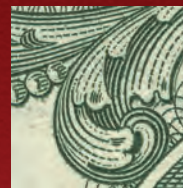


# 2

## An Overview of the Financial System



### Preview

Inez the Inventor has designed a low-cost robot that cleans house (even does windows), washes the car, and mows the lawn, but she has no funds to put her wonderful invention into production. Walter the Widower has plenty of savings, which he and his wife accumulated over the years. If Inez and Walter could get together so that Walter could provide funds to Inez, Inez's robot would see the light of day, and the economy would be better off: We would have cleaner houses, shinier cars, and more beautiful lawns.

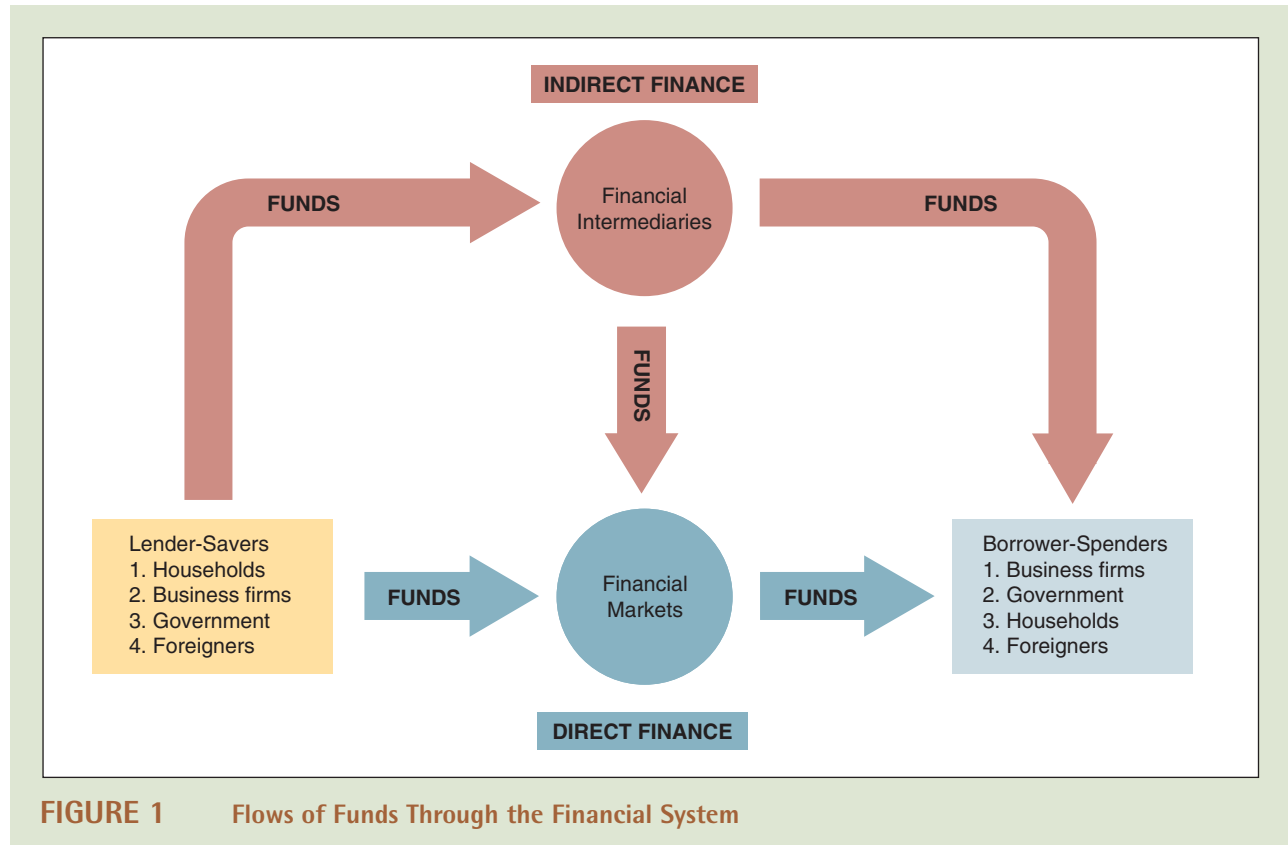
Financial markets (bond and stock markets) and financial intermediaries (such as banks, insurance companies, pension funds) have the basic function of getting people like Inez and Walter together by moving funds from those who have a surplus of funds (Walter) to those who have a shortage of funds (Inez). More realistically, when Apple invents a better iPod, it may need funds to bring its new product to market. Similarly, when a local government needs to build a road or a school, it may need more funds than local property taxes provide. Well-functioning financial markets and financial intermediaries are crucial to economic health.

To study the effects of financial markets and financial intermediaries on the economy, we need to acquire an understanding of their general structure and operation. In this chapter, we learn about the major financial intermediaries and the instruments that are traded in financial markets as well as how these markets are regulated.

This chapter presents an overview of the fascinating study of financial markets and institutions. We return to a more detailed treatment of the regulation, structure, and evolution of the financial system in Chapters 8 through 12.

## FUNCTION OF FINANCIAL MARKETS

Financial markets perform the essential economic function of channeling funds from households, firms, and governments that have saved surplus funds by spending less than their income to those that have a shortage of funds because they wish to spend more than their income. This function is shown schematically in Figure 1. Those who have saved and are lending funds, the lender-savers, are at the left, and those who must borrow funds to finance their spending, the borrower-spenders, are at the right. The principal lender-savers are households, but business enterprises and the government (particularly state and local government), as well as foreigners and their governments, sometimes also find themselves with excess funds and so lend them out. The most important borrower-spenders are businesses and the government (particularly the federal



**FIGURE 1** Flows of Funds Through the Financial System

government), but households and foreigners also borrow to finance their purchases of cars, furniture, and houses. The arrows show that funds flow from lender-savers to borrower-spenders via two routes.

In *direct finance* (the route at the bottom of Figure 1), borrowers borrow funds directly from lenders in financial markets by selling them *securities* (also called *financial instruments*), which are claims on the borrower's future income or assets. Securities are assets for the person who buys them but **liabilities** (IOUs or debts) for the individual or firm that sells (issues) them. For example, if Ford needs to borrow funds to pay for a new factory to manufacture electric cars, it might borrow the funds from savers by selling them a *bond*, a debt security, that promises to make payments periodically for a specified period of time, or a *stock*, a security that entitles the owner to a share of the company's profits and assets.

Why is this channeling of funds from savers to spenders so important to the economy? The answer is that the people who save are frequently not the same people who have profitable investment opportunities available to them, the entrepreneurs. Let's first think about this on a personal level. Suppose that you have saved \$1,000 this year, but no borrowing or lending is possible because there are no financial markets. If you do not have an investment opportunity that will permit you to earn income with your savings, you will just hold on to the \$1,000 and will earn no interest. However, Carl the Carpenter has a productive use for your \$1,000: He can use it to purchase a new tool that will shorten the time it takes him to build a house, thereby earning an extra \$200

per year. If you could get in touch with Carl, you could lend him the \$1,000 at a rental fee (interest) of \$100 per year, and both of you would be better off. You would earn \$100 per year on your \$1,000, instead of the zero amount that you would earn otherwise, while Carl would earn \$100 more income per year (the \$200 extra earnings per year minus the \$100 rental fee for the use of the funds).

In the absence of financial markets, you and Carl the Carpenter might never get together. You would both be stuck with the status quo, and both of you would be worse off. Without financial markets, it is hard to transfer funds from a person who has no investment opportunities to one who has them. Financial markets are thus essential to promoting economic efficiency.

The existence of financial markets is beneficial even if someone borrows for a purpose other than increasing production in a business. Say that you are recently married, have a good job, and want to buy a house. You earn a good salary, but because you have just started to work, you have not saved much. Over time, you would have no problem saving enough to buy the house of your dreams, but by then you would be too old to get full enjoyment from it. Without financial markets, you are stuck; you cannot buy the house and must continue to live in your tiny apartment.

If a financial market were set up so that people who had built up savings could lend you the funds to buy the house, you would be more than happy to pay them some interest so that you could own a home while you are still young enough to enjoy it. Then, over time, you would pay back your loan. If this loan could occur, you would be better off, as would the persons who made you the loan. They would now earn some interest, whereas they would not if the financial market did not exist.

Now we can see why financial markets have such an important function in the economy. They allow funds to move from people who lack productive investment opportunities to people who have such opportunities. Financial markets are critical for producing an efficient allocation of **capital**, (wealth, either financial or physical, that is employed to produce more wealth), which contributes to higher production and efficiency for the overall economy. Indeed, as we will explore in Chapter 9, when financial markets break down during financial crises, as they have in Mexico, East Asia, and Argentina in recent years, severe economic hardship results, which can even lead to dangerous political instability.

Well-functioning financial markets also directly improve the well-being of consumers by allowing them to time their purchases better. They provide funds to young people to buy what they need and can eventually afford without forcing them to wait until they have saved up the entire purchase price. Financial markets that are operating efficiently improve the economic welfare of everyone in the society.

## STRUCTURE OF FINANCIAL MARKETS

---

Now that we understand the basic function of financial markets, let's look at their structure. The following descriptions of several categorizations of financial markets illustrate essential features of these markets.

### Debt and Equity Markets

A firm or an individual can obtain funds in a financial market in two ways. The most common method is to issue a debt instrument, such as a bond or a mortgage, which is a contractual agreement by the borrower to pay the holder of the instrument fixed dollar amounts at regular intervals (interest and principal payments) until a specified date

(the maturity date), when a final payment is made. The **maturity** of a debt instrument is the number of years (term) until that instrument's expiration date. A debt instrument is **short-term** if its maturity is less than a year and **long-term** if its maturity is ten years or longer. Debt instruments with a maturity between one and ten years are said to be **intermediate-term**.

The second method of raising funds is by issuing **equities**, such as common stock, which are claims to share in the net income (income after expenses and taxes) and the assets of a business. If you own one share of common stock in a company that has issued one million shares, you are entitled to 1 one-millionth of the firm's net income and 1 one-millionth of the firm's assets. Equities often make periodic payments (**dividends**) to their holders and are considered long-term securities because they have no maturity date. In addition, owning stock means that you own a portion of the firm and thus have the right to vote on issues important to the firm and to elect its directors.

The main disadvantage of owning a corporation's equities rather than its debt is that an equity holder is a *residual claimant*; that is, the corporation must pay all its debt holders before it pays its equity holders. The advantage of holding equities is that equity holders benefit directly from any increases in the corporation's profitability or asset value because equities confer ownership rights on the equity holders. Debt holders do not share in this benefit, because their dollar payments are fixed. We examine the pros and cons of debt versus equity instruments in more detail in Chapter 8, which provides an economic analysis of financial structure.

The total value of equities in the United States has typically fluctuated between \$4 and \$20 trillion since the early 1990s, depending on the prices of shares. Although the average person is more aware of the stock market than any other financial market, the size of the debt market is often substantially larger than the size of the equities market: The value of debt instruments was \$35 trillion at the end of 2008, while the value of equities was \$19.5 trillion at the end of 2008.

## Primary and Secondary Markets

A **primary market** is a financial market in which new issues of a security, such as a bond or a stock, are sold to initial buyers by the corporation or government agency borrowing the funds. A **secondary market** is a financial market in which securities that have been previously issued can be resold.

The primary markets for securities are not well known to the public because the selling of securities to initial buyers often takes place behind closed doors. An important financial institution that assists in the initial sale of securities in the primary market is the **investment bank**. It does this by **underwriting** securities: It guarantees a price for a corporation's securities and then sells them to the public.

The New York Stock Exchange and NASDAQ (National Association of Securities Dealers Automated Quotation System), in which previously issued stocks are traded, are the best-known examples of secondary markets, although the bond markets, in which previously issued bonds of major corporations and the U.S. government are bought and sold, actually have a larger trading volume. Other examples of secondary markets are foreign exchange markets, futures markets, and options markets. Securities brokers and dealers are crucial to a well-functioning secondary market. **Brokers** are agents of investors who match buyers with sellers of securities; **dealers** link buyers and sellers by buying and selling securities at stated prices.

When an individual buys a security in the secondary market, the person who has sold the security receives money in exchange for the security, but the corporation that issued

the security acquires no new funds. A corporation acquires new funds only when its securities are first sold in the primary market. Nonetheless, secondary markets serve two important functions. First, they make it easier and quicker to sell these financial instruments to raise cash; that is, they make the financial instruments more **liquid**. The increased liquidity of these instruments then makes them more desirable and thus easier for the issuing firm to sell in the primary market. Second, they determine the price of the security that the issuing firm sells in the primary market. The investors who buy securities in the primary market will pay the issuing corporation no more than the price they think the secondary market will set for this security. The higher the security's price in the secondary market, the higher the price that the issuing firm will receive for a new security in the primary market, and hence the greater the amount of financial capital it can raise. Conditions in the secondary market are therefore the most relevant to corporations issuing securities. It is for this reason that books like this one, which deal with financial markets, focus on the behavior of secondary markets rather than primary markets.

### Exchanges and Over-the-Counter Markets

Secondary markets can be organized in two ways. One method is to organize **exchanges**, where buyers and sellers of securities (or their agents or brokers) meet in one central location to conduct trades. The New York Stock Exchange for stocks and the Chicago Board of Trade for commodities (wheat, corn, silver, and other raw materials) are examples of organized exchanges.

The other method of organizing a secondary market is to have an **over-the-counter (OTC) market**, in which dealers at different locations who have an inventory of securities stand ready to buy and sell securities “over the counter” to anyone who comes to them and is willing to accept their prices. Because over-the-counter dealers are in computer contact and know the prices set by one another, the OTC market is very competitive and not very different from a market with an organized exchange.

Many common stocks are traded over-the-counter, although a majority of the largest corporations have their shares traded at organized stock exchanges. The U.S. government bond market, with a larger trading volume than the New York Stock Exchange, by contrast, is set up as an over-the-counter market. Forty or so dealers establish a “market” in these securities by standing ready to buy and sell U.S. government bonds. Other over-the-counter markets include those that trade other types of financial instruments such as negotiable certificates of deposit, federal funds, and foreign exchange.

### Money and Capital Markets

Another way of distinguishing between markets is on the basis of the maturity of the securities traded in each market. The **money market** is a financial market in which only short-term debt instruments (generally those with original maturity of less than one year) are traded; the **capital market** is the market in which longer-term debt (generally those with original maturity of one year or greater) and equity instruments are traded. Money market securities are usually more widely traded than longer-term securities and so tend to be more liquid. In addition, as we will see in Chapter 4, short-term securities have smaller fluctuations in prices than long-term securities, making them safer investments. As a result, corporations and banks actively use the money market to earn interest on surplus funds that they expect to have only temporarily. Capital market securities, such as stocks and long-term bonds, are often held by financial intermediaries such as insurance companies and pension funds, which have little uncertainty about the amount of funds they will have available in the future.

## FINANCIAL MARKET INSTRUMENTS

To complete our understanding of how financial markets perform the important role of channeling funds from lender-savers to borrower-spenders, we need to examine the securities (instruments) traded in financial markets. We first focus on the instruments traded in the money market and then turn to those traded in the capital market.

### Money Market Instruments

Because of their short terms to maturity, the debt instruments traded in the money market undergo the least price fluctuations and so are the least risky investments. The money market has undergone great changes in the past three decades, with the amount of some financial instruments growing at a far more rapid rate than others.

The principal money market instruments are listed in Table 1 along with the amount outstanding at the end of 1980, 1990, 2000, and 2008. The Following the Financial News box illustrates how the interest rates on many of the instruments are reported.

**United States Treasury Bills** These short-term debt instruments of the U.S. government are issued in one-, three-, and six-month maturities to finance the federal government. They pay a set amount at maturity and have no interest payments, but they effectively pay interest by initially selling at a discount, that is, at a price lower than the set amount paid at maturity. For instance, in May 2010 you might buy a six-month Treasury bill for \$9,000 that can be redeemed in November 2010 for \$10,000.

*U.S. Treasury bills* are the most liquid of all the money market instruments because they are the most actively traded. They are also the safest of all money market instruments because there is almost no possibility of **default**, a situation in which the party issuing the debt instrument (the federal government in this case) is unable to make interest payments or pay off the amount owed when the instrument matures. The federal government is always able to meet its debt obligations because it can raise taxes or issue **currency** (paper money or coins) to pay off its debts. Treasury bills are held mainly by banks, although small amounts are held by households, corporations, and other financial intermediaries.

**TABLE 1**

**Principal Money Market Instruments**

Type of Instrument	Amount Outstanding (\$ billions, end of year)			
	1980	1990	2000	2008
U.S. Treasury bills	216	527	647	1060
Negotiable bank certificates of deposit (large denominations)	317	543	1053	2385
Commercial paper	122	557	1619	1732
Federal funds and Security repurchase agreements	64	387.9	768.2	2118.1

*Sources:* Federal Reserve Flow of Funds Accounts; Federal Reserve Bulletin; Economic Report of the President.



**Negotiable Bank Certificates of Deposit** A *certificate of deposit (CD)* is a debt instrument sold by a bank to depositors that pays annual interest of a given amount and at maturity pays back the original purchase price. Negotiable CDs are CDs that are sold in secondary markets, with the amount outstanding currently around \$2.4 trillion. Negotiable CDs are an extremely important source of funds for commercial banks, from corporations, money market mutual funds, charitable institutions, and government agencies.

**Commercial Paper** *Commercial paper* is a short-term debt instrument issued by large banks and well-known corporations, such as Microsoft and General Motors. Growth of the commercial paper market has been substantial: The amount of commercial paper outstanding has increased by over 1,200% (from \$122 billion to \$1,732 billion) in the period 1980–2008. We will discuss why the commercial paper market has had such tremendous growth in Chapter 12.

**Repurchase Agreements** *Repurchase agreements (repos)* are effectively short-term loans (usually with a maturity of less than two weeks) for which Treasury bills serve as *collateral*, an asset that the lender receives if the borrower does not pay back the loan. Repos are made as follows: A large corporation, such as Microsoft, may have some idle funds in its bank account, say \$1 million, which it would like to lend for a week. Microsoft uses this excess \$1 million to buy Treasury bills from a bank, which agrees to repurchase them the next week at a price slightly above Microsoft's purchase price. The effect of this agreement is that Microsoft makes a loan of \$1 million to the bank and holds \$1 million of the bank's Treasury bills until the bank repurchases the bills to pay off the loan. Repurchase agreements are now an important source of bank funds (over \$500 billion). The most important lenders in this market are large corporations.

**Federal (Fed) Funds** These instruments are typically overnight loans between banks of their deposits at the Federal Reserve. The *federal funds* designation is somewhat confusing because these loans are not made by the federal government or by the Federal Reserve but rather by banks to other banks. One reason why a bank might borrow in the federal funds market is that it might find it does not have enough deposits at the



## Following the Financial News Money Market Rates

The *Wall Street Journal* publishes daily a listing of interest rates on many different financial instruments in its “Money Rates” column in the Money and Investing section.

The four interest rates in the “Money Rates” column that are discussed most frequently in the media are these:

**Prime rate:** The base interest rate on corporate bank loans, an indicator of the cost of business borrowing from banks

**Federal funds rate:** The interest rate charged on overnight loans in the federal funds market, a sensitive indicator of the cost to banks of borrowing funds from other banks and the stance of monetary policy

**Treasury bill rate:** The interest rate on U.S. Treasury bills, an indicator of general interest-rate movements

**Libor rate:** The British Banker's Association average of interbank rates for dollar deposits in the London market.

(continued)

January 9, 2009

## Money Rates

Key annual interest rates paid to borrow or lend money in U.S. and international markets. Rates below are a guide to general levels but don't always represent actual transactions.

### Inflation

	Nov. index level	CHG FROM (%)	
		Oct. '08	Nov. '07
All items	<b>212.425</b>	-1.9	1.1
Core	<b>216.690</b>	-0.2	2.0

### U.S. consumer price index

All items	<b>212.425</b>	-1.9	1.1
Core	<b>216.690</b>	-0.2	2.0

### International rates

	Latest	Week ago	-52-WEEK-High	-52-WEEK-Low
<b>Prime rates</b>				
U.S.	<b>3.25</b>	<b>3.25</b>	<b>7.25</b>	<b>3.25</b>
Canada	<b>3.50</b>	3.50	6.00	3.50
Euro zone	<b>2.50</b>	2.50	4.25	2.50
Japan	<b>1.675</b>	1.675	1.875	1.675
Switzerland	<b>0.52</b>	2.02	4.56	0.52
Britain	<b>1.50</b>	2.00	5.50	1.50
Australia	<b>4.25</b>	4.25	7.25	4.25
Hong Kong	<b>5.00</b>	5.00	7.00	5.00

### Overnight repurchase

U.S.	<b>0.10</b>	0.10	4.17	0.08
U.K. (BBA)	<b>1.353</b>	1.883	5.742	1.270
Euro zone	<b>2.07</b>	2.16	4.50	2.07

### U.S. government rates

Discount	0.50	0.50	4.75	0.50
----------	------	------	------	------

### Federal funds

Effective rate	<b>0.13</b>	0.13	4.25	0.12
High	<b>0.4000</b>	0.5000	10.0000	0.4000
Low	<b>0.0313</b>	0.0100	4.0000	0.0000
Bid	<b>0.0625</b>	0.0313	4.1875	0.0000
Offer	<b>0.1875</b>	0.1250	7.0000	0.0500

### Treasury bill auction

4 weeks	<b>0.060</b>	0.030	3.240	0.000
13 weeks	<b>0.150</b>	0.050	3.180	0.005
26 weeks	<b>0.320</b>	0.250	3.170	0.250

### Secondary market

#### Freddie Mac

30-year mortgage yields				
30 days	<b>4.00</b>	4.67	6.49	4.00
60 days	<b>4.14</b>	4.80	6.56	4.14
One-year RNY	<b>3.375</b>	3.375	3.375	3.375

#### Fannie Mae

30-year mortgage yields				
30 days	<b>4.188</b>	4.488	6.566	4.099
60 days	<b>4.318</b>	4.635	6.618	4.186

#### Bankers acceptances

30 days	<b>0.50</b>	0.50	5.13	0.50
60 days	<b>0.75</b>	0.95	5.13	0.75
90 days	<b>1.00</b>	1.25	5.00	1.00
120 days	<b>1.25</b>	1.50	5.00	1.15

	Latest	Week ago	-52-WEEK-High	-52-WEEK-Low
150 days	<b>1.25</b>	1.50	5.00	1.25
180 days	<b>1.50</b>	1.75	5.00	1.50

### Other short-term rates

	Latest	Week ago	-52-WEEK-High	-52-WEEK-Low
--	--------	----------	---------------	--------------

<b>Call money</b>	<b>2.00</b>	2.00	6.00	2.00
-------------------	-------------	------	------	------

### Commercial paper

30 to 59 days	<b>n.q.</b>	...	...	...
60 to 89 days	<b>0.15</b>	...	...	...
90 to 119 days	<b>0.20</b>	...	...	...
120 to 149 days	<b>0.25</b>	...	...	...
150 to 165 days	<b>0.35</b>	...	...	...
166 to 180 days	<b>0.40</b>	...	...	...
181 to 270 days	<b>n.q.</b>	...	...	...

### Dealer commercial paper

30 days	<b>0.59</b>	0.52	5.95	0.52
60 days	<b>0.69</b>	0.97	5.95	0.69
90 days	<b>0.84</b>	1.12	5.95	0.84

### Euro commercial paper

30 day	<b>1.94</b>	2.34	4.75	1.94
Two month	<b>2.12</b>	2.50	4.80	2.12
Three month	<b>2.20</b>	2.61	5.00	2.20
Four month	<b>2.35</b>	2.70	5.00	2.35
Five month	<b>2.37</b>	2.71	5.02	2.37
Six month	<b>2.40</b>	2.73	5.07	2.40

### London interbank offered rate, or Libor

One month	<b>0.36625</b>	0.43000	4.58750	0.36625
Three month	<b>1.26000</b>	1.41250	4.81875	1.26000
Six month	<b>1.60000</b>	1.75250	4.39375	1.60000
One year	<b>1.85500</b>	2.02375	4.23375	1.85500

### New York Funding Rate

One month	<b>0.3800</b>	0.4533	4.8273	0.3800
Three month	<b>1.1800</b>	1.4167	4.9000	1.1800

### Notes on data:

**U.S. prime rate and discount rate** are effective December 16, 2008. **U.S. prime rate** is the base rate on corporate loans posted by at least 70% of the 10 largest U.S. banks.; **Other prime rates** aren't directly comparable; lending practices vary widely by location; **Discount rate** is the charge on loans to depository institutions by the New York Federal Reserve Banks; **Federal funds rate** is on reserves traded among commercial banks for overnight use in amounts of \$1 million or more; **Call money rate** is the charge on loans to brokers on stock-exchange collateral; **Dealer commercial paper rates** are for high-grade unsecured notes sold through dealers by major corporations; **Freddie Mac RNY** is the required net yield for the one-year 2% rate-capped ARM. **Libor** is the British Bankers' Association average of interbank offered rates for dollar deposits in the London market; **Libor Swaps** quoted are mid-market, semi-annual swap rates and pay the floating 3-month Libor rate. **New York Funding Rate** is the survey-based average of unsecured bank funding costs.

Sources: Merrill Lynch; Bureau of Labor Statistics; ICAP plc.; Thomson Reuters; General Electric Capital Corp.; Tullett Prebon Information, Ltd.

**Reuters Group PLC** is the primary data provider for several statistical tables in The Wall Street Journal, including foreign stock quotations, futures and foreign exchange tables. Reuters real-time data feeds are used to calculate various Dow Jones Indexes.

	Latest	Week ago	-52-WEEK-High	-52-WEEK-Low
<b>Libor Swaps (USD)</b>				
Two year	<b>1.308</b>	1.643	3.978	1.308
Three year	<b>1.634</b>	1.922	4.325	1.634
Five year	<b>2.039</b>	2.327	4.661	1.996
Ten year	<b>2.540</b>	2.793	4.968	2.304
20 year	<b>2.859</b>	3.001	5.200	2.438
30 year	<b>2.865</b>	2.941	5.248	2.365

<b>Euro Libor</b>				
One month	<b>2.402</b>	2.555	5.186	2.402
Three month	<b>2.689</b>	2.849	5.391	2.689
Six month	<b>2.768</b>	2.946	5.438	2.768
One year	<b>2.841</b>	3.027	5.514	2.841

### Euro interbank offered rate (Euribor)

One month	<b>2.412</b>	2.570	5.197	2.412
Three month	<b>2.692</b>	2.859	5.393	2.692
Six month	<b>2.765</b>	2.945	5.448	2.765
One year	<b>2.834</b>	3.025	5.526	2.834

### Hibor

One month	<b>0.151</b>	0.204	4.993	0.151
Three month	<b>0.841</b>	0.949	4.442	0.841
Six month	<b>1.184</b>	1.450	4.100	1.184
One year	<b>1.683</b>	1.850	3.950	1.671

### Asian dollars

One month	<b>0.372</b>	0.430	4.588	0.372
Three month	<b>1.296</b>	1.415	4.780	1.296
Six month	<b>1.642</b>	1.773	4.438	1.642
One year	<b>1.866</b>	2.035	5.408	1.866

	LATEST Offer	Bid	Week ago	52-WEEK-High	52-WEEK-Low
--	--------------	-----	----------	--------------	-------------

### Eurodollars (mid rates)

One month	<b>0.30</b>	0.75	0.75	6.25	0.50
Two month	<b>0.50</b>	1.00	1.25	5.50	0.75
Three month	<b>0.75</b>	1.25	1.50	5.75	1.00
Four month	<b>0.85</b>	1.35	1.75	5.25	1.10
Five month	<b>1.00</b>	1.40	1.75	5.25	1.20
Six month	<b>1.25</b>	1.75	1.93	5.25	1.50



Fed to meet the amount required by regulators. It can then borrow these deposits from another bank, which transfers them to the borrowing bank using the Fed's wire transfer system. This market is very sensitive to the credit needs of the banks, so the interest rate on these loans, called the **federal funds rate**, is a closely watched barometer of the tightness of credit market conditions in the banking system and the stance of monetary policy. When it is high, it indicates that the banks are strapped for funds; when it is low, banks' credit needs are low.

### Capital Market Instruments

*Capital market instruments* are debt and equity instruments with maturities of greater than one year. They have far wider price fluctuations than money market instruments and are considered to be fairly risky investments. The principal capital market instruments are listed in Table 2, which shows the amount outstanding at the end of 1980, 1990, 2000, and 2008. The Following the Financial News box illustrates how the interest rates on many of these instruments are reported.

**Stocks** *Stocks* are equity claims on the net income and assets of a corporation. Their value of \$20 trillion at the end of 2008 exceeds that of any other type of security in the capital market. However, the amount of new stock issues in any given year is typically quite small, less than 1% of the total value of shares outstanding. Individuals hold around half of the value of stocks; the rest are held by pension funds, mutual funds, and insurance companies.

**Mortgages** *Mortgages* are loans to households or firms to purchase housing, land, or other real structures, where the structure or land itself serves as collateral for the loans. The mortgage market is the largest debt market in the United States, with the amount of residential mortgages (used to purchase residential housing) outstanding more than

**TABLE 2**

**Principal Capital Market Instruments**

Type of Instrument	Amount Outstanding (\$ billions, end of year)			
	1980	1990	2000	2008
Corporate stocks (market value)	1,601	4,146	17,627	19,648
Residential mortgages	1,106	2,886	5,463	12,033
Corporate bonds	366	1,008	2,230	3,703
U.S. government securities (marketable long-term)	407	1,653	2,184	3,621
U.S. government agency securities	193	435	1,616	8,073
State and local government bonds	310	870	1,192	2,225
Bank commercial loans	459	818	1,091	1,605
Consumer loans	355	813	536	871
Commercial and farm mortgages	352	829	1,214	2,526

*Sources:* Federal Reserve Flow of Funds Accounts; Federal Reserve *Bulletin*. 2008, 3rd Quarter.

quadruple the amount of commercial and farm mortgages. Savings and loan associations and mutual savings banks have been the primary lenders in the residential mortgage market, although commercial banks have started to enter this market more



## Following the Financial News Capital Market Interest Rates

The *Wall Street Journal* publishes daily a list of interest rates on many different capital market instruments in its "Bonds, Rates & Yields" column in the Money and Investing section.

The five interest rates on capital market instruments in the "Bonds, Rates & Yields" column that are discussed most frequently in the media are:

**30-year mortgage:** the interest rate on a 30-year fixed-rate residential mortgage that is less than \$417,000 in amount and is guaranteed by the FHA.

**Jumbo mortgages:** the interest rate on a 30-year fixed-rate residential mortgage for prime customers that is in excess of \$417,000 in amount.

**Five-year adjustable mortgages (ARMs):** the interest rate for the first five years on a residential mortgage that adjusts after five years for prime customers.

**New-car loans:** the interest rate on a four-year fixed-rate new-car loan.

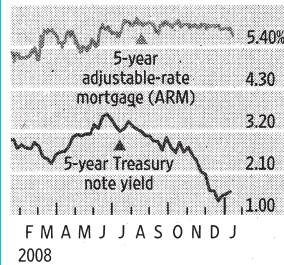
**10-year Treasury:** the interest rate on U.S. Treasury bonds maturing in ten years.

### [BONDS, RATES & YIELDS]

#### Consumer Rates and Returns to Investor

##### U.S. consumer rates

A consumer rate against its benchmark over the past year



##### Selected rates

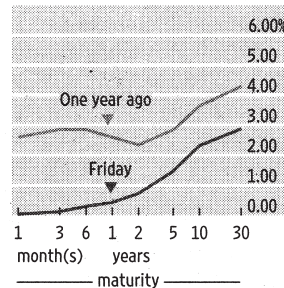
Five-year ARM, APR

Bankrate.com avg:	5.66%
<b>Bethpage FCU</b>	<b>3.51%</b>
Bethpage, NY	800-628-7070
<b>Third Federal Savings &amp; Loan</b>	<b>3.80%</b>
Cleveland, OH	888-844-7333
<b>Third Federal S&amp;LA</b>	<b>3.80%</b>
Cleveland, OH	888-THIRDFED
<b>Total Mortgage Services</b>	<b>3.80%</b>
Milford, CT	800-592-1501
<b>Park View Federal Savings Bank</b>	<b>3.82%</b>
Cleveland, OH	440-248-7171

#### Benchmark Yields and Rates

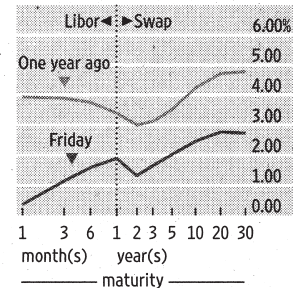
##### Treasury yield curve

Yield to maturity of current bills, notes and bonds



##### Libor-swap curve

Fixed mid rates\* to be paid against three-month Libor



\*Semiannual swaps maturing in 2 yrs-30 yrs Sources: Ryan ALM; ICAP plc.

Interest rate	YIELD/RATE (%)		52-WEEK RANGE (%)					3-yr chg (pct pts)		
	Last (●)	Week ago	Low	0	2	4	6		8	High
<b>Federal-funds rate target</b>	<b>0-0.25</b>	0.00	0.00						4.25	<b>unch.</b>
<b>Prime rate*</b>	<b>3.25</b>	3.25	3.25	●	●	●	●	●	7.25	<b>-4.00</b>
<b>Libor, 3-month</b>	<b>1.14</b>	1.26	1.08	●	●	●	●	●	4.82	<b>-3.46</b>
<b>Money market, annual yield</b>	<b>1.96</b>	2.03	1.96	●	●	●	●	●	3.32	<b>-0.82</b>
<b>Five-year CD, annual yield</b>	<b>2.96</b>	3.03	2.96	●	●	●	●	●	4.28	<b>-1.54</b>
<b>30-year mortgage, fixed†</b>	<b>5.32</b>	5.33	5.30	●	●	●	●	●	6.61	<b>-0.39</b>
<b>15-year mortgage, fixed†</b>	<b>4.95</b>	4.90	4.90	●	●	●	●	●	6.22	<b>-0.35</b>
<b>Jumbo mortgages, \$417,000-plus†</b>	<b>6.75</b>	6.75	6.49	●	●	●	●	●	7.89	<b>0.74</b>
<b>Five-year adj mortgage (ARM)†</b>	<b>5.66</b>	5.84	5.01	●	●	●	●	●	6.14	<b>0.34</b>
<b>New-car loan, 48-month</b>	<b>7.10</b>	7.11	6.45	●	●	●	●	●	7.14	<b>0.63</b>
<b>Home-equity loan, \$30,000</b>	<b>5.18</b>	5.18	4.64	●	●	●	●	●	6.85	<b>-0.81</b>

Bankrate.com rates based on survey of over 4,800 online banks. \*Base rate posted by 75% of the nation's largest banks. † Excludes closing costs. Sources: Thomson Reuters; WSJ Market Data Group; Bankrate.com

#### Corporate Borrowing Rates and Yields

Bond total return index	YIELD (%)		SPREAD +/- TREASURYS, in basis pts, 52-WK RANGE			TOTAL RETURN	
	Last	Wk ago	Last	Low	High	52-wk	3-yr
<b>10-yr Treasury</b> , Ryan ALM	<b>2.322</b>	2.409				16.70	10.21
<b>DJ Corporate</b>	<b>6.417</b>	6.514				2.59	4.19
<b>Aggregate</b> , Barclays Capital	<b>3.750</b>	3.590	194.0	97.0	258.0	4.09	5.90
<b>High Yield 100</b> , Merrill Lynch	<b>12.156</b>	12.236	1083.0	553.0	1482.0	-15.27	n.a.
<b>Fixed-Rate MBS</b> , Barclays	<b>3.080</b>	2.650	95.0	59.0	181.0	7.75	7.48
<b>Muni Master</b> , Merrill	<b>3.228</b>	3.506	45.0	-8.0	47.0	3.75	4.66
<b>EMBI Global</b> , J.P. Morgan	<b>9.267</b>	9.136	708.0	6.6	890.9	-10.71	n.a.

Sources: J.P. Morgan; Ryan ALM; Ryan Labs; Barclays Capital; Merrill Lynch

Source: *Wall Street Journal* Tuesday, January 20, 2009, p. C4.

aggressively. The majority of commercial and farm mortgages are made by commercial banks and life insurance companies. The federal government plays an active role in the mortgage market via the three government agencies—the Federal National Mortgage Association (FNMA, “Fannie Mae”), the Government National Mortgage Association (GNMA, “Ginnie Mae”), and the Federal Home Loan Mortgage Corporation (FHLMC, “Freddie Mac”)—that provide funds to the mortgage market by selling bonds and using the proceeds to buy mortgages.

**Corporate Bonds** These long-term bonds are issued by corporations with very strong credit ratings. The typical *corporate bond* sends the holder an interest payment twice a year and pays off the face value when the bond matures. Some corporate bonds, called *convertible bonds*, have the additional feature of allowing the holder to convert them into a specified number of shares of stock at any time up to the maturity date. This feature makes these convertible bonds more desirable to prospective purchasers than bonds without it and allows the corporation to reduce its interest payments because these bonds can increase in value if the price of the stock appreciates sufficiently. Because the outstanding amount of both convertible and nonconvertible bonds for any given corporation is small, they are not nearly as liquid as other securities such as U.S. government bonds.

Although the size of the corporate bond market is substantially smaller than that of the stock market, with the amount of corporate bonds outstanding less than one-fifth that of stocks, the volume of new corporate bonds issued each year is substantially greater than the volume of new stock issues. Thus the behavior of the corporate bond market is probably far more important to a firm’s financing decisions than the behavior of the stock market. The principal buyers of corporate bonds are life insurance companies; pension funds and households are other large holders.

**U.S. Government Securities** These long-term debt instruments are issued by the U.S. Treasury to finance the deficits of the federal government. Because they are the most widely traded bonds in the United States (the volume of transactions on average exceeds \$100 billion daily), they are the most liquid security traded in the capital market. They are held by the Federal Reserve, banks, households, and foreigners.

**U.S. Government Agency Securities** These long-term bonds are issued by various government agencies such as Ginnie Mae, the Federal Farm Credit Bank, and the Tennessee Valley Authority to finance such items as mortgages, farm loans, or power-generating equipment. Many of these securities are guaranteed by the federal government. They function much like U.S. government bonds and are held by similar parties.

**State and Local Government Bonds** State and local bonds, also called *municipal bonds*, are long-term debt instruments issued by state and local governments to finance expenditures on schools, roads, and other large programs. An important feature of these bonds is that their interest payments are exempt from federal income tax and generally from state taxes in the issuing state. Commercial banks, with their high income tax rate, are the biggest buyers of these securities, owning over half the total amount outstanding. The next biggest group of holders consists of wealthy individuals in high income tax brackets, followed by insurance companies.

**Consumer and Bank Commercial Loans** These loans to consumers and businesses are made principally by banks but, in the case of consumer loans, also by finance companies.



## INTERNATIONALIZATION OF FINANCIAL MARKETS

The growing internationalization of financial markets has become an important trend. Before the 1980s, U.S. financial markets were much larger than financial markets outside the United States, but in recent years the dominance of U.S. markets has been disappearing. (See the Global box “Are U.S. Capital Markets Losing Their Edge?”) The extraordinary growth of foreign financial markets has been the result of both large increases in the pool of savings in foreign countries such as Japan and the deregulation of foreign financial markets, which has enabled foreign markets to expand their activities. American corporations and banks are now more likely to tap international capital markets to raise needed funds, and American investors often seek investment opportunities abroad. Similarly, foreign corporations and banks raise funds from Americans, and foreigners have become important investors in the United States. A look at international



### Global Are U.S. Capital Markets Losing Their Edge?

Over the past few decades the United States lost its international dominance in a number of manufacturing industries, including automobiles and consumer electronics, as other countries became more competitive in global markets. Recent evidence suggests that financial markets now are undergoing a similar trend: Just as Ford and General Motors have lost global market share to Toyota and Honda, U.S. stock and bond markets recently have seen their share of sales of newly issued corporate securities slip. In 2008 the London and Hong Kong stock exchanges each handled a larger share of initial public offerings (IPO) of stock than did the New York Stock Exchange, which had been by far the dominant exchange in terms of IPO value just five years before. Likewise, the portion of new corporate bonds issued worldwide that are initially sold in U.S. capital markets has fallen below the share sold in European debt markets in each of the past two years.\*

Why do corporations that issue new securities to raise capital now conduct more of this business in financial markets in Europe and Asia? Among the factors contributing to this trend are quicker adoption of technological innovation by foreign financial markets, tighter immigration controls in the United States following the terrorist attacks in 2001, and perceptions that listing on American exchanges will expose

foreign securities issuers to greater risks of lawsuits. Many people see burdensome financial regulation as the main cause, however, and point specifically to the Sarbanes-Oxley Act of 2002. Congress passed this act after a number of accounting scandals involving U.S. corporations and the accounting firms that audited them came to light. Sarbanes-Oxley aims to strengthen the integrity of the auditing process and the quality of information provided in corporate financial statements. The costs to corporations of complying with the new rules and procedures are high, especially for smaller firms, but largely avoidable if firms choose to issue their securities in financial markets outside the United States. For this reason, there is much support for revising Sarbanes-Oxley to lessen its alleged harmful effects and induce more securities issuers back to United States financial markets. However, there is not conclusive evidence to support the view that Sarbanes-Oxley is the main cause of the relative decline of U.S. financial markets and therefore in need of reform.

Discussion of the relative decline of U.S. financial markets and debate about the factors that are contributing to it likely will continue. Chapter 8 provides more detail on the Sarbanes-Oxley Act and its effects on the U.S. financial system.

\*“Down on the Street,” *The Economist*, November 25, 2006, pp. 69–71.

bond markets and world stock markets will give us a picture of how this globalization of financial markets is taking place.

### International Bond Market, Eurobonds, and Eurocurrencies

The traditional instruments in the international bond market are known as **foreign bonds**. Foreign bonds are sold in a foreign country and are denominated in that country's currency. For example, if the German automaker Porsche sells a bond in the United States denominated in U.S. dollars, it is classified as a foreign bond. Foreign bonds have been an important instrument in the international capital market for centuries. In fact, a large percentage of U.S. railroads built in the nineteenth century were financed by sales of foreign bonds in Britain.

A more recent innovation in the international bond market is the **Eurobond**, a bond denominated in a currency other than that of the country in which it is sold—for example, a bond denominated in U.S. dollars sold in London. Currently, over 80% of the new issues in the international bond market are Eurobonds, and the market for these securities has grown very rapidly. As a result, the Eurobond market is now larger than the U.S. corporate bond market.

A variant of the Eurobond is **Eurocurrencies**, which are foreign currencies deposited in banks outside the home country. The most important of the Eurocurrencies are **Eurodollars**, which are U.S. dollars deposited in foreign banks outside the United States or in foreign branches of U.S. banks. Because these short-term deposits earn interest, they are similar to short-term Eurobonds. American banks borrow Eurodollar deposits from other banks or from their own foreign branches, and Eurodollars are now an important source of funds for American banks.

Note that the new currency, the euro, can create some confusion about the terms Eurobond, Eurocurrencies, and Eurodollars. A bond denominated in euros is called a Eurobond only *if it is sold outside the countries that have adopted the euro*. In fact, most Eurobonds are not denominated in euros but are instead denominated in U.S. dollars. Similarly, Eurodollars have nothing to do with euros, but are instead U.S. dollars deposited in banks outside the United States.

### World Stock Markets

Until recently, the U.S. stock market was by far the largest in the world, but foreign stock markets have been growing in importance, with the United States not always being number one. The increased interest in foreign stocks has prompted the development in the United States of mutual funds that specialize in trading in foreign stock markets. American investors now pay attention not only to the Dow Jones Industrial Average but also to stock price indexes for foreign stock markets such as the Nikkei 300 Average (Tokyo) and the Financial Times Stock Exchange (FTSE) 100-Share Index (London).

The internationalization of financial markets is having profound effects on the United States. Foreigners, particularly Japanese investors, are not only providing funds to corporations in the United States, but are also helping finance the federal government. Without these foreign funds, the U.S. economy would have grown far less rapidly in the last twenty years. The internationalization of financial markets is also leading the way to a more integrated world economy in which flows of goods and technology between countries are more commonplace. In later chapters, we will encounter many examples of the important roles that international factors play in our economy (see the Following the Financial News box).





## Following the Financial News Foreign Stock Market Indexes

Foreign Stock market indexes are published daily in the *Wall Street Journal* which reports developments in foreign stock markets.

The first column identifies the country of the foreign stock exchange followed by the market index; for example, the circled entry for the Nikkei 300 Average in Japan. The second column,

“CLOSE,” gives the closing value of the index, which was 8836.80 for the Nikkei 300 Average on January 9, 2009. The “% CHG” column indicates the percentage change in the index,  $-0.26\%$ . The “YTD % CHG” column indicates the percentage change in the index from the beginning of the year,  $-0.3\%$ .

### International Stock Indexes

Region/Country	Index	Close	LATEST WEEK % chg	52-WEEK RANGE Close (●)	Low	High	YTD % chg
World	The Global Dow	1537.63	-2.38		1264.68	2774.34	0.7
	DJ World Index	172.52	-2.23		143.63	297.12	0.3
	DJ World ex U.S.	149.08	-0.65		123.87	270.51	1.6
	MSCI EAFE*	1255.32	-0.81		1044.24	2206.72	1.4
DJ Wilshire	Global	1740.22	-2.31		1452.88	3041.34	0.3
	Global ex U.S.	1465.19	-0.89		1225.96	2723.67	1.4
	Global Dev. ex U.S.	1436.66	-0.72		1198.66	2584.38	1.5
	Global Small-Cap	1881.14	-1.94		1546.11	3457.48	0.1
	Global Large-Cap	1705.44	-2.36		1426.47	2962.78	0.3
Americas	DJ Americas	225.17	-3.58		186.51	375.06	-0.4
	Brazil Sao Paulo Bovespa	41582.94	3.33		29435.11	73516.80	10.7
	Canada S&P/TSX Comp	9085.18	-1.61		7724.76	15073.13	1.1
	Mexico IPC All-Share	21741.29	-6.49		16868.66	32095.04	-2.9
	Venezuela Caracas General	35187.85	0.28		33894.41	41450.77	0.7
	Europe	DJ Stoxx 600	207.82	1.64		182.13	344.78
DJ Stoxx 50		2158.95	0.72		1894.31	3539.20	4.5
Eurozone	DJ Euro Stoxx	228.20	-1.03		198.93	395.38	2.4
	DJ Euro Stoxx 50	2486.59	-1.97		2165.91	4236.68	1.4
Belgium	Bel-20	1973.95	-0.34		1783.70	4022.93	3.4
France	CAC 40	3299.50	-1.50		2881.26	5403.51	2.5
Germany	DAX	4783.89	-3.80		4127.41	7732	-0.5
Israel	Tel Aviv	677.14	1.46		592.07	1170.54	3.4
Italy	S&P/MIB	20093	0.70		17968	37547	3.3
Netherlands	AEX	266.18	3.08		222.93	496.12	8.2
Spain	IBEX 35	9378.5	-1.14		7905.4	14458.0	2.0
Sweden	SX All Share	212.28	-0.81		176.54	334.77	3.9
Switzerland	Swiss Market	5697.24	2.94		5144.02	8193.36	2.9
U.K.	FTSE 100	4448.54	-2.48		3780.96	6376.50	0.3
Asia-Pacific	DJ Asia-Pacific	93.73	-0.02		79.11	157.77	0.1
	Australia S&P/ASX 200	3735.7	0.59		3352.9	5981.6	0.4
	China Shanghai Composite	1904.86	4.62		1706.70	5497.90	4.6
	Hong Kong Hang Seng	14377.44	-4.42		11015.84	26867.01	-0.1
	India Bombay Sensex	9406.47	-5.54		8451.01	20827.45	-2.5
	Japan Nikkei Stock Avg	8836.80	-0.26		7162.90	14489.44	-0.3
	Singapore Straits Times	1806.02	-1.29		1600.28	3287.34	2.5
	South Korea Kospi	1180.96	2.04		938.75	1888.88	5.0
	Taiwan Weighted	4502.74	-1.93		4089.93	9295.20	-1.9

\* Europe, Australia, Far East, U.S.-dollar terms

Source: Thomson Reuters; WSJ Market Data Group



## FUNCTION OF FINANCIAL INTERMEDIARIES: INDIRECT FINANCE

As shown in Figure 1 (p. 26), funds can move from lenders to borrowers by a second route, called *indirect finance* because it involves a financial intermediary that stands between the lender-savers and the borrower-spenders and helps transfer funds from one to the other. A financial intermediary does this by borrowing funds from the lender-savers and then using these funds to make loans to borrower-spenders. For example, a bank might acquire funds by issuing a liability to the public (an asset for the public) in the form of savings deposits. It might then use the funds to acquire an asset by making a loan to General Motors or by buying a U.S. Treasury bond in the financial market. The ultimate result is that funds have been transferred from the public (the lender-savers) to GM or the U.S. Treasury (the borrower-spender) with the help of the financial intermediary (the bank).

The process of indirect finance using financial intermediaries, called **financial intermediation**, is the primary route for moving funds from lenders to borrowers. Indeed, although the media focus much of their attention on securities markets, particularly the stock market, financial intermediaries are a far more important source of financing for corporations than securities markets are. This is true not only for the United States but for other industrialized countries as well (see the Global box). Why are financial intermediaries and indirect finance so important in financial markets? To answer this question, we need to understand the role of transaction costs, risk sharing, and information costs in financial markets.

### Transaction Costs

**Transaction costs**, the time and money spent in carrying out financial transactions, are a major problem for people who have excess funds to lend. As we have seen, Carl the Carpenter needs \$1,000 for his new tool, and you know that it is an excellent investment opportunity. You have the cash and would like to lend him the money, but to protect your investment, you have to hire a lawyer to write up the loan contract that specifies how much interest Carl will pay you, when he will make these interest payments, and when he will repay you the \$1,000. Obtaining the contract will cost you \$500. When you figure in this transaction cost for making the loan, you realize that you can't earn enough from the deal (you spend \$500 to make perhaps \$100) and reluctantly tell Carl that he will have to look elsewhere.

This example illustrates that small savers like you or potential borrowers like Carl might be frozen out of financial markets and thus be unable to benefit from them. Can anyone come to the rescue? Financial intermediaries can.

Financial intermediaries can substantially reduce transaction costs because they have developed expertise in lowering them; and because their large size allows them to take advantage of **economies of scale**, the reduction in transaction costs per dollar of transactions as the size (scale) of transactions increases. For example, a bank knows how to find a good lawyer to produce an airtight loan contract, and this contract can be used over and over again in its loan transactions, thus lowering the legal cost per transaction. Instead of a loan contract (which may not be all that well written) costing \$500, a bank can hire a topflight lawyer for \$5,000 to draw up an airtight loan contract that can be used for 2,000 loans at a cost of \$2.50 per loan. At a cost of \$2.50 per loan, it now becomes profitable for the financial intermediary to lend Carl the \$1,000.

Because financial intermediaries are able to reduce transaction costs substantially, they make it possible for you to provide funds indirectly to people like Carl with



## Global The Importance of Financial Intermediaries Relative to Securities Markets: An International Comparison

Patterns of financing corporations differ across countries, but one key fact emerges: Studies of the major developed countries, including the United States, Canada, the United Kingdom, Japan, Italy, Germany, and France, show that when businesses go looking for funds to finance their activities, they usually obtain them indirectly through financial intermediaries and not directly from securities markets.\* Even in the United States and Canada, which have the most developed securities markets in the world, loans from financial intermediaries are far more important for corporate finance than securities markets are. The countries that have made the least use of securities markets are Germany and Japan; in these two countries, financing from financial intermediaries has been

almost ten times greater than that from securities markets. However, after the deregulation of Japanese securities markets in recent years, the share of corporate financing by financial intermediaries has been declining relative to the use of securities markets.

Although the dominance of financial intermediaries over securities markets is clear in all countries, the relative importance of bond versus stock markets differs widely across countries. In the United States, the bond market is far more important as a source of corporate finance: On average, the amount of new financing raised using bonds is ten times the amount raised using stocks. By contrast, countries such as France and Italy make more use of equities markets than of the bond market to raise capital.

\*See, for example, Colin Mayer, "Financial Systems, Corporate Finance, and Economic Development," in *Asymmetric Information, Corporate Finance, and Investment*, ed. R. Glenn Hubbard (Chicago: University of Chicago Press, 1990), pp. 307–332.

productive investment opportunities. In addition, a financial intermediary's low transaction costs mean that it can provide its customers with **liquidity services**, services that make it easier for customers to conduct transactions. For example, banks provide depositors with checking accounts that enable them to pay their bills easily. In addition, depositors can earn interest on checking and savings accounts and yet still convert them into goods and services whenever necessary.

### Risk Sharing

Another benefit made possible by the low transaction costs of financial institutions is that they can help reduce the exposure of investors to **risk**—that is, uncertainty about the returns investors will earn on assets. Financial intermediaries do this through the process known as **risk sharing**: They create and sell assets with risk characteristics that people are comfortable with, and the intermediaries then use the funds they acquire by selling these assets to purchase other assets that may have far more risk. Low transaction costs allow financial intermediaries to share risk at low cost, enabling them to earn a profit on the spread between the returns they earn on risky assets and the payments they make on the assets they have sold. This process of risk sharing is also sometimes referred to as **asset transformation**, because in a sense, risky assets are turned into safer assets for investors.

Financial intermediaries also promote risk sharing by helping individuals to diversify and thereby lower the amount of risk to which they are exposed. **Diversification** entails investing in a collection (**portfolio**) of assets whose returns do not always move together, with the result that overall risk is lower than for individual assets. (Diversification is just another name for the old adage, "You shouldn't put all your eggs in one

basket.”) Low transaction costs allow financial intermediaries to do this by pooling a collection of assets into a new asset and then selling it to individuals.

## Asymmetric Information: Adverse Selection and Moral Hazard

The presence of transaction costs in financial markets explains, in part, why financial intermediaries and indirect finance play such an important role in financial markets. An additional reason is that in financial markets, one party often does not know enough about the other party to make accurate decisions. This inequality is called **asymmetric information**. For example, a borrower who takes out a loan usually has better information about the potential returns and risk associated with the investment projects for which the funds are earmarked than the lender does. Lack of information creates problems in the financial system on two fronts: before the transaction is entered into and after.<sup>1</sup>

**Adverse selection** is the problem created by asymmetric information *before* the transaction occurs. Adverse selection in financial markets occurs when the potential borrowers who are the most likely to produce an undesirable (*adverse*) outcome—the bad credit risks—are the ones who most actively seek out a loan and are thus most likely to be selected. Because adverse selection makes it more likely that loans might be made to bad credit risks, lenders may decide not to make any loans even though there are good credit risks in the marketplace.

To understand why adverse selection occurs, suppose that you have two aunts to whom you might make a loan—Aunt Louise and Aunt Sheila. Aunt Louise is a conservative type who borrows only when she has an investment she is quite sure will pay off. Aunt Sheila, by contrast, is an inveterate gambler who has just come across a get-rich-quick scheme that will make her a millionaire if she can just borrow \$1,000 to invest in it. Unfortunately, as with most get-rich-quick schemes, there is a high probability that the investment won't pay off and that Aunt Sheila will lose the \$1,000.

Which of your aunts is more likely to call you to ask for a loan? Aunt Sheila, of course, because she has so much to gain if the investment pays off. You, however, would not want to make a loan to her because there is a high probability that her investment will turn sour and she will be unable to pay you back.

If you knew both your aunts very well—that is, if your information were not asymmetric—you wouldn't have a problem, because you would know that Aunt Sheila is a bad risk and so you would not lend to her. Suppose, though, that you don't know your aunts well. You are more likely to lend to Aunt Sheila than to Aunt Louise because Aunt Sheila would be hounding you for the loan. Because of the possibility of adverse selection, you might decide not to lend to either of your aunts, even though there are times when Aunt Louise, who is an excellent credit risk, might need a loan for a worthwhile investment.

**Moral hazard** is the problem created by asymmetric information *after* the transaction occurs. Moral hazard in financial markets is the risk (*hazard*) that the borrower might engage in activities that are undesirable (*immoral*) from the lender's point of view, because they make it less likely that the loan will be paid back. Because moral hazard lowers the probability that the loan will be repaid, lenders may decide that they would rather not make a loan.

---

<sup>1</sup>Asymmetric information and the adverse selection and moral hazard concepts are also crucial problems for the insurance industry.

As an example of moral hazard, suppose that you made a \$1,000 loan to another relative, Uncle Melvin, who needs the money to purchase a computer so he can set up a business typing students' term papers. Once you have made the loan, however, Uncle Melvin is more likely to slip off to the track and play the horses. If he bets on a 20-to-1 long shot and wins with your money, he is able to pay you back your \$1,000 and live high off the hog with the remaining \$19,000. But if he loses, as is likely, you don't get paid back, and all he has lost is his reputation as a reliable, upstanding uncle. Uncle Melvin therefore has an incentive to go to the track because his gains (\$19,000) if he bets correctly are much greater than the cost to him (his reputation) if he bets incorrectly. If you knew what Uncle Melvin was up to, you would prevent him from going to the track, and he would not be able to increase the moral hazard. However, because it is hard for you to keep informed about his whereabouts—that is, because information is asymmetric—there is a good chance that Uncle Melvin will go to the track and you will not get paid back. The risk of moral hazard might therefore discourage you from making the \$1,000 loan to Uncle Melvin, even if you were sure that you would be paid back if he used it to set up his business.

The problems created by adverse selection and moral hazard are an important impediment to well-functioning financial markets. Again, financial intermediaries can alleviate these problems.

With financial intermediaries in the economy, small savers can provide their funds to the financial markets by lending these funds to a trustworthy intermediary—say, the Honest John Bank—which in turn lends the funds out either by making loans or by buying securities such as stocks or bonds. Successful financial intermediaries have higher earnings on their investments than small savers, because they are better equipped than individuals to screen out bad credit risks from good ones, thereby reducing losses due to adverse selection. In addition, financial intermediaries have high earnings because they develop expertise in monitoring the parties they lend to, thus reducing losses due to moral hazard. The result is that financial intermediaries can afford to pay lender-savers interest or provide substantial services and still earn a profit.

As we have seen, financial intermediaries play an important role in the economy because they provide liquidity services, promote risk sharing, and solve information problems, thereby allowing small savers and borrowers to benefit from the existence of financial markets. The success of financial intermediaries in performing this role is evidenced by the fact that most Americans invest their savings with them and obtain loans from them. Financial intermediaries play a key role in improving economic efficiency because they help financial markets channel funds from lender-savers to people with productive investment opportunities. Without a well-functioning set of financial intermediaries, it is very hard for an economy to reach its full potential. We will explore further the role of financial intermediaries in the economy in Part 3.

## TYPES OF FINANCIAL INTERMEDIARIES

---

We have seen why financial intermediaries play such an important role in the economy. Now we look at the principal financial intermediaries themselves and how they perform the intermediation function. They fall into three categories: depository institutions (banks), contractual savings institutions, and investment intermediaries. Table 3 provides a guide to the discussion of the financial intermediaries that fit into these three categories by describing their primary liabilities (sources of funds) and assets (uses of funds). The

TABLE 3

Primary Assets and Liabilities of Financial Intermediaries		
Type of Intermediary	Primary Liabilities (Sources of Funds)	Primary Assets (Uses of Funds)
<b>Depository institutions (banks)</b>		
Commercial banks	Deposits	Business and consumer loans, mortgages, U.S. government securities and municipal bonds
Savings and loan associations	Deposits	Mortgages
Mutual savings banks	Deposits	Mortgages
Credit unions	Deposits	Consumer loans
<b>Contractual savings institutions</b>		
Life insurance companies	Premiums from policies	Corporate bonds and mortgages
Fire and casualty insurance companies	Premiums from policies	Municipal bonds, corporate bonds and stock, U.S. government securities
Pension funds, government retirement funds	Employer and employee contributions	Corporate bonds and stock
<b>Investment intermediaries</b>		
Finance companies	Commercial paper, stocks, bonds	Consumer and business loans
Mutual funds	Shares	Stocks, bonds
Money market mutual funds	Shares	Money market instruments

relative size of these intermediaries in the United States is indicated in Table 4, which lists the amount of their assets at the end of 1980, 1990, 2000, and 2008.

### Depository Institutions

Depository institutions (for simplicity, we refer to these as *banks* throughout this text) are financial intermediaries that accept deposits from individuals and institutions and make loans. The study of money and banking focuses special attention on this group of financial institutions, because they are involved in the creation of deposits, an important component of the money supply. These institutions include commercial banks and the so-called **thrift institutions (thrifts)**: savings and loan associations, mutual savings banks, and credit unions.

**Commercial Banks** These financial intermediaries raise funds primarily by issuing checkable deposits (deposits on which checks can be written), savings deposits (deposits that are payable on demand but do not allow their owner to write checks), and time deposits (deposits with fixed terms to maturity). They then use these funds to make commercial, consumer, and mortgage loans and to buy U.S. government securities

TABLE 4

## Principal Financial Intermediaries and Value of Their Assets

Type of Intermediary	Value of Assets (\$ billions, end of year)			
	1980	1990	2000	2008
<b>Depository institutions (banks)</b>				
Commercial banks	1,481	3,334	6,469	12,272
Savings and loan associations and mutual savings banks	792	1,365	1,218	1,518
Credit unions	67	215	441	801
<b>Contractual savings institutions</b>				
Life insurance companies	464	1,367	3,136	4,798
Fire and casualty insurance companies	182	533	862	1,337
Pension funds (private)	504	1,629	4,355	5,193
State and local government retirement funds	197	737	2,293	2,730
<b>Investment intermediaries</b>				
Finance companies	205	610	1,140	1,910
Mutual funds	70	654	4,435	6,588
Money market mutual funds	76	498	1,812	3,376

Source: Federal Reserve Flow of Funds Accounts: [www.federalreserve.gov/releases/Z1/](http://www.federalreserve.gov/releases/Z1/).

and municipal bonds. There are slightly fewer than 7,150 commercial banks in the United States, and as a group, they are the largest financial intermediary and have the most diversified portfolios (collections) of assets.

### Savings and Loan Associations (S&Ls) and Mutual Savings Banks

These depository institutions, of which there are approximately 1,225, obtain funds primarily through savings deposits (often called *shares*) and time and checkable deposits. In the past, these institutions were constrained in their activities and mostly made mortgage loans for residential housing. Over time, these restrictions have been loosened so that the distinction between these depository institutions and commercial banks has blurred. These intermediaries have become more alike and are now more competitive with each other.

**Credit Unions** These financial institutions, numbering about 8,100, are typically very small cooperative lending institutions organized around a particular group: union members, employees of a particular firm, and so forth. They acquire funds from deposits called *shares* and primarily make consumer loans.

### Contractual Savings Institutions

Contractual savings institutions, such as insurance companies and pension funds, are financial intermediaries that acquire funds at periodic intervals on a contractual basis.



Because they can predict with reasonable accuracy how much they will have to pay out in benefits in the coming years, they do not have to worry as much as depository institutions about losing funds quickly. As a result, the liquidity of assets is not as important a consideration for them as it is for depository institutions, and they tend to invest their funds primarily in long-term securities such as corporate bonds, stocks, and mortgages.

**Life Insurance Companies** Life insurance companies insure people against financial hazards following a death and sell annuities (annual income payments upon retirement). They acquire funds from the premiums that people pay to keep their policies in force and use them mainly to buy corporate bonds and mortgages. They also purchase stocks, but are restricted in the amount that they can hold. Currently, with \$4.8 trillion in assets, they are among the largest of the contractual savings institutions.

**Fire and Casualty Insurance Companies** These companies insure their policyholders against loss from theft, fire, and accidents. They are very much like life insurance companies, receiving funds through premiums for their policies, but they have a greater possibility of loss of funds if major disasters occur. For this reason, they use their funds to buy more liquid assets than life insurance companies do. Their largest holding of assets is municipal bonds; they also hold corporate bonds and stocks and U.S. government securities.

**Pension Funds and Government Retirement Funds** Private pension funds and state and local retirement funds provide retirement income in the form of annuities to employees who are covered by a pension plan. Funds are acquired by contributions from employers and from employees, who either have a contribution automatically deducted from their paychecks or contribute voluntarily. The largest asset holdings of pension funds are corporate bonds and stocks. The establishment of pension funds has been actively encouraged by the federal government, both through legislation requiring pension plans and through tax incentives to encourage contributions.

## Investment Intermediaries

This category of financial intermediaries includes finance companies, mutual funds, and money market mutual funds.

**Finance Companies** Finance companies raise funds by selling commercial paper (a short-term debt instrument) and by issuing stocks and bonds. They lend these funds to consumers, who make purchases of such items as furniture, automobiles, and home improvements, and to small businesses. Some finance companies are organized by a parent corporation to help sell its product. For example, Ford Motor Credit Company makes loans to consumers who purchase Ford automobiles.

**Mutual Funds** These financial intermediaries acquire funds by selling shares to many individuals and use the proceeds to purchase diversified portfolios of stocks and bonds. Mutual funds allow shareholders to pool their resources so that they can take advantage of lower transaction costs when buying large blocks of stocks or bonds. In addition, mutual funds allow shareholders to hold more diversified portfolios than they otherwise would. Shareholders can sell (redeem) shares at any time, but the value of these shares will be determined by the value of the mutual fund's holdings of securities. Because these fluctuate greatly, the value of mutual fund shares will, too; therefore, investments in mutual funds can be risky.

**Money Market Mutual Funds** These financial institutions have the characteristics of a mutual fund but also function to some extent as a depository institution because they offer deposit-type accounts. Like most mutual funds, they sell shares to acquire funds that are then used to buy money market instruments that are both safe and very liquid. The interest on these assets is paid out to the shareholders.

A key feature of these funds is that shareholders can write checks against the value of their shareholdings. In effect, shares in a money market mutual fund function like checking account deposits that pay interest. Money market mutual funds have experienced extraordinary growth since 1971, when they first appeared. By 2008, their assets had climbed to nearly \$3.4 trillion.

**Investment Banks** Despite its name, an investment bank is not a bank or a financial intermediary in the ordinary sense; that is, it does not take in deposits and then lend them out. Instead, an investment bank is a different type of intermediary that helps a corporation issue securities. First it advises the corporation on which type of securities to issue (stocks or bonds); then it helps sell (**underwrite**) the securities by purchasing them from the corporation at a predetermined price and reselling them in the market. Investment banks also act as deal makers and earn enormous fees by helping corporations acquire other companies through mergers or acquisitions.

## REGULATION OF THE FINANCIAL SYSTEM

---

The financial system is among the most heavily regulated sectors of the American economy. The government regulates financial markets for two main reasons: to increase the information available to investors and to ensure the soundness of the financial system. We will examine how these two reasons have led to the present regulatory environment. As a study aid, the principal regulatory agencies of the U.S. financial system are listed in Table 5.

### Increasing Information Available to Investors

Asymmetric information in financial markets means that investors may be subject to adverse selection and moral hazard problems that may hinder the efficient operation of financial markets. Risky firms or outright crooks may be the most eager to sell securities to unwary investors, and the resulting adverse selection problem may keep investors out of financial markets. Furthermore, once an investor has bought a security, thereby lending money to a firm, the borrower may have incentives to engage in risky activities or to commit outright fraud. The presence of this moral hazard problem may also keep investors away from financial markets. Government regulation can reduce adverse selection and moral hazard problems in financial markets and increase their efficiency by increasing the amount of information available to investors.

As a result of the stock market crash in 1929 and revelations of widespread fraud in the aftermath, political demands for regulation culminated in the Securities Act of 1933 and the establishment of the Securities and Exchange Commission (SEC) in 1934. The SEC requires corporations issuing securities to disclose certain information about their sales, assets, and earnings to the public and restricts trading by the largest stockholders (known as *insiders*) in the corporation. By requiring disclosure of this information and by discouraging insider trading, which could be used to manipulate security prices, the SEC hopes that investors will be better informed and protected from some

TABLE 5

## Principal Regulatory Agencies of the U.S. Financial System

Regulatory Agency	Subject of Regulation	Nature of Regulations
Securities and Exchange Commission (SEC)	Organized exchanges and financial markets	Requires disclosure of information, restricts insider trading
Commodities Futures Trading Commission (CFTC)	Futures market exchanges	Regulates procedures for trading in futures markets
Office of the Comptroller of the Currency	Federally chartered commercial banks	Charters and examines the books of federally chartered commercial banks and imposes restrictions on assets they can hold
National Credit Union Administration (NCUA)	Federally chartered credit unions	Charters and examines the books of federally chartered credit unions and imposes restrictions on assets they can hold
State banking and insurance commissions	State-chartered depository institutions	Charter and examine the books of state-chartered banks and insurance companies, impose restrictions on assets they can hold, and impose restrictions on branching
Federal Deposit Insurance Corporation (FDIC)	Commercial banks, mutual savings banks, savings and loan associations	Provides insurance of up to \$100,000 (temporarily \$250,000) for each depositor at a bank, examines the books of insured banks, and imposes restrictions on assets they can hold
Federal Reserve System	All depository institutions	Examines the books of commercial banks that are members of the system, sets reserve requirements for all banks
Office of Thrift Supervision	Savings and loan associations	Examines the books of savings and loan associations, imposes restrictions on assets they can hold

of the abuses in financial markets that occurred before 1933. Indeed, in recent years, the SEC has been particularly active in prosecuting people involved in insider trading.

### Ensuring the Soundness of Financial Intermediaries

Asymmetric information can lead to the widespread collapse of financial intermediaries, referred to as a **financial panic**. Because providers of funds to financial intermediaries may not be able to assess whether the institutions holding their funds are sound, if they

have doubts about the overall health of financial intermediaries, they may want to pull their funds out of both sound and unsound institutions. The possible outcome is a financial panic that produces large losses for the public and causes serious damage to the economy. To protect the public and the economy from financial panics, the government has implemented six types of regulations.

**Restrictions on Entry** State banking and insurance commissions, as well as the Office of the Comptroller of the Currency (an agency of the federal government), have created tight regulations governing who is allowed to set up a financial intermediary. Individuals or groups that want to establish a financial intermediary, such as a bank or an insurance company, must obtain a charter from the state or the federal government. Only if they are upstanding citizens with impeccable credentials and a large amount of initial funds will they be given a charter.

**Disclosure** There are stringent reporting requirements for financial intermediaries. Their bookkeeping must follow certain strict principles, their books are subject to periodic inspection, and they must make certain information available to the public.

**Restrictions on Assets and Activities** There are restrictions on what financial intermediaries are allowed to do and what assets they can hold. Before you put your funds into a bank or some other such institution, you would want to know that your funds are safe and that the bank or other financial intermediary will be able to meet its obligations to you. One way of doing this is to restrict the financial intermediary from engaging in certain risky activities. Legislation passed in 1933 (repealed in 1999) separated commercial banking from the securities industry so that banks could not engage in risky ventures associated with this industry. Another way to limit a financial intermediary's risky behavior is to restrict it from holding certain risky assets, or at least from holding a greater quantity of these risky assets than is prudent. For example, commercial banks and other depository institutions are not allowed to hold common stock because stock prices experience substantial fluctuations. Insurance companies are allowed to hold common stock, but their holdings cannot exceed a certain fraction of their total assets.

**Deposit Insurance** The government can insure people's deposits so that they do not suffer great financial loss if the financial intermediary that holds these deposits should fail. The most important government agency that provides this type of insurance is the Federal Deposit Insurance Corporation (FDIC), which insures each depositor at a commercial bank or mutual savings bank up to a loss of \$100,000 per account (temporarily \$250,000). Premiums paid by these financial institutions go into the FDIC's Deposit Insurance Fund, which is used to pay off depositors if an institution fails. The FDIC was created in 1934 after the massive bank failures of 1930–1933, in which the savings of many depositors at commercial banks were wiped out. The National Credit Union Share Insurance Fund (NCUSIF) does the same for credit unions.

**Limits on Competition** Politicians have often declared that unbridled competition among financial intermediaries promotes failures that will harm the public. Although the evidence that competition has this effect is extremely weak, state and federal governments at times have imposed restrictions on the opening of additional locations (branches). In the past, banks were not allowed to open up branches in other states, and in some states, banks were restricted from opening branches in additional locations.

**Restrictions on Interest Rates** Competition has also been inhibited by regulations that impose restrictions on interest rates that can be paid on deposits. For decades after 1933, banks were prohibited from paying interest on checking accounts. In addition, until 1986, the Federal Reserve System had the power under *Regulation Q* to set maximum interest rates that banks could pay on savings deposits. These regulations were instituted because of the widespread belief that unrestricted interest-rate competition helped encourage bank failures during the Great Depression. Later evidence does not seem to support this view, and Regulation Q has been abolished (although there are still restrictions on paying interest on checking accounts held by businesses).

In later chapters, we will look more closely at government regulation of financial markets and will see whether it has improved their functioning.



### Financial Regulation Abroad

Not surprisingly, given the similarity of the economic system here and in Japan, Canada, and the nations of Western Europe, financial regulation in these countries is similar to financial regulation in the United States. The provision of information is improved by requiring corporations issuing securities to report details about assets and liabilities, earnings, and sales of stock, and by prohibiting insider trading. The soundness of intermediaries is ensured by licensing, periodic inspection of financial intermediaries' books, and the provision of deposit insurance (although its coverage is smaller than in the United States and its existence is often intentionally not advertised).

The major differences between financial regulation in the United States and abroad relate to bank regulation. In the past, the United States was the only industrialized country to subject banks to restrictions on branching, which limited banks' size and restricted them to certain geographic regions. (These restrictions were abolished by legislation in 1994.) U.S. banks are also the most restricted in the range of assets they may hold. Banks abroad frequently hold shares in commercial firms; in Japan and Germany, those stakes can be sizable.

## SUMMARY

1. The basic function of financial markets is to channel funds from savers who have an excess of funds to spenders who have a shortage of funds. Financial markets can do this either through direct finance, in which borrowers borrow funds directly from lenders by selling them securities, or through indirect finance, which involves a financial intermediary that stands between the lender-savers and the borrower-spenders and helps transfer funds from one to the other. This channeling of funds improves the economic welfare of everyone in the society. Because they allow funds to move from people who have no productive investment opportunities to those who have such opportunities, financial markets contribute to economic efficiency. In addition, channeling of funds directly benefits consumers by allowing them to make purchases when they need them most.
2. Financial markets can be classified as debt and equity markets, primary and secondary markets, exchanges and over-the-counter markets, and money and capital markets.
3. The principal money market instruments (debt instruments with maturities of less than one year) are U.S. Treasury bills, negotiable bank certificates of deposit, commercial paper, repurchase agreements, federal

funds, and Eurodollars. The principal capital market instruments (debt and equity instruments with maturities greater than one year) are stocks, mortgages, corporate bonds, U.S. government securities, U.S. government agency securities, state and local government bonds, and consumer and bank commercial loans.

4. An important trend in recent years is the growing internationalization of financial markets. Eurobonds, which are denominated in a currency other than that of the country in which they are sold, are now the dominant security in the international bond market and have surpassed U.S. corporate bonds as a source of new funds. Eurodollars, which are U.S. dollars deposited in foreign banks, are an important source of funds for American banks.
5. Financial intermediaries are financial institutions that acquire funds by issuing liabilities and, in turn, use those funds to acquire assets by purchasing securities or making loans. Financial intermediaries play an important role in the financial system because they reduce transaction costs, allow risk sharing, and solve problems created by adverse selection and moral hazard. As a result, financial intermediaries allow small savers and borrowers to benefit from the existence of financial markets, thereby increasing the efficiency of the economy.
6. The principal financial intermediaries fall into three categories: (a) banks—commercial banks, savings and loan associations, mutual savings banks, and credit unions; (b) contractual savings institutions—life insurance companies, fire and casualty insurance companies, and pension funds; and (c) investment intermediaries—finance companies, mutual funds, and money market mutual funds.
7. The government regulates financial markets and financial intermediaries for two main reasons: to increase the information available to investors and to ensure the soundness of the financial system. Regulations include requiring disclosure of information to the public, restrictions on who can set up a financial intermediary, restrictions on what assets financial intermediaries can hold, the provision of deposit insurance, limits on competition, and restrictions on interest rates.

## KEY TERMS

---

adverse selection, p. 41

asset transformation, p. 40

asymmetric information, p. 41

brokers, p. 28

capital, p. 27

capital market, p. 29

currency, p. 30

dealers, p. 28

default, p. 30

diversification, p. 40

dividends, p. 28

economies of scale, p. 39

equities, p. 28

Eurobond, p. 37

Eurocurrencies, p. 37

Eurodollars, p. 37

exchanges, p. 29

federal funds rate, p. 33

financial intermediation, p. 39

financial panic, p. 47

foreign bonds, p. 37

intermediate-term, p. 28

investment bank, p. 28

liabilities, p. 26

liquid, p. 29

liquidity services, p. 40

long-term, p. 28

maturity, p. 28

money market, p. 29

moral hazard, p. 41

over-the-counter (OTC) market,  
p. 29

portfolio, p. 40

primary market, p. 28

risk, p. 40

risk sharing, p. 40

secondary market, p. 28

short-term, p. 28

thrift institutions (thrifts), p. 43


transaction costs, p. 39

underwrite, p. 46

underwriting, p. 28



## QUESTIONS AND PROBLEMS

All questions and problems are available in  at [www.myeconlab.com/mishkin](http://www.myeconlab.com/mishkin).

1. Why is a share of Microsoft common stock an asset for its owner and a liability for Microsoft?
2. If I can buy a car today for \$5,000 and it is worth \$10,000 in extra income next year to me because it enables me to get a job as a traveling anvil seller, should I take out a loan from Larry the Loan Shark at a 90% interest rate if no one else will give me a loan? Will I be better or worse off as a result of taking out this loan? Can you make a case for legalizing loan-sharking?
3. Some economists suspect that one of the reasons that economies in developing countries grow so slowly is that they do not have well-developed financial markets. Does this argument make sense?
4. The U.S. economy borrowed heavily from the British in the nineteenth century to build a railroad system. What was the principal debt instrument used? Why did this make both countries better off?
5. “Because corporations do not actually raise any funds in secondary markets, they are less important to the economy than primary markets.” Comment.
6. If you suspect that a company will go bankrupt next year, which would you rather hold, bonds issued by the company or equities issued by the company? Why?
7. How can the adverse selection problem explain why you are more likely to make a loan to a family member than to a stranger?
8. Think of one example in which you have had to deal with the adverse selection problem.
9. Why do loan sharks worry less about moral hazard in connection with their borrowers than some other lenders do?
10. If you are an employer, what kinds of moral hazard problems might you worry about with your employees?
11. If there were no asymmetry in the information that a borrower and a lender had, could there still be a moral hazard problem?
12. “In a world without information and transaction costs, financial intermediaries would not exist.” Is this statement true, false, or uncertain? Explain your answer.
13. Why might you be willing to make a loan to your neighbor by putting funds in a savings account earning a 5% interest rate at the bank and having the bank lend her the funds at a 10% interest rate rather than lend her the funds yourself?
14. How does risk sharing benefit both financial intermediaries and private investors?
15. Discuss some of the manifestations of the globalization of world capital markets.

## WEB EXERCISES

1. One of the single best sources of information about financial institutions is the U.S. Flow of Funds report produced by the Federal Reserve. This document contains data on most financial intermediaries. Go to [www.federalreserve.gov/releases/Z1/](http://www.federalreserve.gov/releases/Z1/). Go to the most current release. You may have to load Acrobat Reader if your computer does not already have it; the site has a link for a free patch. Go to the Level Tables and answer the following.
  - a. What percentage of assets do commercial banks hold in loans? What percentage of assets are held in mortgage loans?
  - b. What percentage of assets do savings and loans hold in mortgage loans?
  - c. What percentage of assets do credit unions hold in mortgage loans and in consumer loans?
2. The most famous financial market in the world is the New York Stock Exchange. Go to [www.nyse.com](http://www.nyse.com).
  - a. What is the mission of the NYSE?
  - b. Firms must pay a fee to list their shares for sale on the NYSE. What would be the fee for a firm with five million common shares outstanding?

## WEB REFERENCES

---

<http://stockcharts.com/charts/historical>

This page contains historical stock index charts for the Dow Jones Industrial Average, S&P 500, NASDAQ, 30-year Treasury Bond, and Gold prices.

[www.nyse.com](http://www.nyse.com)

New York Stock Exchange. Find listed companies, quotes, company historical data, real-time market indexes, and more.

[www.nasdaq.com](http://www.nasdaq.com)

Detailed market and security information for the Nasdaq OTC stock exchange.

<http://finance.yahoo.com/intlindices?e=americas>

Major world stock indexes, with charts, news, and components.

[www.sec.gov](http://www.sec.gov)

The United States Securities and Exchange Commission home page. It contains vast SEC resources, laws and regulations, investor information, and litigation.



### MyEconLab CAN HELP YOU GET A BETTER GRADE

---

If your exam were tomorrow, would you be ready? For each chapter, MyEconLab Practice Test and Study Plans pinpoint which sections you have mastered and which ones you need to study. That way, you are more efficient with your study time, and you are better prepared for your exams.

To see how it works, turn to page 20 and then go to: [www.myeconlab.com/mishkin](http://www.myeconlab.com/mishkin)