

PART I

Bond Evaluation and Selection

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CHAPTER 1

Overview of the Financial System

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 cell phone, developing land for a future housing subdivision, launching a new Internet company, or exploring for crude oil. 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*, however, 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, entitlements, and infrastructures, and state governments' expenditures on the construction of highways, for example, represent the creation 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 claims. 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 investment and security 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 an overview of the types of debt securities and markets, whereas Part Two provides more detailed analyses.

Types of Debt Claims

Debt claims are loans wherein 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. 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 (e.g., at maturity—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:

Term to maturity is the 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.

Principal is the amount that the issuer/borrower agrees to repay the bondholder/lender.

Coupon rate (or nominal rate) is 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.

Amortization. The principal repayment of a bond can be either repaid 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.

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—*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 a long-term or intermediate-term loan 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 \$100 million processing plant might finance the cost by selling 100,000 bonds at a price of \$1,000 per bond, with each bond promising to pay \$50 in interest every June 15 and January 15 for the next 10 years and a principal of \$1,000 at maturity. In general, corporate bonds are long-term securities when they are issued, 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 (MTN) 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 original maturities that are intermediate or long term, 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-term 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 and equity claims. These intermediaries sell 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 number 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 (CDs), bankers' acceptances, mortgage-backed instruments, asset-backed securities, collateralized debt obligations, investment fund shares, annuities, and guaranteed investment contracts.

Financial Markets

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 that need to raise funds to finance their capital purchases of equipment, plants, and inventories; households that need to purchase houses, cars, and other consumer durables; and the Treasury, federal agencies, and municipal governments that 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 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 in 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 most state and local governments, tend to be deficit units.

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 Markets

The *primary market* is the 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 \$500 million bond issue by Duke Energy to finance the construction of electrical generating plant, is an example of a security transaction 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 security exchanges, the over-the-counter market, and electronic communication networks. 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 security 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 *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) Euronext, as well as 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 over-the-counter (OTC) market. In linking traders, exchanges and the OTC markets operate through humans, electronically, or both. Finally, there are *third markets*, in which exchange-listed securities are traded on the OTC market, and a *fourth market*, in which there is direct trading between financial institutions and not through the exchange and OTC markets.

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 and a number of other organized exchanges provide a continuous market. A continuous market attempts to have constant trading in a security. 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 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-ask spread*.

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 price-time priority system.¹

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, 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 communications 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. Even though no physical exchange exists, communications among brokers and dealers takes place through a computer system known as the *National Association of Securities Dealers Automated Quotation System* (*Nasdaq*). Nasdaq is an information system in which current bid-ask quotes of dealers are offered, and also a system that sends brokers' quotes to dealers, enabling them to close trades.²

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 to trade OTC stocks. The ArcaEdge platform offers best-price executions based on liquidity, transparency, speed, and anonymity. There are also other *electronic communication network* (ECN) systems provided by the OTC markets, regional exchanges, and exchanges in other countries. The crossing network systems allow institutional investors to cross order, matching buy and sell orders directly via computers.

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 consists of a network of noncentralized or fragmented market makers who provide bid and offer quotes for each issue in which they participate. 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 price-time priority system. There are also developing multidealer 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.

Direct and Intermediate Financial Markets

In addition to dividing the markets for financial instruments into primary and secondary, the markets 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*.³

As is the case with many security 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 an *open market trade* is the *investment banker*. The investment banker is a middleperson or matchmaker who, for a fee or share in the trading profit, finds surplus units who want to buy the security being offered by a deficit unit (see Exhibit 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 Exhibit 1.2, sells financial claims (checking accounts, savings accounts, CDs, investment fund shares, payroll deduction plan, insurance plans, etc.) 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*.

Financial institutions making up the intermediary market 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

EXHIBIT 1.1 Direct Financial Market

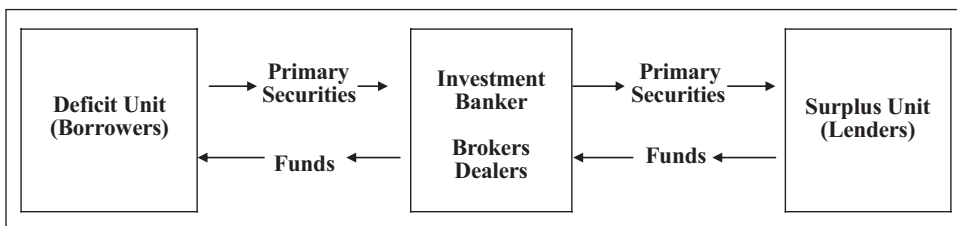
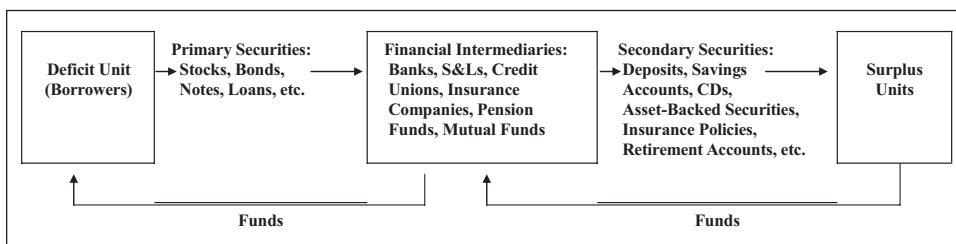


EXHIBIT 1.2 Intermediary Financial Market

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, accident, 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 the securities of investment companies 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, credit cards, etc.). The institution then sells claims on the package to investors, with the claim being secured by the package of assets—securitized asset. The package of loans, in turn, generates interest and principal that is passed on to the investors who purchased the securitized asset.⁴

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 CDs, investment fund shares, and securitized assets.

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 would include such securities as CDs, commercial paper (CP), Treasury bills, savings accounts, and shares in money market investment funds, whereas the latter would include common and preferred stock, limited partnership shares, corporate bonds, municipal

bonds, securitized assets, Treasury bonds, and investment fund shares. 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 or debt. 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 that buy and sell in large denominations. This feature helped 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 Security Markets

Over the past three decades, there has been 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 security 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 or her portfolio has several options. First, he or she might buy a stock or bond of a foreign government or foreign corporation that is issued in the foreign country or traded on that country's exchange. These securities are referred to as *domestic bonds*.⁵ Second, the investor might be able to buy bonds or stocks issued in a number of countries through an international syndicate. Securities sold in this market are known as *Eurobonds* or *Euroequity*. Finally, an investor might be able to buy a bond of a foreign government or the bonds or corporation being issued or traded in his or her own country. Such bonds are called *foreign bonds*. Similarly, an investor may be able to buy a foreign stock in his or her own country that is listed on the local stock exchange. Many multinational corporations are listed not only on their national exchanges, but also on security exchanges in other countries, often where they have

subsidiaries or conduct considerable business. If the foreign stock of interest is listed on a U.S. stock exchange, then a U.S. investor could easily purchase the stock there. Doing so would, in turn, help the investor avoid the risk of currency conversions and possibly foreign taxes.

If the investor were instead looking for short-term foreign investments, his choices could similarly include buying short-term domestic securities such as CP, CDs, and Treasuries issued in those countries; Eurocurrency CDs issued by Eurobanks; and foreign money market securities issued by foreign corporations and government 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 investments, one of the most important factors for an investor 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.

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's buying a stock or a Treasury bill, for example, is a transaction that takes place in the spot market. Not all security 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 percent 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 OTC market. In the United States, the major futures exchange is the Chicago Mercantile Exchange and the major option exchange is the Chicago Board Options 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*. Derivatives have become important to both borrowers and investors in managing the risk associated with issuing and buying securities. Part Three of this book focuses on the markets and uses of 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, giving the bondholder 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.

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 swaps:

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 consists primarily of financial institutions and corporations that 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 or as a tool to change the rate on their existing debt. The markets and uses of swaps are also examined in Part Three of this book.⁶

Regulations

Prior to the enactment of federal security laws in 1933 and 1934, the regulation of security trading in the United States came under the auspices of state governments, which had passed a number of laws to prevent fraud and speculative schemes. The state security laws, known as the *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,

security 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 (SEA) 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 security 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.

The 1933 and 1934 security acts were aimed at ensuring that information is disseminated efficiently to all investors and that fraud and misrepresentation are outlawed. Specifically, the acts outlawed price manipulation schemes such as wash sales, pools, churning, and corners. To comply with the disclosure provisions of the SEA (and its 1964 amendments), companies listed on the exchanges and those traded on the OTC market 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. Exhibit 1.3 summarizes the provisions in the security acts of 1933 and 1934, and Exhibit 1.4 describes some of the other important security laws in the United States.

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.

Identification

There are thousands of bond, stock, and investment fund shares outstanding. Publicly traded stocks can be identified by their *ticker* symbol. Most fixed-income securities 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 (S&P). It is used to identify trades and for clearing. There is also a 12-character foreign security identification system known as the CUSIP International Numbering System (CINS).

EXHIBIT 1.3 Security Acts of 1933 and 1934: Price Manipulation

Price Manipulation	Description
Wash Sale	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. The SEA of 1934 prohibits wash sales.
Pool	A pool is an association of people formed to manipulate the price of a security. For example, a pool might be formed with a group of brokers, specialists, corporate executives, and news reporters. Initially, the group could collude to bring a stock's price down through short sales and the dissemination of negative information; then, after the price has decreased to a certain level, they could buy the securities and use their connections and authority to increase the security's price to a level at which they could profit when they liquidate. The 1934 act forbids such pool activities, requires all pools to be reported, makes it illegal for members to be part of a pool, and requires corporate executives and other insiders to report their transactions in their own securities with the SEC.
Churning	Churning occurs when a broker manipulates his client to make frequent purchases and sales of a security in order to profit from increased commissions. While Section 10(b) of SEA of 1934 forbids churning, it is very difficult to prove in a court of law.
Corner	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. Such manipulation is outlawed by the SEA of 1934.
Insider Activity	The SEA requires that all officers, directors, and owners of more than 10% file an <i>insider report</i> each month in which they trade their securities. This information is publicly reported in the financial press. The purpose of this requirement is to eliminate an insider from profiting from inside information.

Efficient Financial Markets

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 percent per year on investments in a corporate bond that matures in one year, he would value (V_0) such a bond promising to pay \$100 interest and \$1,000 principal at the end of one year as worth \$1,000 today:

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

EXHIBIT 1.4 U.S. Federal Laws Related to Security Training

Legislation	Description
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 the Monetary Control Act of 1980), and created the Federal Deposit Insurance Corporation. As a result of the Glass-Steagall Act, most commercial banks in the United States for years were not allowed to underwrite securities, act as brokers and dealers, and 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 security 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 permitted 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.
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 gave 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's 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 (ICA) (1940)	This act extends the provisions of the security acts of 1933 and 1934 to investment companies. Like the security 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 Amendment Act of 1970) with provisions calling for certain restrictions on management fees and contracts.
Investment Advisers Act (IAA) (1940)	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 adviser's qualifications. The act also outlaws fraud and misrepresentation.

Legislation	Description
Employee Retirement Income Security Act (ERISA) (1974)	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 probable interpretation (which is subject to legal testing) would be that pension managers be adequately diversified to minimize the risk of large losses.
Securities Investor Protection Corporation Act (SIPC) (1970)	This act provides investors with insurance coverage against losses resulting from the bankruptcy of brokerage firms. The act stipulates that all registered brokers, dealers, and exchange members be members of the SIPC.
Sarbanes-Oxley Act (2002)	This act mandated a number of reforms to enhance corporate responsibility, enhance financial disclosures, and combat corporate and accounting fraud, and created the Public Company Accounting Oversight Board (PCAOB) to oversee the activities of the auditing profession.

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 percent per year on such investments:

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

(See Appendix A 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 percent rate of return, then the equilibrium price of the stock in the market would be \$100. Similarly, if one-year corporate bond investors required a 10 percent rate of return, then the equilibrium price of the corporate 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 percent in the case of the stock or 10 percent 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 tried to do so, though, they would push the underpriced ABC stock toward its equilibrium price of \$100. However, if ABC stock was 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's 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 \$105. 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 would not earn abnormal returns (above 15 percent 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 \$10,000 in Boston but \$15,000 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 costs are less than \$5,000). 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.

Characteristics of Assets

The preceding discussion on the types of financial claims and their markets suggest that there are considerable differences among assets. All assets, though, can be described in terms of a limited number of common characteristics or properties. 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 percent 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 he or she will pay for a security and the security's expected future benefits, then he or she can determine the security's rate of return. Alternatively, if the investor knows the rate of return he or she wants or requires and the security's expected future benefits, then he or 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. For stock, realized returns can deviate from expected returns when there are changes in the underlying factors that determine a firm's earnings, dividends, growth rates, and required return. The total risk of stock is often explained in terms of three general factors that influence a stock's return: factors related to the individual firm, the industry in which the firm competes, and the market in general.

For bonds, risk comes from concerns 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:

- *Interest rate risk.* The risk that interest rates will change, causing the bond price to change (part of market risk).
- *Reinvestment risk.* The risk that the cash flows on the bond will be reinvested at lower rates (part of market risk).
- *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.
- *Credit risk or default risk.* The risk that the issuer/borrower will fail to meet contractual obligations. Such risk is evaluated in terms of quality ratings by rating agencies (Moody's, S&P, and Fitch). Ratings range from triple A (high quality, low credit risk) to C.
- *Credit spread risk.* The risk that the bond's credit risk will increase, causing the bond's price to decrease relative to other bonds.
- *Liquidity risk.* The risk that the bond will be hard to sell at a price near its value.
- *Risk risk.* The risk of not being able to fully understand the risk of the security due to unexpected future events.

In the case of credit/default risk, investors often rely on bond rating companies to provide information about the default risk associated with a specific company, municipality, or government. The major rating companies in the United States are Moody's Investment Services, S&P, and Fitch Investors Service. Moody's and S&P have been rating bonds for almost 100 years. Today, they rate over 2,000 companies in addition to municipals, sovereigns, asset-backed securities, and other debt obligations. Moody's, S&P, and Fitch evaluate bonds by giving them a quality rating in the form of a letter grade (see Exhibit 1.5). The grades start at "A" with three groups: triple A bonds (Aaa for Moody's and AAA for S&P) for the highest-grade bonds, double A (Aa or AA) for bonds that are considered prime, single A for those considered high quality. Grade A bonds are followed by B-rated bonds, classified as either triple B (Baa or BBB), that have a medium grade, double B (Ba or BB), and single B. Finally, there are C-grade and lower-grade bonds. Moody's also breaks down bonds by using a 1, 2, or 3 designation, whereas S&P does the same with a plus or minus designation. In interpreting these ratings, triple A bonds are considered to have virtually no default risk, whereas low B-rated or C-rated bonds are considered speculative with some chance of default. In general, bonds with relatively low chance of default are referred to as *investment-grade bonds*, with quality rating of Baa (or BBB) or higher; bonds with relatively greater chance of default are referred to as *non-investment-grade, speculative-grade* or *junk bonds* and have a quality rating below Baa.

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

EXHIBIT 1.5 Bond Ratings

	Very High Quality	High Quality	Speculative	Very Poor
Standard & Poor's	AAA AA	A BBB	BB B	CCC D
Moody	Aaa Aa	A Baa	Ba B	Caa C
Moody's	S&P	Description		
Aaa	AAA	Bonds have the highest rating. Ability to pay interest and principal is very strong.		
Aa	AA	Bonds have a very strong capacity to pay interest and repay principal. Together with the highest ratings, this group comprises the high-grade bond class.		
A	A	Bonds have a strong capacity to pay interest and repay principal, although they are somewhat susceptible to the adverse effects of changes in economic conditions.		
Baa	BBB	Bonds are regarded as having an adequate capacity to pay interest and repay principal. Adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity to pay interest and repay principal for debt in this category than in higher-rated categories. These bonds are medium-grade obligations.		
Ba	BB	Bonds are regarded as predominantly speculative with respect to capacity to pay interest and repay principal in accordance with the terms of the obligation. BB and Ba indicate the lowest degree of speculations, and CC and Ca the highest degree of speculation.		
B	B			
Caa	CCC			
Ca	CC			
C	C	This rating is reserved for income bonds on which no interest is being paid.		
D	D	Bonds rated D are in default, and payment of interest and/or repayment of principal is in arrears.		

Note: At times both Moody's and S&P have used adjustments to these ratings. S&P uses plus and minus signs: A+ is the strongest A rating and A- is the weakest. Moody's uses a 1, 2, or 3 designation, with 1 indicating the strongest.

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, whereas 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.

Life

The fourth characteristic of an asset is its life. In the case of stock, the life of the stock is indefinite. For bonds, life is typically defined in term of the bond's 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). 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 diversified portfolio of stocks, makes it possible for small investors to obtain the returns and risk of a portfolio.

Marketability

The sixth characteristic is marketability. It can be defined as the speed at 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 Euronext or Treasury issues are highly marketable securities that can be bought or sold on the exchanges electronically or through 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 ask spread that dealers in the OTC or a designated market maker on the exchanges offers. 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 or moneylike 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. However, a security such as an exchange-listed stock is marketable, but given its day-to-day price fluctuations, is not considered

liquid. 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.

Liquidity and marketability are often described in terms of price continuity and depth. *Price continuity* refers to a security's trading at its current level in the absence of any new information. A security with depth, or one with a *deep market*, is one in which there are a large number of buyers and sellers willing to trade at a price without a large change in price.

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.

Indexes

Security evaluation and selection is based on comparing the characteristics of different securities. In comparing securities, investors often compare their securities or portfolios to an index. They also constantly monitor trends in the market by following indexes. Indexes are constructed so as to provide an indication of how the market for a particular group of securities is performing. The index could be broad based, measuring the performance of the overall market; sector specific, measuring the performance of an particular industry or sector; or style specific, measuring the performance of certain type of investment (e.g., small-cap companies or investment-grade bonds). The oldest and still most frequently quoted index is the *Dow Jones Industrial Average (DJIA)*. Created in 1896, this broad-based stock index is computed as a price-weighted average of 30 large "blue-chip" stocks (not all of them being industrials). The other popular broad-base index is the *Standard & Poor's Composite 500 Index (S&P 500)*. In calculating this index, the price of each stock is multiplied by the market value of the company's outstanding shares, divided by the aggregate market value of the 500 stocks from a base year. The S&P 500 includes mostly mid- and large-cap stocks.

The proportional change in the index per time period gives the overall market's price appreciation or depreciation the index is representing:

$$\text{Proportional price change} = \frac{(\text{S\&P 500})_t - (\text{S\&P 500})_{t-1}}{(\text{S\&P 500})_{t-1}}$$

For example, from mid-2006 to September 2007, the S&P 500 increased from 1,200 to 1,565, a 30 percent price appreciation, whereas from September

2007 (the start of the financial crisis) to the beginning of 2008, the index decreased 57 percent from 1,565 to 676. A mutual fund manager looking at the proportional change in the index could compare his or her portfolio's price appreciation to that of the index to determine his or her portfolio's performance relative to the market.⁷

The most widely known bond indexes are those constructed by Barclay's and Merrill Lynch. These indexes cover different segments and parts of the bond market from investment-grade to lower-quality bonds, from governments to corporate, from short-term to long-term bonds. Ibbotson and Associates also has a set of indexes on T-bills, long-term and intermediate-term Treasuries, and long-term corporate. These indexes do not cover as many segments of the bond market as do the indexes of Barclay's and Merrill Lynch, but they do have a longer historical period, dating back to 1926. Finally, there are indexes for the major foreign stock exchanges and world indexes, such as the Nikkei 225 Index for the Tokyo Stock Exchange. Morgan Stanley, Dow Jones, and other financial service firms also calculate a number of indexes (in the local currency and in dollars), including national indexes, international industry indexes, a European index, an Asian index, and a world index.

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, in the next chapter we will examine how information and news about securities and markets can be accessed and analyzed using the Bloomberg platform.

Website Information

- NYSE Euronext: www.nyse.com
- OTC market: www.finra.org/index.htm and www.nasdaq.com
- For financial information on securities, market trends, and analysis:
 - <http://finance.yahoo.com>
 - www.hoovers.com
 - www.bloomberg.com
 - www.businessweek.com
 - www.ici.org
 - <http://seekingalpha.com>
 - <http://bigcharts.marketwatch.com>
 - www.morningstar.com
 - <http://free.stocksart.com>
 - <http://online.wsj.com/public/us>

- 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 (click the “Flow of Funds Account” tab).
- For information on investment funds, see the Investment Company Institute’s website: www.ici.org.
- Information on derivatives:
 - CME Group: www.cmegroup.com
 - Chicago Board Options Exchange: www.cboe.com
- For information on the laws, regulations, and litigations of the SEC, go to www.sec.gov.
- For information on monetary policy, economic data, and research from the Federal Reserve, go to www.federalreserve.gov.
- For more on the efficient market hypothesis, go to www.investorhome.com/emh.htm.

Selected References

- Mishkin, F. S., and S. G. Eakins. 2010. *Financial Markets and Institutions*, 6th edition. Boston: Addison-Wesley.
- Revell, J. 1997. *The Recent Evolution of the Financial System*. New York: MacMillan.

Notes

1. In October 2008, the NYSE Euronext also acquired the American Stock Exchange and formed the NYSE Amex, which trades in small- and microcap listed companies. At the time of this writing, there is an offer by the Frankfurt Exchange to acquire NYSE Euronext.
2. 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.
3. 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.
4. 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.
5. Security 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 security 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 security 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.

6. In addition to domestic and foreign bonds and stocks, investment funds, and derivatives, many investors include gold and other precious metals such as silver as part of their portfolios. Since gold does not generate an income, its attraction as an international asset emanates from its tradition of being regarded as an international store of value. Gold is a precious metal that is unaffected by water, weather, and oxygen. Investors have often purchased it during periods of economic or political crisis.
7. It should be noted that the rate of return of the index needs to include the proportional price change and also the index's cash dividend income during the period:

$$R = \frac{[(S \& P 500)_t - (S \& P 500)_{t-1}] + \text{Index's cash dividend during the period}}{(S \& P 500)_{t-1}}$$

$$R = \frac{[(S \& P 500)_t - (S \& P 500)_{t-1}]}{(S \& P 500)_{t-1}} + \frac{\text{Index's cash dividend during the period}}{(S \& P 500)_{t-1}}$$

$$R = \text{Proportional change in price} + \text{dividend yield}$$

From January 2010 to January 2011, the proportional price change in the S&P 500 was 25 percent and the dividend yield was 3 percent, yielding an overall market return of 28 percent.