

PART  
**One**

# Bond Evaluation

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## CHAPTER 1

# Overview of the Financial System

### 1.1 REAL AND FINANCIAL ASSETS

Most new businesses begin when an individual or a group of individuals come up with an idea: manufacturing a new type of computer, developing land for a future housing subdivision, or launching a new Internet company. To make the idea a commercial reality, though, requires funds that the individual or group generally lacks or personally does not want to commit. Consequently, the fledgling business sells *financial claims or instruments* to raise the funds necessary to buy the capital goods (equipment, land, etc.), as well as the human capital (architects, engineers, lawyers, etc.) needed to launch the project. Technically, such instruments are claims against the income of the business represented by a certificate, receipt, or other legal document. In this process of initiating and implementing the idea, both real and financial assets are therefore created. The *real assets* consist of both the tangible and intangible capital goods, as well as human capital, which are combined with labor to form the business. The business, in turn, transforms the idea into the production and sale of goods or services that will generate a future stream of earnings. The *financial assets*, on the other hand, consist of the financial claims on the earnings. Those individuals or institutions that provided the initial funds and resources hold these assets. Furthermore, if the idea is successful, then the new business may find it advantageous to initiate other new projects that it again may finance through the sale of financial claims. Thus, over time, more real and financial assets are created.

The creation of financial claims, of course, is not limited to the business sector. The federal government's expenditures on national defense and the space program and state governments' expenditures on the construction of highways, for example, represent the development of real assets that these units of government often finance through the sale of financial claims on either the revenue generated from a particular public sector project or from future tax revenues. Similarly, the purchase of a house or a car by a household often is financed by a loan from a savings and loan or commercial bank. The loan represents a claim by the financial institution on a portion of the borrower's future income, as well as a claim on the ownership of the real asset (house or car) in the event the household defaults on its promise.

Modern economies expend enormous amounts of money on real assets to maintain their standards of living. Such expenditures usually require funds that are beyond the levels a business, household, or unit of government has or wants to commit at a given point in time. As a result, to raise the requisite amounts, economic entities

sell financial claims. Those buying the financial claims therefore supply funds to the economic entity in return for promises that the entity will provide them with a future flow of income. As such, financial claims can be described as financial assets.

All financial assets provide a promise of a future return to the owners. Unlike real assets, though, financial assets do not depreciate (since they are in the form of certificates or information in a computer file), and they are *fungible*, meaning they can be converted into cash or other assets. There are many different types of financial assets. All of them, though, can be divided into two general categories—equity and debt. Common stock is the most popular form of equity claim. It entitles the holder to dividends or shares in the business's residual profit and participation in the management of the firm, usually indirectly through voting rights. The stock market, where existing stock shares are traded, is the most widely followed market in the world and it receives considerable focus in many investments and securities analysis texts. The focus of this book, though, is on the other general type of financial asset—debt. Businesses finance more of their real assets and operations with debt than equity, whereas governments and households finance their entire real assets and operations with debt. This chapter provides a preliminary overview of the types of debt securities and markets, whereas Chapters 6–12 provide a more detailed analysis.

## 1.2 TYPES OF DEBT CLAIMS

*Debt claims* are loans whereby the borrower agrees to pay a fixed income per period, defined as a coupon or interest, and to repay the borrowed funds, defined as the principal (also called redemption value, maturity value, par value, and face value). Within this broad description, debt instruments can take on many different forms. For example, debt can take the form of a loan by a financial institution such as a commercial bank, insurance company, or savings and loan bank. In this case, the terms of the agreement and the contract instrument generally are prepared by the lender/creditor, and the instrument often is nonnegotiable, meaning it cannot be sold to another party. A debt instrument also can take the form of a bond or note, whereby the borrower obtains her loan by selling (also referred to as issuing) contracts or IOUs to pay interest and principal to investors/lenders. Many of these claims, in turn, are negotiable, often being sold to other investors before they mature.

Debt instruments also can differ in terms of the features of the contract: the number of future interest payments, when and how the principal is to be paid—at maturity (i.e., the end of the contract) or spread out over the life of the contract (amortized)—and the recourse the lender has should the borrower fail to meet her contractual commitments (i.e., collateral or security). For many debt instruments, standard features include the following:

1. **Term to Maturity:** Number of years over which the issuer promises to meet the obligations. (Maturity refers to the date that the debt will cease to exist.) Generally, bonds with maturities between 1 and 5 years are considered short term; those with maturities between 5 and 12 years are considered intermediate-term; and those with maturities greater than 12 years are considered long term.
2. **Principal:** The amount that the issuer/borrower agrees to repay the bondholder/lender.

3. **Coupon Rate** (or Nominal Rate): The rate the issuer/borrower agrees to pay each period. The dollar amount is called the coupon. There are, though, zero coupon bonds in which the investor earns interest between the price paid and the principal, and floating-rate notes where the coupon rate is reset periodically based on a formula.
4. **Amortization:** The principal repayment of a bond can be repaid either at maturity or over the life of the bond. When principal is repaid over the life of the bond, there is a schedule of principal repayments. The schedule is called the amortization schedule. Securities with an amortization schedule are called amortizing securities, whereas securities without an amortized schedule (those paying total principal at maturity) are called nonamortizing securities.
5. **Embedded Options:** Bonds often have embedded option features in their contracts, such as a call feature giving the issuer the right to buy back the bond from the bondholder before maturity at a specific price—a *callable bond*.

Finally, the type of borrower or issuer—business, government, household, or financial institution—can differentiate the debt instruments. Businesses sell three general types of debt instruments, *corporate bonds*, *medium-term notes*, and *commercial paper*, and borrow from financial institutions, usually with long-term or intermediate-term loans from commercial banks or insurance companies and with short-term *lines of credit* from banks. The corporate bonds they sell usually pay the buyer/lender coupon interest semiannually and a principal at maturity. For example, a manufacturing company building a \$10 million processing plant might finance the cost by selling 10,000 bonds at a price of \$1,000 per bond, with each bond promising to pay \$50 in interest every June 15th and January 15th for the next 10 years and a principal of \$1,000 at maturity. In general, corporate bonds are long-term securities, sometimes secured by specific real assets that bondholders can claim in case the corporation fails to meet its contractual obligation (defaults). Corporate bonds also have a priority of claims over stockholders on the company's earnings and assets in the case of default. Medium-term notes (MTNs) issued by a corporation are debt instruments sold through agents on a continuing basis to investors who are allowed to choose from a group of bonds from the same corporation, but with different maturities and features. Such instruments allow corporations flexibility in the way in which they can finance different capital projects. Commercial paper is a short-term claim (less than one year) that usually is unsecured. Typically, commercial paper is sold as a zero-discount note in which the buyer receives interest equal to the difference between the principal and the purchase price. For example, a company might sell paper promising to pay \$1,000 at the end of 270 days for \$970, yielding a dollar return of \$30. Term loans to businesses have intermediate- to long-term maturities, often with the principal amortized. Like all debt instruments, these loans have a priority of claims on income and assets over equity claims, and the financial institution providing the loan often requires collateral. Finally, lines of credit are short-term loans provided by banks and other financial institutions in which the business can borrow up to a maximum amount of funds from a checking account created for it by the institution.

The federal government sells a variety of financial instruments, ranging from short-term *Treasury bills* to intermediate- and long-term *Treasury notes* and *Treasury bonds*. These instruments are sold by the Treasury to finance the federal deficit

and to refinance current debt. In addition to Treasury securities, agencies of the federal government, such as the Tennessee Valley Authority, and government-sponsored corporations, such as the Federal National Mortgage Association and the Federal Farm Credit Banks, also issue securities, classified as *Federal Agency Securities*, to finance a variety of government programs ranging from the construction of dams to the purchase of mortgages to provide liquidity to mortgage lenders. The agency sector includes securities issued by federal agencies and also federally related institutions, referred to as *government-sponsored enterprises*. Similarly, state and local governments, agencies, and authorities also offer a wide variety of debt instruments, broadly classified as either *general obligation bonds* or *revenue bonds*. The former are bonds financed through general tax revenue, whereas the latter are instruments financed from the revenue from specific state and local government projects and programs.

Finally, there are financial intermediaries such as commercial banks, savings and loans, credit unions, savings banks, insurance companies, and investment funds that provide debt claims. These intermediaries sell or provide financial claims to investors, and then use the proceeds to purchase debt and equity claims or to provide direct loans. In general, financial institutions, by acting as intermediaries, control a large amount of funds and thus have a significant impact on financial markets. For borrowers, intermediaries are an important source of funds; they buy many of the securities issued by corporations and governments and provide many of the direct loans. For investors, intermediaries create a number of securities for them to include in their short-term and long-term portfolios. These include negotiable certificates of deposit, bankers' acceptances, mortgage-backed instruments, asset-backed securities, collateralized debt obligation, investment fund shares, annuities, and guaranteed investment contracts.

### **1.3 FINANCIAL MARKET**

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Markets are conduits through which buyers and sellers exchange goods, services, and resources. In an economy there are three types of markets: a product market where goods and services are traded, a factor market where labor, capital, and land are exchanged, and a financial market where financial claims are traded. The financial market, in turn, channels the savings of households, businesses, and governments to those economic units needing to borrow.

The financial market can be described as a market for loanable funds. The supply of loanable funds comes from the savings of households, the retained earnings of businesses, and the surpluses of governments. The demand for loanable funds emanates from businesses who need to raise funds to finance their capital purchases of equipment, plants, and inventories; households who need to purchase houses, cars, and other consumer durables; and the Treasury, federal agencies, and municipal governments who need to finance the construction of public facilities, projects, and operations. The exchange of loanable funds from savers to borrowers is done either directly through the selling of financial claims (stock, bonds, commercial paper, etc.) or indirectly through financial institutions.

The financial market facilitates the transfer of funds from *surplus economic units* to *deficit economic units*. A surplus economic unit is an entity whose income from

its current production exceeds its current expenditures; it is a saver or net lender. A deficit unit, on the other hand, is an entity whose current expenditures exceed its income from its current production; it is a net borrower. Although businesses, households, and governments fluctuate from being deficit units one period to surplus units in another period, on average, households tend to be surplus units whereas businesses and government units tend to be deficit units. A young household usually starts as a deficit unit as it acquires homes and cars financed with mortgages and auto loans. In its midlife, the household's income usually is higher and its mortgage and other loans are often paid; at that time the household tends to become a surplus unit, purchasing financial claims. Finally, near the end of its life, the household lives off the income from its financial claims. In contrast, businesses tend to invest or acquire assets that cost more than the earnings they retain. As a result, businesses are almost always deficit units, borrowing or selling bonds and stocks; furthermore, they tend to remain that way throughout their entire life. Similarly, the federal government's expenditures on defense, education, and welfare have more often exceeded its revenues from taxes. Thus, the federal government, as well as state and local units, tend to be deficit units.

## 1.4 TYPES OF FINANCIAL MARKETS

Financial markets can be classified in terms of whether the market is for new or existing claims (primary or secondary market), for short-term or long-term instruments (money or capital market), for direct or indirect trading between deficit and surplus units (direct or intermediary market), for domestic or foreign securities, and for immediate, future, or optional delivery (cash, futures, or options markets).

### Primary and Secondary Market

The *primary market* is that market where financial claims are created. It is the market in which new securities are sold for the first time. Thus, the sale of new government securities by the U.S. Treasury to finance a government deficit, or a \$100 million bond issue by Procter and Gamble to finance the construction of a new soap manufacturing plant, are examples of securities transactions occurring in the primary market. The principal function of the primary market is to raise the funds needed to finance investments in new plants, equipment, inventories, homes, roads, and the like—it is where capital formation begins.

The *secondary market* is the market for the buying and selling of existing assets and financial claims. Its economic function is to provide marketability—ease or speed in trading a security. Given the accumulation of financial claims over time, the volume of trading on the secondary market far exceeds the volume in the primary market. The buying and selling of existing securities is done primarily through a network of brokers and dealers who operate through organized securities exchanges and the *over-the-counter (OTC)* market. Brokers and dealers serve the function of bringing buyers and sellers together by finding opposite positions or by taking positions in a security. By definition, *brokers* are agents who bring securities buyers and sellers together for a commission. *Dealers*, in turn, provide markets for investors to buy and sell securities by taking a temporary position in a security; they buy from investors

who want to sell and sell to those who want to buy. Dealers receive compensation in terms of the spread between the *bid price* at which they buy securities and the *asked price* at which they sell securities. Whereas brokers and dealers serve the function of bringing buyers and sellers together, exchanges serve the function of linking brokers and dealers together to buy and sell existing securities. In the United States, there is the *New York Stock Exchange (NYSE)* and several regional organized exchanges. Outside the United States, there are major exchanges in such cities as London, Tokyo, Hong Kong, Singapore, Sydney, and Paris. In addition to organized exchanges, a large number of existing securities and a large proportion of bonds are traded on the OTC market.

**New York Stock Exchange** The NYSE was formed in 1792 by a group of merchants who wanted to trade notes and bonds. Since then it has grown to an exchange in which stocks and a limited number of bonds, Exchange-Traded Funds (ETFs), and other securities are traded. The NYSE can be described as a corporate association consisting of member brokers. Most brokerage firms with membership (seats) on the NYSE function as commission brokers, executing buy and sell orders on behalf of their clients. The NYSE and a number of other organized exchanges provide a continuous market. A continuous market attempts to have constant trading in a security. To have such a feature, time discrepancies caused by different times when investors want to sell and when others want to buy must be eliminated or at least minimized. In a continuous market this is accomplished by having *specialists* or *designated market makers (DMMs)*. Specialists and DMMs are dealers who are part of the exchange and who are required by the exchange to take opposite positions in a security if conditions dictate. Under a specialist system, the exchange board assigns a specific security to a specialist to deal. In this role, a specialist acts by buying the stock from sellers at low bid prices and selling to buyers at (they hope!) higher asked prices. Specialists and DMMs quote a bid price to investors when selling the security and an asked price to investors interested in buying. They hope to profit from the difference between the bid and asked prices; that is, the *bid-asked spread*. In addition to dealing, the NYSE and other exchanges using a specialist system also require that the specialists maintain the *limit order book* (which appears on their computer screens) on the securities they are assigned and that they execute these orders. A *limit order* is an investor's request to his broker to buy or sell a security at a given price or better. On the NYSE, such orders are taken by commission brokers and left with the specialist in that security for execution.<sup>1</sup>

In April 2007, the NYSE became part of NYSE Euronext, a holding company created by combining the NYSE Group, Inc. and Euronext N.V. NYSE Euronext can be described as a transatlantic exchange group that brings together six equities exchanges and six derivatives exchanges, providing physical and electronic trading in stocks, bonds, and derivatives. In the United States, NYSE Euronext includes the NYSE physical exchange and *NYSE Arca*. NYSE Arca is a fully electronic stock exchange, trading more than 8,000 exchange-listed equity securities. NYSE Arca's trading platform links traders to multiple U.S. market centers and provides customers with fast electronic execution and open, direct, and anonymous market access. NYSE Arca's functions are based on a price-time priority system.<sup>2</sup>

**Over-the-Counter Market** The OTC market is an informal exchange for the trading of stocks, corporate and municipal bonds, investment fund shares, asset-backed securities, shares in limited partnerships, and Treasury and federal agency securities. It can be described as a fragmented, noncentralized market of brokers and dealers linked to each other by a computer, telephone, and telex communication system. To trade, dealers must register with the *Securities and Exchange Commission (SEC)*. As dealers, they can quote their own bid and asked prices on the securities they deal, and as brokers, they can execute a trade with a dealer providing a quote. The securities traded on the OTC market are those in which a dealer decides to take a position. Dealers on the OTC market range from regional brokerage houses making a market in a local corporation's stocks or bonds, to large financial companies (such as Merrill Lynch) making markets in Treasury securities, to investment bankers dealing in the securities they had previously underwritten, to dealers in federal agency securities and municipal bonds. Like the specialist on the organized exchanges, each dealer maintains an inventory in a security and quotes a bid and an asked price at which she is willing to buy and sell. Initially, the *National Association of Securities Dealers (NASD)* regulated OTC trading. In July 2007, the *Financial Industry Regulatory Authority (FINRA)*, the largest independent regulator for all securities firms doing business in the United States, consolidated NASD and the member regulation, enforcement, and arbitration functions of the NYSE. Although no physical exchange exists, communication among brokers and dealers takes place through a computer system known as the *National Association of Securities Dealers Automatic Quotation System, NASDAQ*. NASDAQ is an information system in which current bid-asked quotes of dealers are offered, and also a system that sends brokers' quotes to dealers, enabling them to close trades.<sup>3</sup>

**Electronic Trading Market** There are several other types of secondary market trading for stock. For example, the NYSE features both a physical auction convened by DMMs and a completely automated auction that includes algorithmic quotes from DMMs and other participants. As noted, NYSE Arca is an electronic stock exchange, trading more than 8,000 exchange-listed (NASDAQ included) equity securities. NYSE Euronext also has ArcaEdge, which is an all-electronic matching system trading OTC stocks. The ArcaEdge platform offers best-price executions based on liquidity, transparency, speed and anonymity. There are also *crossing network* and *electronic communication network (ECN)* systems. The crossing network system allows institutional investors to cross order, matching buy and sell orders directly via computers. The ECN is a privately-owned broker-dealer network that operates with NASDAQ.

**Secondary Market for Bonds** The secondary market for bonds in the United States and throughout the world is not centralized, but rather is part of the OTC market. As noted, the OTC market consists of a network of noncentralized or fragmented market makers who provide bid and offer quotes for each issue they participate in. There are some corporate bonds that are listed on physical exchanges. Such bonds are sometimes said to be trading in the "Bond Room." Although they may be listed, they are more likely to be traded via dealers on the OTC market than on the exchange. There is also a transition to electronic trading. For example, NYSE Euronext recently began offering an all-electronic platform for trading NYSE bonds

based on a price-time priority system. There are developing multi-dealer systems that allow customers to execute bond trades from multiple quotes. The systems display the best bid or offer prices of those posted by all dealers. The participating dealers usually act as the principal in the transaction. There are also developing single-dealer systems that allow investors to execute transactions directly with the specific dealers desired.

### WEB INFORMATION

For information on NYSE Euronext, go to [www.nyse.com](http://www.nyse.com).

For information on the OTC market, go to [www.finra.org/index.htm](http://www.finra.org/index.htm) and [www.nasdaq.com](http://www.nasdaq.com).

For financial information on securities, market trends, and analysis, see:

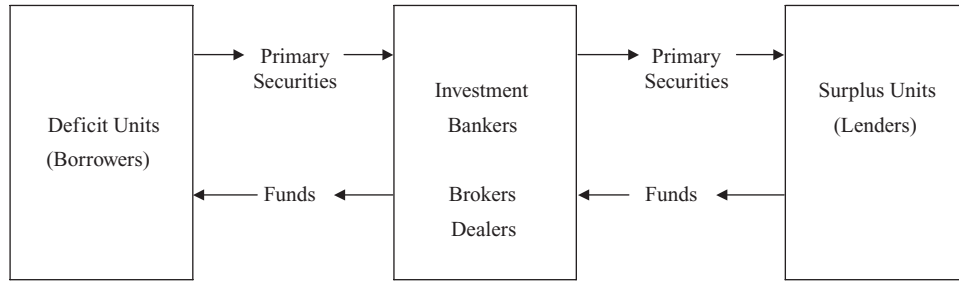
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### Direct and Intermediate Financial Markets

In addition to being classified as primary or secondary, markets for financial instruments can also be classified in terms of being either part of the direct financial market or the intermediary financial market.

**Direct Financial Market** The *direct financial market* is where surplus units purchase claims issued by the ultimate deficit unit. This market includes the trading of stocks, corporate bonds, Treasury securities, federal agency securities, and municipal bonds. The claims traded in the direct financial market are referred to as *primary securities*.<sup>4</sup>

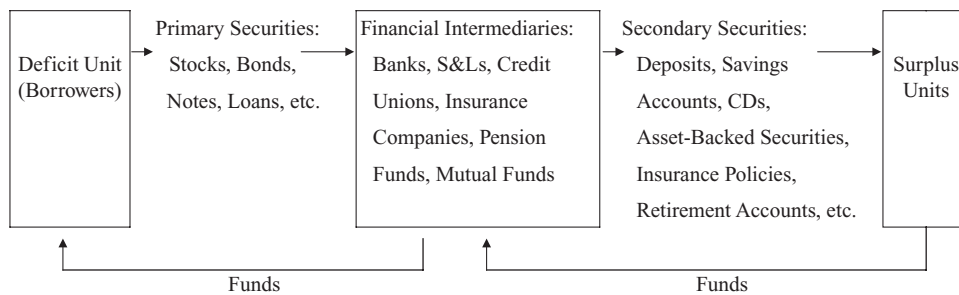
As is the case with many securities markets, the direct financial market can be divided into primary and secondary markets. The secondary market for direct financial claims takes place in both the organized exchanges and the OTC market just discussed. In the primary market, new securities are sold either in a negotiated market or an open market. In a *negotiated market*, the securities are issued to one or just a few economic entities under a private contract. Such sales are referred to as a *private placement*. In an open market transaction, the securities are sold to the public at large. The key participant in *open market trades* is the *investment banker*. The investment banker is a middleperson or matchmaker who, for a fee or share in



**FIGURE 1.1** Direct Financial Market

the trading profit, finds surplus units who want to buy the security being offered by a deficit unit (see Figure 1.1). The major investment bankers include such firms as Merrill Lynch and Goldman Sachs. Investment bankers sell a security issue for the issuer for a commission (i.e., for a percentage of the total issue's value) using their *best effort, underwrite* the securities (i.e., buy the securities from the issuer and then sell them at hopefully a higher price), or form an *underwriting syndicate* whereby a group of investment bankers buys and sells the issue. Whatever the arrangements, the primary function of the investment banker is to match the needs of the surplus and deficit units. By performing this function the investment banker reduces the search and information costs to both the investors and the issuer, facilitating the efficient operation of the primary market.

**Intermediary Financial Market** The intermediary financial market consists of financial institutions such as commercial banks, savings and loans, credit unions, insurance companies, pension funds, trust funds, and mutual funds. In this market, the financial institution, as shown in Figure 1.2, sells financial claims (checking accounts, savings accounts, certificates of deposit, mutual fund shares, payroll deduction plans, insurance plans, and the like) to surplus units, and uses the proceeds to purchase claims (stocks, bonds, etc.) issued by ultimate deficit units or to create financial claims in the form of term loans, lines of credit, and mortgages. Through their intermediary function, financial institutions in turn create intermediate securities, referred to as *secondary securities*.



**FIGURE 1.2** Intermediary Financial Market

Financial institutions can be divided into three categories: *depository institutions*, *contractual institutions*, and *investment companies*. Depository institutions include commercial banks, credit unions, savings and loans, and savings banks. These institutions obtain large amounts of their funds from deposits, which they use primarily to fund commercial and residential loans and to purchase Treasury, federal agency, and municipal securities. Contractual institutions include life insurance companies, property and casualty insurance companies, and pension funds. They obtain their funds from legal contracts to protect businesses and households from risk (premature death, accidents, etc.) and from savings plans. Investment companies include mutual funds, money market funds, and real estate investment trusts. These institutions raise funds by selling equity or debt claims, and then use the proceeds to buy debt securities, stocks, real estate, and other assets. The claims they sell entitle the holder/buyer either to a fixed income each period or a pro rata share in the ownership and earnings generated from the asset fund. Also included with investment company securities are *securitized assets*. Banks, insurance companies, and other financial intermediaries, as well as federal agencies, sell these financial assets. In creating a securitized asset, an intermediary will put together a package of loans of a certain type (mortgages, auto loans, credit cards, etc.). The institution then sells claims on the package to investors, with the claim being secured by the package of assets—securitized assets. The package of loans, in turn, generates interest and principal that is passed on to the investors who purchased the securitized asset.<sup>5</sup>

Some of the financial claims created in the intermediary financial market do not have a secondary market; that is, secondary markets where investors sell their bank saving accounts or insurance or pension plans to other investors are rare. However, there are secondary markets for many intermediary securities: negotiable certificates of deposit, mutual fund shares, and securitized assets.

### WEB INFORMATION

Data on most financial intermediaries is prepared by the Federal Reserve and is published in the *U.S. Flow of Funds* report. The report can be accessed from [www.federalreserve.gov/releases](http://www.federalreserve.gov/releases) (click “Flow of Funds Account” tab).

For additional information on investment funds, see the Investment Company Institute’s Web site: [www.ici.org](http://www.ici.org).

### Money and Capital Markets

Financial markets can also be classified in terms of the maturity of the instrument traded. Specifically, the *money market* is defined as the market where short-term instruments (by convention defined as securities with original maturities of one year or less) are traded, and the *capital market* is defined as the market where long-term securities (original maturities over one year) are traded. The former includes such securities as certificates of deposit, commercial paper, Treasury bills, savings accounts, and shares in money market investment funds, whereas the latter includes corporate

bonds, municipal bonds, securitized assets, Treasury bonds, and investment fund shares, as well as corporate stock. Investors with long-term liabilities or investment horizons buy securities in the capital markets. This includes many institutional investors, such as life insurance companies and pensions. The issuers of capital market securities include corporations and governments who use the market to finance their long-term capital formation projects. Investors use the money market to earn interest on excess funds that they expect to have only temporarily. They also hold funds in money market securities as a store of value when they are waiting to take advantage of investment opportunities or when they fear precarious economic conditions are possible. The sellers of money market securities use the market to raise funds to finance their short-term assets (inventory or accounts receivable), to take care of cash needs resulting from the lack of synchronization between cash inflows and outflows from operations, or in the case of the U.S. Treasury to finance the government's deficit or to refinance its maturing debt. It should be noted that the money market functions primarily as a *wholesale market*, in which many of the transactions are done by large banks and investment firms who buy and sell in large denominations. This feature helps to promote the popularity of money market funds. These funds pool the investments of small investors and invest them in money market securities, providing small investors an opportunity to obtain higher returns than they could obtain from individual bank savings accounts.

### Foreign Securities Markets

Over the last three decades there has been a substantial growth in the number of equity and fixed-income securities traded globally. This growth in the size of world equity and debt markets is reflected by the significant increase in global securities investments among nonresidents. The popularity of global investments is generally attributed to the growing number of corporations, governments, and financial intermediaries issuing securities in foreign countries; to the emergence of currency futures, options, and swaps markets that have made it possible for investors to better manage exchange-rate risk; and to the potential diversification benefits investors can obtain by adding foreign stocks and bonds to their portfolios.

In general, an investor looking to internationally diversify his bond portfolio has several options. First, he might buy a bond of a foreign government or foreign corporation that is issued in the foreign country or traded on that country's exchange. These bonds are referred to as *domestic bonds*.<sup>6</sup> Secondly, the investor might be able to buy bonds issued in a number of countries through an international syndicate. Such bonds are known as *Eurobonds*. Finally, an investor might be able to buy a bond of a foreign government or corporation being issued or traded in his own country. These bonds are called *foreign bonds*. If the investor were instead looking for short-term foreign investments, his choices would similarly include buying short-term domestic securities such as commercial paper, CDs, and Treasuries issued in those countries, Eurocurrency CDs issued by Eurobanks, and foreign money market securities issued by foreign corporations and governments in the local country. Similarly, a domestic financial institution or nonfinancial multinational corporation looking to raise funds may choose to do so by selling debt securities or borrowing in the company's own financial markets, the foreign markets, or the Eurobond or Eurocurrency markets. The markets where domestic, foreign, and Euro securities are issued and traded can

be grouped into two categories—the *internal bond market* and the *external bond market*. The internal market, also called the *national market*, consists of the trading of both domestic bonds and foreign bonds; the external market, also called the *offshore market*, is where Eurobonds and Eurodeposits are bought and sold.

For foreign investors, one of the most important factors to consider is that their price, interest payments, and principal are denominated in a different currency. This currency component exposes them to *exchange rate risk* and affects their returns and overall risk. Most of the currency trading takes place in the *Interbank Foreign Exchange Market*. This market consists primarily of major banks that act as currency dealers, maintaining inventories of foreign currencies to sell to or buy from their customers (corporations, governments, or regional banks). The price of foreign currency or the exchange rate is defined as the number of units of one currency that can be exchanged for one unit of another. It is determined by supply and demand conditions affecting the foreign currency market.

### WEB INFORMATION

For an explanation of various investments, including foreign bonds, go to [www.finpipe.com](http://www.finpipe.com).

For information on historical exchange rates and trade, go to <http://research.stlouisfed.org/fred> (click “exchange rate” tab).

For information on current exchange rates and foreign interest rates, go to [www.fxstreet.com](http://www.fxstreet.com).

### Spot, Futures, Options, and Swap Markets

A *spot market* (also called a *cash market*) is one in which securities are exchanged for cash immediately (usually within one or two business days). An investor buying a Treasury bill, for example, is a transaction that takes place in the spot market. Not all securities transactions, though, call for immediate delivery. A *futures* or *forward contract* calls for the delivery and purchase of an asset (either real or financial) at a future date, with the terms (price, amount, etc.) agreed upon in the present. For example, a contract calling for the delivery of a Treasury bill in 70 days at a price equal to 97% of the bill’s principal would represent a futures contract on a Treasury bill. This agreement is distinct from buying a Treasury bill from a Treasury dealer in the spot market, where the transfer of cash for the security takes place almost immediately. Similar to a futures contract, an option is a security that gives the holder the right (but not the obligation) either to buy or to sell an asset at a specific price on or possibly before a specific date. Options include calls, puts, warrants, and rights. Both futures and options are traded on organized exchanges and through dealers on the OTC market. In the United States, the major futures exchange is the Chicago Mercantile Exchange and the major option exchange is the Chicago Board of Option Exchange. Options and futures are referred to as *derivative securities*, since their values are derived from the values of their underlying securities. In contrast, securities sold in the spot market are sometimes referred to as *primitive securities*.

Derivative debt securities have become important to both borrowers and investors in managing the risk associated with issuing and buying fixed income securities. Part 4 of this book focuses on the markets and uses of debt derivative securities.

In addition to derivative securities, bonds often have *embedded option* features in their contracts. As noted earlier, many bonds have a call feature giving the issuer the right to buy back the bond from the bondholder before maturity at a specific price. In addition to these so-called callable bonds, there are puttable bonds in which the bondholder has the right to sell the bond back to the issuer at a specified price, sinking fund clauses in which the issuer is required to orderly retire the bond by either buying bonds in the market or by calling them at a specified price, and convertible bonds that give the bondholder the right to convert the bond into a specified number of shares of stock. The inclusion of option features in a bond contract makes the valuation of such bonds more difficult. The valuation of bonds with embedded options is the subject of Chapters 14 and 15.

Today there is a large swap market. A *swap* is an exchange of cash flows: It is a legal arrangement between two parties to exchange specific payments. There are four types of swap:

1. **Interest Rate Swaps:** Exchange of fixed-rate payments for floating-rate payments
2. **Currency Swaps:** Exchange of liabilities in different currencies
3. **Cross-Currency Swaps:** Combination of interest rate and currency swap
4. **Credit Default Swaps:** Exchange of premium payments for default protection

The swap market primarily consists of financial institutions and corporations who use swap contracts to hedge more efficiently their liabilities and assets. For example, many institutions create synthetic fixed or floating-rate assets or liabilities with better rates than the rates obtained on direct liabilities and assets. The markets and uses of swaps are examined in Part 5 of this book.

### WEB INFORMATION

For information on derivatives, see:

- CME Group: [www.cmegroup.com](http://www.cmegroup.com).
- Chicago Board Options Exchange: [www.cboe.com](http://www.cboe.com).

## 1.5 REGULATIONS

Prior to the enactment of federal securities laws in 1933 and in 1934, the regulation of securities trading in the United States came under the auspices of state governments who had passed a number of laws to prevent fraud and speculative schemes. The state securities laws, known as *blue-sky laws*, were often hard to enforce since many fraudulent promoters could operate outside a state's jurisdiction. With the

passage of the *Securities Act of 1933* and the *Securities Exchange Act of 1934*, though, securities regulations came more under the providence of the federal government. The 1933 act, known as the “*truth in securities*” law, requires registration of new issues, disclosure of pertinent information by issuers, and prohibits fraud and misrepresentation. The Securities Exchange Act of 1934 established the Securities and Exchange Commission, extended the disclosure requirements of the 1933 act to include traders and participants in the secondary market, and outlawed fraud and misrepresentation in the trading of existing securities. Today, five commissioners, appointed by the president and confirmed by the Senate for five-year terms, run the SEC. The SEC is responsible for the administration of both the 1933 and 1934 acts, as well as the administration of a number of other securities laws that have been enacted since then. The 1934 act gave the SEC authority over organized exchanges. Historically, the SEC has exercised its authority by setting only general guidelines for the bylaws and rules of an exchange, allowing the exchanges to regulate themselves. The SEC does have the power, though, to intervene and change bylaws, as well as close exchanges. Exhibit 1.1 summarizes the securities acts of 1933 and 1934, and Exhibit 1.2 describes some of the other important securities laws in the United States.

The 1933 and 1934 securities acts are aimed at ensuring that information is disseminated efficiently to all investors and that fraud and misrepresentation are outlawed. There are also laws, regulations, and regulatory agencies that work to ensure the financial system is sound. Of particular note is the Federal Reserve System. Created in 1913, the Federal Reserve (Fed) is the most important central bank in the world. The Fed is responsible for managing the economy’s money supply and the general level of interest rates. As we will discuss in more detail in later chapters, the Fed does this by open market operations, changing the reserve requirements banks maintain, and changing the discount rate they charge commercial banks on loans.

### **WEB INFORMATION**

For information on the laws, regulations, and litigations of the SEC, go to [www.sec.gov](http://www.sec.gov).

For information on monetary policy, economic data, and research from the Federal Reserve, go to [www.federalreserve.gov](http://www.federalreserve.gov).

### **Identification**

There are hundreds of thousands of bonds issues. Most securities, though, can be identified by a nine-character *CUSIP* number. CUSIP stands for the Committee on Uniform Securities Identification Procedures. CUSIP is owned by the American Bankers Association and operated by Standard & Poor’s. It is used to identify trades and for clearing. There is also a 12-character foreign securities identification system known as *CINS*.

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**EXHIBIT 1.1** Securities Acts of 1933 and 1934

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The Securities Act of 1933, also known as the “*truth in securities*” law, required registration of new issues and disclosure of pertinent information by issuers, and prohibited fraud and misrepresentation. To comply with this act today, a company selling securities across state lines is required to submit a prospectus and audited financial statements on the company’s condition to a federal agency or the Securities and Exchange Commission. Once approved, the prospectus is sent to potential investors. Furthermore, any fraud or misrepresentation is subject to legal actions.

The Securities Exchange Act of 1934 established the *Securities and Exchange Commission*, extended the disclosure requirements of the 1933 act to include traders and participants in the secondary market, and outlawed fraud and misrepresentation in the trading of existing securities. Today, five commissioners, appointed by the president and confirmed by the Senate for five-year terms, run the SEC. The SEC is responsible for the administration of both the 1933 and 1934 acts, as well as the administration of a number of other securities laws that have been enacted since then. The 1934 act gave the SEC authority over organized exchanges.

**Financial Disclosure Requirements:** To comply with the disclosure provisions of the Securities Exchange Act (and its 1964 amendments), companies listed on the exchanges and those traded on the OTC market with assets over \$13 million are required to file with the SEC *10-K reports*, which are audited financial statement forms, *10-Q reports*, which are quarterly unaudited financial statement forms, and *8-K forms*, which report significant developments by the company.

**Fraud and Misrepresentation Provisions:** The Security Exchange Act of 1934 in particular outlaws price manipulation schemes such as wash sales, pools, churning, and corners. A wash sale is a sale and subsequent repurchase of a security or purchase of an identical security. It is done in order to establish a record to show, for example, a capital loss for tax purposes or to deceive investors into thinking there is large activity on the stock. A pool is an association of people formed to manipulate the price of a security. Churning occurs when a broker manipulates his client to make frequent purchases and sales of a security in order to profit from increased commissions. A corner occurs when someone buys up all of the security (or commodity) in order to have the monopolistic power to raise its price and to pressure short sellers to sell at higher prices. An investor or group of investors who try to corner the market could do so by forming pools to manipulate the security’s price. In addition to outlawing wash sales and pools, the Security Exchange Acts also require that all officers, directors, and owners of more than 10% of the company file an insider report each month in which they trade their securities. The purpose of this requirement is to eliminate an insider from profiting from inside information.

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## **1.6 EFFICIENT FINANCIAL MARKETS**

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As defined earlier, an asset is any commodity, tangible or intangible good, or financial claim that generates future benefits. The value of an asset is equal to the current value of all of the asset’s future expected cash flows; that is, the present value of the expected cash flow. Thus, if an investor requires a rate of return ( $R$ ) of 10% per year on investments in government securities that mature in one year, he would value ( $V_0$ ) a government bond promising to pay \$100 interest and \$1,000 principal at the end of one year as worth \$1,000 today.

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**EXHIBIT 1.2** U.S. Federal Laws Related to Securities Trading

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**Glass-Steagall Act (enacted 1933; major provisions repealed 1999):** The Glass-Steagall Act, also known as the Banking Act of 1933, prohibited commercial banks from acting as investment bankers. Enacted after the 1929 stock market crash, the act also prohibited banks from paying interest on demand deposits (a prohibition that was later eliminated under Monetary Control Act of 1980), and created the Federal Deposit Insurance Company. As a result of the Glass-Steagall Act, for years most commercial banks in the United States were not allowed to underwrite securities, act as brokers or dealers, or offer investment company shares. The Glass-Steagall Act also served to differentiate U.S. banking activities from those of many countries in which banks were allowed to provide investment banking and securities services (merchant banking). Recognizing these differences, the U.S. Congress repealed many of the provisions of the Glass-Steagall Act.

**Financial Services Modernization (Gramm-Leach-Bliley) Act (1999):** The act permits finance companies and banks to form financial holding companies to offer banking, insurance, securities, and other financial services under one controlling corporation.

**Federal Reserve Regulations T and U:** Regulations T and U give the Board of Governors of the Federal Reserve the authority to set margin requirements for security loans made by banks, brokers, and dealers. Regulation T sets loan limits made by brokers and dealers, and Regulation U sets loan limits made by banks for securities transactions. Since 1934, these requirements have ranged from 40% to 100%. Note: Brokerage houses and securities exchanges set maintenance margins.

**Maloney Act (1936):** This act requires associations such as NASD to register with the SEC and allows them to regulate themselves within general guidelines specified by the SEC.

**Trust Indenture Act (1939):** This act gives the SEC the authority to ensure that there are no conflicts of interest between bondholders, trustees, and issuer. The act was in response to abuses in the 1930s that resulted from the issuer having control over the trustee. Among its provisions, the act requires that the bond indenture clearly delineate the rights of the bondholders, that periodic financial reports be given to the trustee, and that the trustee act judiciously in bringing legal actions against the issuer when conditions dictate.

**Investment Company Act (1940), ICA:** This act extends the provisions of the securities acts of 1933 and 1934 to investment companies. Like the securities acts, it requires a prospectus to be approved and issued to investors with full disclosure of financial statements, and it outlaws fraud and misrepresentations. In addition, the act requires investment companies to state their goals (growth, balance, income, etc.), to have a management firm approved by the investment company's board, and to manage funds for the benefit of the shareholders. The 1940 act was amended in 1970 (Investment Company Amendments Act of 1970) with provisions calling for certain restrictions on management fees and contracts.

**Investment Advisors Act (1940), IAA:** This act requires individuals and firms providing investment advice for a fee to register with the SEC. The act does not, however, require certification of an advisor's qualifications. The act also outlaws fraud and misrepresentation.

**Employee Retirement Income Security Act (1974), ERISA:** This act requires that managers of pension funds adhere to the *prudent man rule* (a common-law principle) in managing retirement funds. When applied to investment management, this rule requires average portfolio returns and risk levels to be consistent with that of a prudent man. The objective (which is subject to legal testing) is that pension managers be adequately diversified to minimize the risk of large losses.

**Sarbanes-Oxley Act of 2002:** The act mandated a number of reforms to enhance corporate responsibility, enhance financial disclosure, and combat corporate and accounting fraud, and created the Public Company Accounting Oversight Board, also known as the PCAOB, to oversee the activities of the auditing profession.

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$$V_0 = \frac{\text{Interest} + \text{Principal}}{1 + R} = \frac{\$100 + \$1,000}{1.10} = \$1,000$$

Similarly, an investor who expected ABC stock to pay a dividend of \$10 and to sell at a price of \$105 one year later would value the stock at \$100 if she required a rate of return of 15% per year on such investments:

$$V_0 = \frac{\text{Dividend} + \text{Expected price}}{1 + R} = \frac{\$10 + \$105}{1.15} = \$100$$

(See Appendix C for a primer on the time value of money.)

In the financial market, if stock investors expecting ABC stock to pay a \$10 dividend and be worth \$105 one year later required a 15% rate of return, then the equilibrium price of the stock in the market would be \$100. Similarly, if government bond investors required a 10% rate of return, then the equilibrium price of the government bond would be \$1,000. The equilibrium price often is ensured by the activities of *speculators*: those who hope to obtain higher rates of return (greater than 15% in this case of the stock or 10% in the case of the bond) by gambling that security prices will move in certain directions. For example, if ABC stock sold below the \$100 equilibrium value, then speculators would try to buy the underpriced stock. As they try to do so, though, they would push the underpriced ABC stock towards its equilibrium price of \$100. On the other hand, if ABC stock were above \$100, investors and speculators would be reluctant to buy the stock, lowering its demand and the price. These actions might also be reinforced with some speculators selling the stock short. In a *short sale*, a speculator sells the stock first and buys it later, hoping to profit, as always, by buying at a low price and selling at a high one. For example, if ABC stock is selling at \$105, a speculator could borrow a share of ABC stock from one of its owners (i.e., borrow the stock certificate, not money), and then sell the share in the market for \$105. The short seller/speculator would now have \$105 cash and would owe one share of stock to the share lender. Since the speculator believes the stock is overpriced, she is hoping to profit by the stock decreasing in the near future. If she is right such that ABC stock decreases to its equilibrium value of \$100, then the speculator could go into the market and buy the stock for \$100 and return the borrowed share, leaving her with a profit of \$5. However, if the stock goes up and the share lender wants his stock back, then the short seller would lose when she buys back the stock at a price higher than \$100. In general, speculators help to move the market price of a security to its equilibrium value.

Theoretically, a market in which the price of the security is equal to its equilibrium value at all times is known as a *perfect market*. For a market to be perfect requires, among other things, that all the information on which investors and speculators base their estimates of expected cash flows be reflected in the security's price. Such a market is known as an *efficient market*. In a perfect market, speculators, on average, would not earn abnormal returns (above 15% in our stock example). However, if the information the market receives is *asymmetrical* in the sense that some speculators have information that others don't, or some receive information earlier than others, then the market price will not be equal to its equilibrium value at all times. In this inefficient market, there would be opportunities for speculators to earn abnormal returns.

Efficient markets would also preclude arbitrage returns. An *arbitrage* is a risk-free opportunity. Such opportunities come from price discrepancies among different markets. For example, if the same car sells for \$1,000 in Boston but \$2,000 in New York, an *arbitrageur* (one who exploits such opportunities) could earn a risk-free profit by buying the car in Boston and selling it in New York (assuming, of course, that the transportation cost are less than \$1,000). In the financial markets, arbitrageurs tie markets together. For example, suppose there were two identical government bonds, each paying a guaranteed interest and principal of \$1,100 at the end of one year, but with one selling for \$1,000 and the other selling for \$900. With such price discrepancies, an arbitrageur could sell short the higher priced bond at \$1,000 (borrow the bond and sell it for \$1,000) and buy the underpriced one for \$900. This would generate an initial cash flow for the arbitrageur of \$100 with no liabilities. That is, at maturity the arbitrageur would receive \$1,100 from the underpriced bond that he could use to pay the lender of the overpriced bond. Arbitrageurs, by exploiting this arbitrage opportunity, though, would push the price of the underpriced bond up and the price of the overpriced one down until they were equally priced and the arbitrage was gone. Thus, arbitrageurs would tie the markets for the two identical bonds together.

#### WEB INFORMATION

For more on the efficient market hypothesis, go to [www.investorhome.com/emh.htm](http://www.investorhome.com/emh.htm).

### 1.7 CHARACTERISTICS OF ASSETS

The preceding discussion on the types of financial claims and their markets suggests that there are considerable differences among assets. All assets, though, can be described in terms of a limited number of common characteristics. These common properties make it possible to evaluate, select, and manage assets by defining and comparing them in terms of these properties. In fact, as an academic subject, the study of investments involves the evaluation and selection of assets. The evaluation of assets consists of describing assets in terms of their common characteristics, whereas selection involves selecting assets based on the trade-offs between those characteristics (e.g., higher return for higher risk). The characteristics common to all assets are value, rate of return, risk, maturity, divisibility, marketability, liquidity, and taxability.

**Value:** As defined earlier, the value of an asset is the present value of all of the asset's expected future benefits. Moreover, if markets were efficient, then, in equilibrium, the value of the asset would be equal to its market price.

**Rate of Return:** The rate of return on an asset is equal to the total dollar return received from the asset per period of time expressed as a proportion of the price paid for the asset. The total return on the security includes the income payments the security promises (interest on bonds, dividends on stock, etc.), the interest from

reinvesting the coupon or dividend income during the life of the security, and any capital gains or losses realized when the investor sells the asset. Thus, if a corporate bond cost  $P_0 = \$1,000$  and were expected to pay a coupon interest of  $C = \$100$  and a principal of  $F = \$1,000$  at the end of the year, then its annual rate of return would be 10% if all the expectations hold true:

$$R = \frac{C + (F - P_0)}{P_0} = \frac{\$100 + (\$1,000 - \$1,000)}{\$1,000} = .10$$

It should be noted that value (or price) and rate of return are necessarily related. If an investor knows the price she will pay for a security and the security's expected future benefits, then she can determine the security's rate of return. Alternatively, if she knows the rate of return she wants or requires and the security's expected future benefits, then she can determine the security's value or price.

**Risk:** The third property of an asset is its risk. Investment risk can be defined as the possibility that the rate of return an investor will obtain from holding an asset will be less than expected. Risk can result, for example, out of a concern that a bond issuer might fail to meet his contractual obligations (default risk) or it could result from an expectation that conditions in the market will change, resulting in a lower price of the security than expected when the holder plans to sell the asset (market risk). Bond investors are exposed to one or more of the following risks:

1. **Interest-Rate Risk:** The risk that interest rates change, causing the bond price to change (part of market risk).
2. **Reinvestment Risk:** The risk that the cash flows on the bond are reinvested at lower rates (part of market risk).
3. **Call Risk:** The risk that the issuer will call the bond prior to maturity and the investor will have to reinvest in a market with lower rates.
4. **Credit Risk or Default Risk:** The risk that the issuer/borrower will fail to meet contractual obligations. Such risk is evaluated in term of quality ratings by rating agencies (Moody's, Standard & Poor's, and Fitch). Ratings range from triple A (high quality, low credit risk) to C.
5. **Credit Spread Risk:** The risk that the bond's credit risk will increase causing the bond's price to decrease relative to other bonds.
6. **Liquidity Risk:** The risk that the bond will be hard to sell at a price near its value.
7. **Risk Risk:** The risk of not being able to fully understand the risk of the security due to unexpected future events.

Risk, rate of return, and the value of an asset are necessarily related. In choosing between two securities with the same cash flows but with different risks, most investors will require a higher rate of return from the riskier of the two securities. For example, we would expect investors averse to risk to require a higher rate of return on a corporate bond issued by a fledgling company than on a U.S. government bond. If for some reason both securities traded at prices that yielded the same expected rates, then we would expect that investors would want the government bond, but not the corporate. If this were the case, the demand and price of the government bond would increase and its rate of return would decrease, while the demand and price of

the corporate would fall and its rate of return would increase. Thus, if investors are risk averse, riskier securities must yield higher rates of return in the market or they will languish untraded.

**Maturity:** The fourth characteristic of an asset is its maturity. Maturity is the length of time from the present until the last contractual payment is made. Maturity can vary anywhere from one day to indefinitely, as in the case of stock or a consol (a bond issued with no maturity). Maturity can be used as a measure of the life of an asset. In defining a bond's life in terms of its maturity, though, one should always be aware of provisions such as a sinking fund or a call feature that modifies the maturity of a bond. For example, a 10-year callable bond issued when interest rates are relatively high may be more like a 5-year bond given that a likely interest rate decrease would lead the issuer to buy the bond back.

**Divisibility:** The fifth attribute, divisibility, refers to the smallest denomination in which an asset is traded. Thus a bank savings deposit account, in which an investor can deposit as little as a penny, is a perfectly divisible security; a jumbo certificate of deposit, with a minimum denomination of \$10 million, is a highly indivisible security. Moreover, one of the economic benefits that investment funds provide investors is divisibility. That is, an investment company, by offering shares in a portfolio of high-denomination money market securities, makes it possible for small investors to obtain a higher rate of return than they could obtain by investing in a smaller-denomination money market security.

**Marketability:** The sixth characteristic is marketability. It can be defined as the speed in which an asset can be bought and sold. As a rule, for an asset to be highly marketable its price should be independent of the time spent searching for buyers or sellers. Many tangible assets, such as houses, as well as a number of financial assets, require a certain length of time before they can be bought or sold at their fair market values. This does not mean that they can't be sold in a short period of time; but if they must be, they typically fetch a price substantially lower than what the market would yield if adequate time were allowed. In general, highly marketable securities tend to be very standardized items with a wide distribution of ownership. Thus the stock of large corporations listed on the NYSE or Treasury issues are highly marketable securities that can be bought or sold on the exchanges or through a dealer in the OTC market in a matter of minutes. One way to measure the degree of marketability of a security is in terms of the size of the bid and asked spread offered by dealers in the OTC or a designated market maker. Dealers who make markets in less marketable securities necessarily set wider spreads than dealers who have securities that are bought and sold by many investors and therefore can be traded more quickly.

**Liquidity:** The seventh property, liquidity, is related to marketability. Liquidity can be defined as how cashlike a security is. For an instrument to be liquid it must be highly marketable and have little, if any, short-run risk. Thus, a Treasury security that can be sold easily and whose rate of return in the short run is known with a high degree of certainty is said to be liquid. On the other hand, a security such as a NYSE-listed stock is marketable but is not considered liquid given its day-to-day price fluctuations. Technically, the difference between marketability and liquidity is the latter's feature of low or zero risk that makes the security cashlike. It should be noted that although there is a difference between marketability and liquidity, the term liquidity is often used to describe a security's marketability.

**Taxability:** The eighth characteristic of an asset is taxability. Taxability refers to the claims that the federal, state, and local governments have on the cash flows of an asset. Taxability varies in terms of the type of asset. For example, the coupon interest on a municipal bond is tax exempt whereas the interest on a corporate bond is not. To the investor, the taxability of a security is important because it affects his after-tax rate of return.

## 1.8 CONCLUSION

In this chapter, we have given an overview of the financial system by examining the nature of financial assets, the types of markets that they give rise to, and their general characteristics. With this background, we now take up the study of the evaluation and selection of debt claims. In the next four chapters, debt securities are analyzed in terms of their characteristics: Chapter 2 looks at how debt instruments are valued and how their rates of return are measured; Chapters 3 and 4 examine respectively the level and structure of interest rates and explain how such factors as market expectations, economic conditions, taxability, and risk-return preferences are important in determining the level and structure of interest rates; Chapter 5 describes bond risk—default, call, and market risk—and introduces two measures of bond volatility—duration and convexity.

## KEY TERMS

arbitrage	dealers	financial claims
arbitrageur	debt claims	Financial Industry
asked price	deficit economic units	Regulatory Authority
asymmetrical	depository institutions	(FINRA)
banker bourse	derivative securities	foreign bonds
best effort	designated market makers	forward contract
bid-asked spread	(DMMs)	fungible
bid price	direct financial market	futures
blue-sky laws	disintermediation	general obligation bonds
brokers	divisibility	government-sponsored
callable bond	domestic bonds	enterprises
capital market	electronic communication	Interbank Foreign
cash market	network (ECN)	Exchange Market
certificates of deposit	efficient market	internal bond market
CINS	embedded option	investment banker
commercial paper	Eurobonds	investment companies
contractual institutions	exchange rate risk	limit order
corporate bonds	external bond market	limit order book
crossing network	Federal Agency Securities	lines of credit
CUSIP	financial assets	liquidity

marketability	open market trades	securitized assets
maturity	over-the-counter	Securities and Exchange
medium-term notes	(OTC)	Commission
money market	perfect market	short sale
National Association of	primary market	specialists
Securities Dealers	primary securities	speculators
(NASD)	primitive securities	spot market
National Association of	private bourse	surplus economic units
Securities Dealers	private placement	swaps
Automatic Quotation	public bourse	taxability
System (NASDAQ)	rate of return	Treasury bills
national market	real assets	Treasury bonds
negotiated market	revenue bonds	Treasury notes
New York Stock Exchange	risk	“truth in securities” law
(NYSE)	secondary market	U.S. Flow of Funds
NYSE Arca	secondary securities	underwrite
offshore market	Securities Act of 1933	underwriting syndicate
open-auction or cri��e	Securities Exchange Act	value
system	of 1934	wholesale market

### PROBLEMS AND QUESTIONS

1. Explain how real and financial assets are created through the capital formation process in both the private and public sectors.
2. Comment on what is meant by the statement, “The financial markets are markets for loanable funds.”
3. Describe the following markets and their features:
  - a. Primary and secondary markets
  - b. Direct and intermediary markets
  - c. Money and capital markets
4. Define the following types of primary market sales and participants:
  - a. Negotiated market and private placement
  - b. Open market sales
  - c. Investment banker
  - d. Best effort
  - e. Underwrite
  - f. Underwriting syndicate
5. Explain the difference between a broker and dealer.
6. Describe the organizational structure of the New York Stock Exchange.
7. Define the following:
  - a. NYSE Euronext
  - b. NYSE Arco
  - c. ArcaEdge

8. Define and explain the role of the specialist or market maker in ensuring a continuous market.
9. Describe the following aspects of the over-the-counter market:
  - a. How the market trades
  - b. Types of securities
  - c. Number of securities
  - d. National Association of Securities Dealers
  - e. FINRA
  - f. National Association of Securities Dealers Automatic Quotation System
10. Define the following financial institutions and explain their function in the intermediary financial market:
  - a. Depository institutions
  - b. Contractual institutions
  - c. Investment companies
11. What are securitized assets? How are they created?
12. Define the following international bonds and markets:
  - a. Eurobond market
  - b. Foreign bond
  - c. Internal market or national market
  - d. External market or offshore market
  - e. Interbank Foreign Exchange Market
13. Define a forward contract and an option contract. What is the main difference between the contracts?
14. Define a swap contract and list the major types.
15. List some of the major provisions in the securities acts of 1933 and 1934.
16. What is an efficient market? What is an inefficient market?
17. Define the characteristics of assets.
18. What is the difference between liquidity and marketability?

### **WEB EXERCISES**

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1. Learn about the NYSE Euronext by going to [www.nyse.com](http://www.nyse.com) and clicking on "About Us." At the site, check a stock by going to "Quick Quote" and entering a company's ticker symbol.
2. Find some current prices of OTC securities by going to [www.pinksheets.com](http://www.pinksheets.com).
3. Brokerage firms provide a number of services. Identify some of those services by going to the Merrill Lynch site: [www.ml.com](http://www.ml.com).
4. Two important securities laws are the Securities Act of 1933 and the Securities Exchange Act of 1934. Learn more about these acts and others (e.g., Sarbanes-Oxley Act of 2002), as well as the activities of the Securities and Exchange

Commission, by going to [www.sec.gov](http://www.sec.gov). At the site, go to “Site Map” and click on “Laws and Regulations” and then “Securities Act of 1933,” “Securities Exchange Act of 1934,” and “Sarbanes-Oxley Act of 2002.” As part of the 1933 and 1934 securities acts, traded companies are required to submit quarterly and annual financial statements. These statements can be found at the SEC site by going to “Site Map” and “Filings and Forms.” Select a company and then look up its reported financial statements.

5. There are a number of Web sites that provide information on current and historical stock prices of companies, as well as fundamental information.
  - a. The NASDAQ site is a good source for stock information. Select a stock and examine its price trends and fundamentals by going to [www.nasdaq.com](http://www.nasdaq.com). At the site, enter the company’s symbol (you can enter as many as 25 companies).
  - b. Another Web site for securities information is the *Wall Street Journal* site: <http://online.wsj.com/public/us>. For securities information and quotes, click “Markets” and “Market Data” tabs.
  - c. Obtain information on a company, such as its profile, fundamentals, and price charts, by going to FINRA: <http://finra.org>. On the FINRA site, go to “Site Map” and then to “Company Information.”
6. Explore some of the useful financial information from the following sites:
  - a. [www.Finance.Yahoo.com](http://www.Finance.Yahoo.com)
  - b. [www.hoovers.com](http://www.hoovers.com)
  - c. [www.bloomberg.com](http://www.bloomberg.com)
  - d. [www.businessweek.com](http://www.businessweek.com)
  - e. [www.ici.org](http://www.ici.org)
  - f. <http://seekingalpha.com>
  - g. <http://bigcharts.marketwatch.com>
  - h. [www.morningstar.com](http://www.morningstar.com)
  - i. <http://free.stocksmart.com>
7. Start monitoring several stocks, interest rates, and other market information by downloading MarketBrowser: [www.marketbrowser.com](http://www.marketbrowser.com).

## NOTES

1. Although U.S. exchanges use specialists to ensure continuous trading, the exchanges in some countries trade a security only once or just a few times during a day. These so-called “call” markets use an *open-auction* or *cri e system* in which interested traders gather in a designated trading area when the security is called. An exchange clerk then calls out prices until one is determined that clears all trades. In addition to continuous and call markets, there are also exchanges that have elements of both.
2. In October 2008, the NYSE Euronext also acquired the American Stock Exchange and formed the NYSE Amex that trades in small- and microcap listed companies.
3. For a security to qualify for the system it must have at least two market makers and its issuer must meet certain financial requirements. For a company to have its stock listed on the NASDAQ system it must satisfy requirements related to its net worth and shares outstanding.

4. Some scholars refer to direct financial claims as those in which only the ultimate borrowers and lenders trade with each other and a *semidirect market* as one in which brokers and dealers bring borrowers and lenders together. The definition of direct financial market here includes both of these markets.
5. An occasional trend in the financial markets is towards disintermediation. *Disintermediation* refers to the shifting from intermediary financing to direct financing. This occurs when a surplus unit withdraws funds from a financial institution and invests the funds by buying primary claims from an ultimate borrower.
6. Securities exchanges in different countries can be grouped into one of three categories: public bourse (exchange), private bourse, and banking bourse. A *public bourse* is a government securities exchange in which listed securities (usually both bonds and stocks) are bought and sold through brokers who are appointed by the government. A *private bourse* is a securities exchange owned by its member brokers and dealers. In countries where there are private exchanges a number of the exchanges will usually compete with each other; this is not the case in countries using a public bourse structure. A *banker bourse* is a formal or informal market in which securities are traded through bankers. This type of trading typically occurs in countries where historically commercial and investment banking have not separated.

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