternatively, if an investments course provides a thorough background on types of securities, Parts 3 and 4 can be given less attention.

Chapters can be rearranged without a loss in continuity. Regardless of the order in which chapters are studied, it is highly recommended that some questions and exercises from each chapter be assigned. These exercises may serve as a focal point for class discussion.

The credit crisis receives considerable emphasis in the mortgage markets chapter (Chapter 9) because it was primarily caused by activities in the mortgage market. The crisis has had an impact on every type of financial market and institution, however, so it is covered in each chapter as it applies to the contents of that chapter.

Coverage of Major Concepts and Events

Numerous concepts relating to recent events and current trends in financial markets are discussed throughout the chapters. These include the following:

- New laws applied to bond rating agencies
- Increased exposure of municipal bonds to default
- Facebook's IPO
- Performance of venture capital and private equity funding
- Government rescues of financial institutions during the credit crisis
- Credit default swaps
- Behavioral finance
- Emergence of private stock exchanges, such as SecondMarket and SharesPost
- Dark pools used to trade stocks
- Recent developments in insider trading
- New restrictions on proprietary trading by banks
- Occupy Wall Street protests
- Backdating of options
- Governance in financial markets
- The Fed's increasing role in financial markets
- Role of analysts
- Value-at-risk applications
- Asymmetric information
- Valuation of financial institutions
- Regulatory reform in financial services

Each chapter is self-contained, so professors can use classroom time to focus on the more complex concepts and rely on the text to cover the other concepts.

Features of the Text

The features of the text are as follows:

- ***Part-Opening Diagram.*** A diagram is provided at the beginning of each part to illustrate generally how the key concepts in that part are related.
- ***Objectives.*** A bulleted list at the beginning of each chapter identifies the key concepts in that chapter.

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- ***Examples.*** Examples are provided to reinforce key concepts.
- ***Financial Reform.*** A Financial Reform icon in the margin indicates a discussion of financial reform as it applies to the topics covered in the chapter.
- ***Global Aspects.*** A Global Aspects icon in the margin indicates international coverage of the topic being discussed.
- ***Summary.*** A bulleted list at the end of each chapter summarizes the key concepts. This list corresponds to the list of objectives at the beginning of the chapter.
- ***Point Counter-Point.*** A controversial issue is introduced along with opposing arguments, and students are asked to determine which argument is correct and to explain why.
- ***Questions and Applications.*** The Questions and Applications section at the end of each chapter tests students' understanding of the key concepts and may serve as homework assignments or study aids in preparation for exams.
- ***Interpreting Financial News.*** At the end of each chapter, students are challenged to interpret comments made in the media about the chapter's key concepts. This gives students practice in interpreting announcements by the financial media.
- ***Managing in Financial Markets.*** At the end of each chapter, students are placed in the position of financial managers and must make decisions about specific situations related to the key concepts in that chapter.
- ***Flow of Funds Exercise.*** A running exercise is provided at the end of each chapter to illustrate how a manufacturing company relies on all types of financial markets and financial services provided by financial institutions.
- ***Internet/Excel Exercises.*** At the end of each chapter, there are exercises that introduce students to applicable information available on various websites, enable the application of Excel to related topics, or a combination of these. For example, the exercises allow students to assess yield curves, risk premiums, and stock volatility.
- ***Problems.*** Selected chapters include problems to test students' computational skills.
- ***WSJ Exercise.*** This exercise appears at the end of selected chapters and gives students an opportunity to apply information provided in the *Wall Street Journal* to specific concepts explained in that chapter.
- ***Integrative Problems.*** An integrative problem at the end of each part integrates the key concepts of chapters within that part.
- ***Term Paper on the Credit Crisis.*** Several topics for term papers on the credit crisis are suggested at the end of Chapter 1.
- ***Comprehensive Project.*** This project, found in Appendix A, requires students to apply real data to several key concepts described throughout the book.
- ***Midterm and Final Self-Examinations.*** At the end of Chapter 16, a midterm self-exam is offered to test students' knowledge of financial markets. At the end of Chapter 25, a final self-exam is offered to test students' knowledge of financial institutions. An answer key is provided so that students can evaluate their answers after they take the exam.

The concepts in each chapter can be reinforced by using one or more of the features just listed. Professors' use of the features will vary depending on the level of their students and the course focus. A course that focuses mostly on financial markets may emphasize tools such as the WSJ Exercises and Part 1 of the Comprehensive Project (on taking positions in securities and derivative instruments). In contrast, a course that focuses on financial institutions may assign an exercise in which students must review recent annual

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reports (see Part 2 of the Comprehensive Project) to determine how a particular financial institution's performance is affected by its policies, industry regulations, and economic conditions. In addition, the Internet/Excel Exercises on financial institutions give students practice in assessing the operations and performance of financial institutions.

Supplements to the Text

To access the instructor resources, go to **www.cengage.com/login**, log in with your faculty account username and password, and use **ISBN 9781133947875** to search for and add instructor resources to your account Bookshelf.

- ***Instructor's Manual.*** Revised by the author, the instructor's manual contains the chapter outline for each chapter and a summary of key concepts for discussion as well as answers to the end-of-chapter Questions and Problems.
- ***Test Bank.*** The expanded test bank, which has also been revised by the author, contains a large set of questions in multiple choice or true/false format, including content questions as well as problems.
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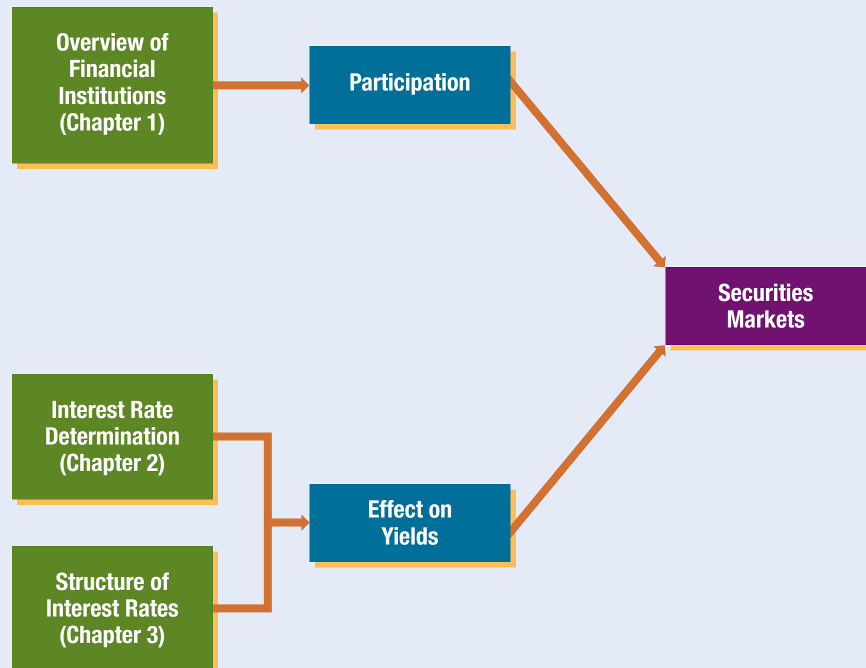
PART 1

Overview of the Financial Environment

Part 1 of this book focuses on the flow of funds across financial markets, interest rates, and security prices. Chapter 1 introduces the key financial markets and the financial institutions that participate in those markets. Chapter 2 explains how various factors influence interest rates and how interest rate movements in turn affect the values of securities purchased by financial institutions. Chapter 3 identifies factors other than interest rates that influence security prices. Participants in financial markets use this information to value securities and make investment decisions within financial markets.



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1

Role of Financial Markets and Institutions

CHAPTER OBJECTIVES

The specific objectives of this chapter are to:

- describe the types of financial markets that facilitate the flow of funds,
- describe the types of securities traded within financial markets,
- describe the role of financial institutions within financial markets, and
- explain how financial institutions were exposed to the credit crisis.

A **financial market** is a market in which financial assets (securities) such as stocks and bonds can be purchased or sold. Funds are transferred in financial markets when one party purchases financial assets previously held by another party. Financial markets facilitate the flow of funds and thereby allow financing and investing by households, firms, and government agencies. This chapter provides some background on financial markets and on the financial institutions that participate in them.

1-1 Role of Financial Markets

Financial markets transfer funds from those who have excess funds to those who need funds. They enable college students to obtain student loans, families to obtain mortgages, businesses to finance their growth, and governments to finance many of their expenditures. Many households and businesses with excess funds are willing to supply funds to financial markets because they earn a return on their investment. If funds were not supplied, the financial markets would not be able to transfer funds to those who need them.

Those participants who receive more money than they spend are referred to as **surplus units** (or investors). They provide their net savings to the financial markets. Those participants who spend more money than they receive are referred to as **deficit units**. They access funds from financial markets so that they can spend more money than they receive. Many individuals provide funds to financial markets in some periods and access funds in other periods.

EXAMPLE

College students are typically deficit units, as they often borrow from financial markets to support their education. After they obtain their degree, they earn more income than they spend and thus become surplus units by investing their excess funds. A few years later, they may become deficit units again by purchasing a home. At this stage, they may provide funds to and access funds from financial markets simultaneously. That is, they may periodically deposit savings in a financial institution while also borrowing a large amount of money from a financial institution to buy a home. ●

Many deficit units such as firms and government agencies access funds from financial markets by issuing **securities**, which represent a claim on the issuer. **Debt securities** represent debt (also called *credit*, or *borrowed funds*) incurred by the issuer. Deficit units that issue the debt securities are borrowers. The surplus units that purchase debt securities are creditors, and they receive interest on a periodic basis (such as every six months). Debt securities have a maturity date, at which time the surplus units can

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redeem the securities in order to receive the principal (face value) from the deficit units that issued them.

Equity securities (also called *stocks*) represent equity or ownership in the firm. Some large businesses prefer to issue equity securities rather than debt securities when they need funds but might not be financially capable of making the periodic interest payments required for debt securities.

1-1a Accommodating Corporate Finance Needs

A key role of financial markets is to accommodate corporate finance activity. Corporate finance (also called financial management) involves corporate decisions such as how much funding to obtain and what types of securities to issue when financing operations. The financial markets serve as the mechanism whereby corporations (acting as deficit units) can obtain funds from investors (acting as surplus units).

WEB

www.nyse.com
New York Stock Exchange market summary, quotes, financial statistics, and more.

www.nasdaq.com
Comprehensive historic and current data on all Nasdaq transactions.

1-1b Accommodating Investment Needs

Another key role of financial markets is accommodating surplus units who want to invest in either debt or equity securities. Investment management involves decisions by investors regarding how to invest their funds. The financial markets offer investors access to a wide variety of investment opportunities, including securities issued by the U.S. Treasury and government agencies as well as securities issued by corporations.

Financial institutions (discussed later in this chapter) serve as intermediaries within the financial markets. They channel funds from surplus units to deficit units. For example, they channel funds received from individuals to corporations. Thus they connect the investment management activity with the corporate finance activity, as shown in Exhibit 1.1. They also commonly serve as investors and channel their own funds to corporations.

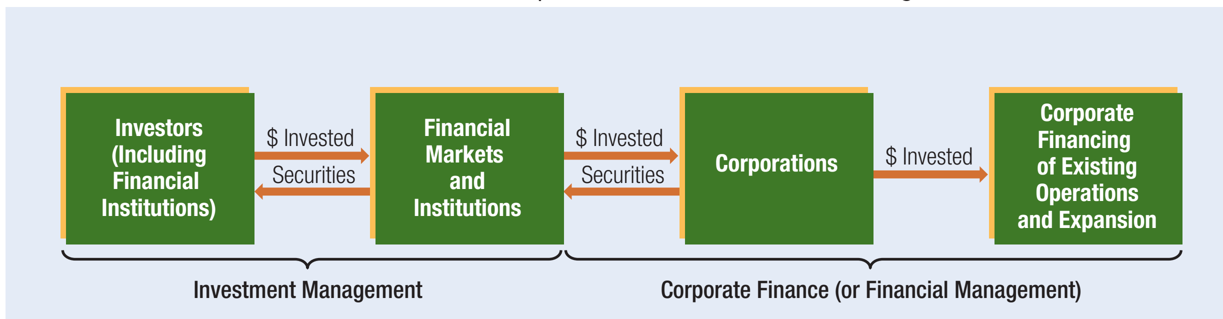
1-1c Primary versus Secondary Markets

Primary markets facilitate the issuance of new securities. **Secondary markets** facilitate the trading of existing securities, which allows for a change in the ownership of the securities. Many types of debt securities have a secondary market, so that investors who initially purchased them in the primary market do not have to hold them until maturity. Primary market transactions provide funds to the initial issuer of securities; secondary market transactions do not.

EXAMPLE

Last year, Riverto Co. had excess funds and invested in newly issued Treasury debt securities with a 10-year maturity. This year, it will need $15 million to expand its operations. The company decided to sell its holdings of Treasury debt securities in the secondary market even though those

Exhibit 1.1 How Financial Markets Facilitate Corporate Finance and Investment Management



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securities will not mature for nine more years. It received $5 million from the sale. In also issued its own debt securities in the primary market today in order to obtain an additional $10 million. Riverto's debt securities have a 10-year maturity, so investors that purchase them can redeem them at maturity (in 10 years) or sell them before that time to other investors in the secondary market. ●

An important characteristic of securities that are traded in secondary markets is **liquidity**, which is the degree to which securities can easily be liquidated (sold) without a loss of value. Some securities have an active secondary market, meaning that there are many willing buyers and sellers of the security at a given moment in time. Investors prefer liquid securities so that they can easily sell the securities whenever they want (without a loss in value). If a security is illiquid, investors may not be able to find a willing buyer for it in the secondary market and may have to sell the security at a large discount just to attract a buyer.

Treasury securities are liquid because they are frequently issued by the Treasury, and there are many investors at any point in time who want to invest in them. Conversely, debt securities issued by a small firm may be illiquid, as there are not many investors who may want to invest in them. Thus investors who purchase these securities in the primary market may not be able to easily sell them in the secondary market.

1-2 Securities Traded in Financial Markets

Securities can be classified as money market securities, capital market securities, or derivative securities.

1-2a Money Market Securities

Money markets facilitate the sale of short-term debt securities by deficit units to surplus units. The securities traded in this market are referred to as **money market securities**, which are debt securities that have a maturity of one year or less. These generally have a relatively high degree of liquidity, not only because of their short-term maturity but also because they are desirable to many investors and therefore commonly have an active secondary market. Money market securities tend to have a low expected return but also a low degree of credit (default) risk. Common types of money market securities include Treasury bills (issued by the U.S. Treasury), commercial paper (issued by corporations), and negotiable certificates of deposit (issued by depository institutions).

1-2b Capital Market Securities

Capital markets facilitate the sale of long-term securities by deficit units to surplus units. The securities traded in this market are referred to as **capital market securities**. Capital market securities are commonly issued to finance the purchase of capital assets, such as buildings, equipment, or machinery. Three common types of capital market securities are bonds, mortgages, and stocks, which are described in turn.

WEB

www.investinginbonds.com
Data and other information about bonds.

Bonds Bonds are long-term debt securities issued by the Treasury, government agencies, and corporations to finance their operations. They provide a return to investors in the form of interest income (coupon payments) every six months. Since bonds represent debt, they specify the amount and timing of interest and principal payments to investors who purchase them. At maturity, investors holding the debt securities are paid the principal. Bonds commonly have maturities of between 10 and 20 years.

Treasury bonds are perceived to be free from default risk because they are issued by the U.S. Treasury. In contrast, bonds issued by corporations are subject to default risk

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because the issuer could default on its obligation to repay the debt. These bonds must offer a higher expected return than Treasury bonds in order to compensate investors for that default risk.

Bonds can be sold in the secondary market if investors do not want to hold them until maturity. Because the prices of debt securities change over time, they may be worthless when sold in the secondary market than when they were purchased.

Mortgages Mortgages are long-term debt obligations created to finance the purchase of real estate. Residential mortgages are obtained by individuals and families to purchase homes. Financial institutions serve as lenders by providing residential mortgages in their role as a financial intermediary. They can pool deposits received from surplus units, and lend those funds to an individual who wants to purchase a home. Before granting mortgages, they assess the likelihood that the borrower will repay the loan based on certain criteria such as the borrower's income level relative to the value of the home. They offer prime mortgages to borrowers who qualify based on these criteria. The home serves as collateral in the event that the borrower is not able to make the mortgage payments.

Subprime mortgages are offered to some borrowers who do not have sufficient income to qualify for prime mortgages or who are unable to make a down payment. Subprime mortgages exhibit a higher risk of default, thus the lenders providing these mortgages charge a higher interest rate (and additional up-front fees) to compensate. Subprime mortgages received much attention in 2008 because of their high default rates, which led to the credit crisis. Many lenders are no longer willing to provide subprime mortgages, and recent regulations (described later in this chapter) raise the minimum qualifications necessary to obtain a mortgage.

Commercial mortgages are long-term debt obligations created to finance the purchase of commercial property. Real estate developers rely on commercial mortgages so they can build shopping centers, office buildings, or other facilities. Financial institutions serve as lenders by providing commercial mortgages. By channeling funds from surplus units (depositors) to real estate developers, they serve as a financial intermediary and facilitate the development of commercial real estate.

Mortgage-Backed Securities Mortgage-backed securities are debt obligations representing claims on a package of mortgages. There are many forms of mortgage-backed securities. In their simplest form, the investors who purchase these securities receive monthly payments that are made by the homeowners on the mortgages backing the securities.

EXAMPLE

Mountain Savings Bank originates 100 residential mortgages for home buyers and will service the mortgages by processing the monthly payments. However, the bank does not want to use its own funds to finance the mortgages. It issues mortgage-backed securities that represent this package of mortgages to eight financial institutions that are willing to purchase all of these securities. Each month, when Mountain Savings Bank receives interest and principal payments on the mortgages, it passes those payments on to the eight financial institutions that purchased the mortgage-backed securities and thereby provided the financing to the homeowners. If some of the homeowners default on their payments, the payments, and thus the return on investment earned by the financial institutions that purchased the mortgage-backed securities, will be reduced. The securities they purchased are backed (collateralized) by the mortgages.

In many cases, the financial institution that originates the mortgage is not accustomed to the process of issuing mortgage-backed securities. If Mountain Savings Bank is unfamiliar with the process, another financial institution may participate by bundling Mountain's 100 mortgages with mortgages originated by other institutions. Then the financial institution issues mortgage-backed

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securities that represent all the mortgages in the bundle. Thus any investor that purchases these mortgage-backed securities is partially financing the 100 mortgages at Mountain Savings Bank and all the other mortgages in the bundle that are backing these securities. ●

As housing prices increased in the 2004–2006 period, many financial institutions used their funds to purchase mortgage-backed securities, some of which represented bundles of subprime mortgages. These financial institutions incorrectly presumed that the homes would serve as sufficient collateral if the mortgages defaulted. In 2008, many subprime mortgages defaulted and home prices plummeted, which meant that the collateral was not adequate to cover the credit provided. Consequently, the values of mortgage-backed securities also plummeted, and the financial institutions holding these securities experienced major losses.

Stocks Stocks (or equity securities) represent partial ownership in the corporations that issue them. They are classified as capital market securities because they have no maturity and therefore serve as a long-term source of funds. Investors who purchase stocks (referred to as stockholders) issued by a corporation in the primary market can sell the stocks to other investors at any time in the secondary market. However, stocks of some corporations are more liquid than stocks of others. More than a million shares of stocks of large corporations are traded in the secondary market on any given day, as there are many investors who are willing to buy them. Stocks of small corporations are less liquid, because the secondary market is not as active.

Some corporations provide income to their stockholders by distributing a portion of their quarterly earnings in the form of dividends. Other corporations retain and reinvest all of their earnings in their operations, which increase their growth potential.

As corporations grow and increase in value, the value of their stock increases; investors can then earn a capital gain from selling the stock for a higher price than they paid for it. Thus, investors can earn a return from stocks in the form of periodic dividends (if there are any) and in the form a capital gain when they sell the stock. However, stocks are subject to risk because their future prices are uncertain. Their prices commonly decline when the firm performs poorly, resulting in negative returns to investors.

1-2c Derivative Securities

WEB

www.cboe.com
Information about derivative securities.

In addition to money market and capital market securities, derivative securities are also traded in financial markets. **Derivative securities** are financial contracts whose values are derived from the values of underlying assets (such as debt securities or equity securities). Many derivative securities enable investors to engage in speculation and risk management.

Speculation Derivative securities allow an investor to speculate on movements in the value of the underlying assets without having to purchase those assets. Some derivative securities allow investors to benefit from an increase in the value of the underlying assets, whereas others allow investors to benefit from a decrease in the assets' value. Investors who speculate in derivative contracts can achieve higher returns than if they had speculated in the underlying assets, but they are also exposed to higher risk.

Risk Management Derivative securities can be used in a manner that will generate gains if the value of the underlying assets declines. Consequently, financial institutions and other firms can use derivative securities to adjust the risk of their existing investments in securities. If a firm maintains investments in bonds, it can take specific positions in derivative securities that will generate gains if bond values decline. In this way,

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derivative securities can be used to reduce a firm's risk. The loss on the bonds is offset by the gains on these derivative securities.

1-2d Valuation of Securities

Each type of security generates a unique stream of expected cash flows to investors. The valuation of a security is measured as the present value of its expected cash flows, discounted at a rate that reflects the uncertainty surrounding the cash flows.

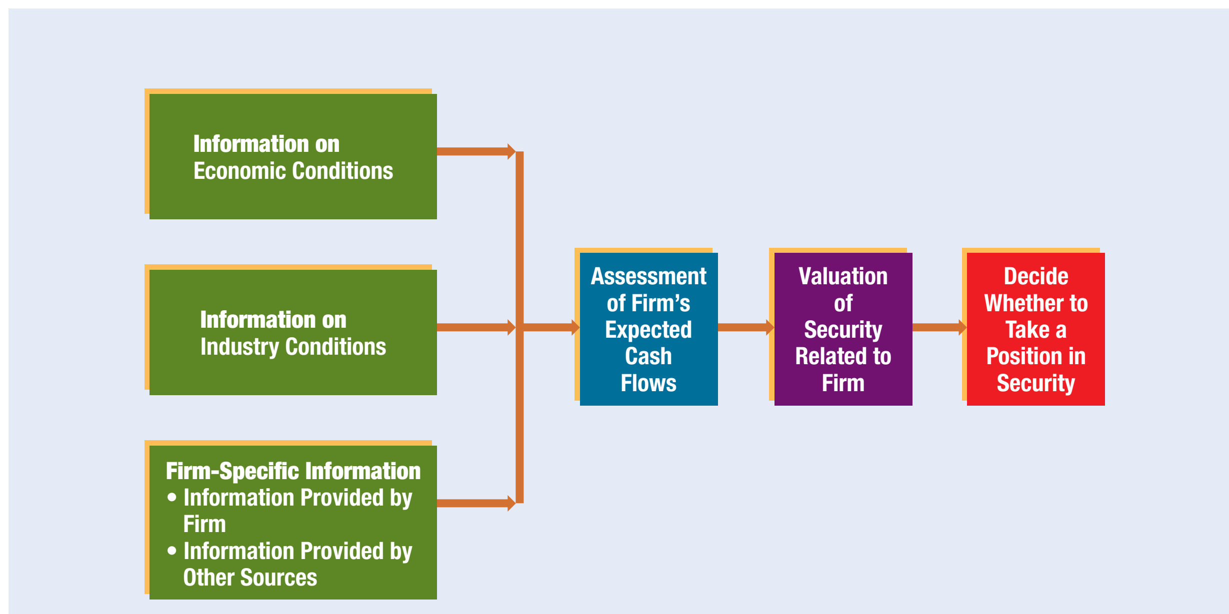
Debt securities are easier to value because they promise to investors specific payments (interest and principal) until they mature. The stream of cash flows generated by stocks is more difficult to estimate because some stocks do not pay dividends, and so investors receive cash flow only when they sell the stock. All investors sell the stock at different times. Thus some investors choose to value a stock by valuing the company and then dividing that value by the number of shares of stock.

Impact of Information on Valuation Investors can attempt to estimate the future cash flows that they will receive by obtaining information that may influence a security's future cash flows. The valuation process is illustrated in Exhibit 1.2.

Some investors rely mostly on economic or industry information to value a security, whereas others rely more on published opinions about the firm's management. When investors receive new information about a security that clearly indicates the likelihood of higher cash flows or less uncertainty surrounding the cash flows, they revise their valuations of that security upward. As a result, investors increase the demand for the security. In addition, investors that previously purchased that security and were planning to sell the security in the secondary market may decide not to sell. This results in a smaller supply of that security for sale (by investors who had previously purchased it) in the secondary market. Thus the market price of the security rises to a new equilibrium level.

Conversely, when investors receive unfavorable information, they reduce the expected cash flows or increase the discount rate used in valuation. The valuations of the security

Exhibit 1.2 Use of Information to Make Investment Decisions



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are revised downward, which results in a lower demand and an increase in the supply of that security for sale in the secondary market. Consequently, there is a decline in the equilibrium price.

In an **efficient market**, securities are rationally priced. If a security is clearly undervalued based on public information, some investors will capitalize on the discrepancy by purchasing that security. This strong demand for the security will push the security's price higher until the discrepancy no longer exists. The investors who recognized the discrepancy will be rewarded with higher returns on their investment. Their actions to capitalize on valuation discrepancies typically push security prices toward their proper price levels, based on the information that is available.

Impact of the Internet on Valuation The Internet has improved the valuation of securities in several ways. Prices of securities are quoted online and can be obtained at any given moment by investors. For some securities, investors can track the actual sequence of transactions. Because much more information about the firms that issue securities is available online, securities can be priced more accurately. Furthermore, orders to buy or sell many types of securities can be submitted online, which expedites the adjustment in security prices to new information.

WEB

finance.yahoo.com
Market quotations and overview of financial market activity.

Impact of Behavioral Finance on Valuation In some cases, a security may be mispriced because of the psychology involved in the decision making. **Behavioral finance** is the application of psychology to make financial decisions. It offers a reason why markets are not always efficient.

EXAMPLE

When Facebook issued stock to the public in May 2012, many critics suggested that the initial high stock price was influenced by market hype rather than fundamentals (such as its expected cash flows). Some of Facebook's customers may invest in Facebook's stock because they commonly use Facebook's services, without really considering whether the stock price was appropriate. Facebook's stock price declined by about 50 percent in a few months as the hype in the stock market wore off. ●

Behavioral finance can sometimes explain the movements of a security's price or even of the entire stock market. In some periods, investors seem to be excessively optimistic, and their stock-buying frenzy can push the prices of the entire stock market higher. This leads to a stock price bubble that bursts once investors consider fundamental characteristics (such as a firm's cash flows) rather than hype when valuing a stock.

Uncertainty Surrounding Valuation of Securities Even if markets are efficient, the valuation of a firm's security is subject to much uncertainty because investors have limited information available to value that security. Furthermore, the return from investing in a security over a particular period is typically uncertain because the cash flows to be received by investors over that period is uncertain. The higher the degree of uncertainty, the higher is the risk from investing in that security. From the perspective of an investor who purchases a security, risk represents the potential deviation of the security's actual return from what was expected. For any given type of security, risk levels among the issuers of that security can vary.

EXAMPLE

Nike stock provides cash flows to investors in the form of quarterly dividends and when an investor sells the stock. Both the future dividends and the future stock price are uncertain. Thus the cash flows that Nike stock will provide to investors over a future period are uncertain, which means that the return from investing in Nike stock over that period is uncertain.

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