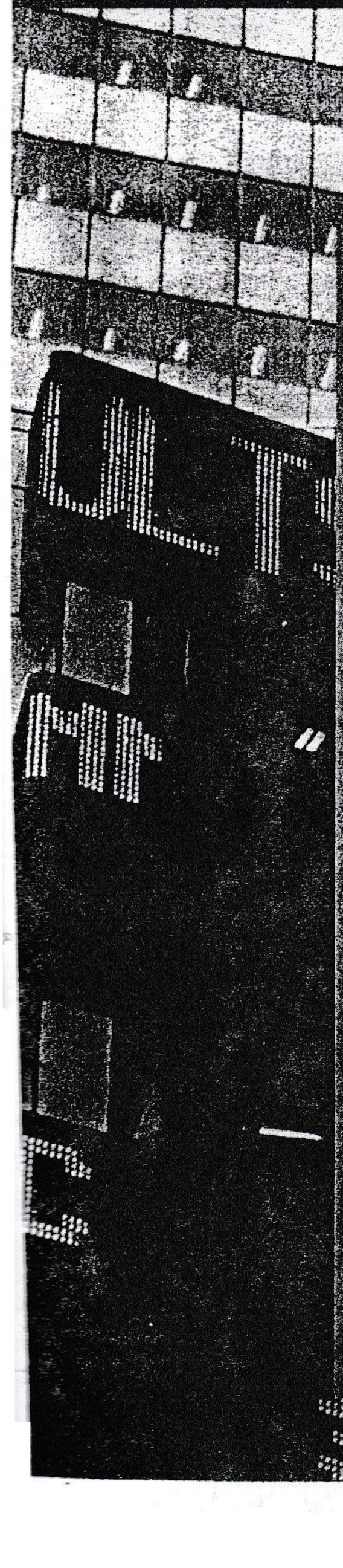
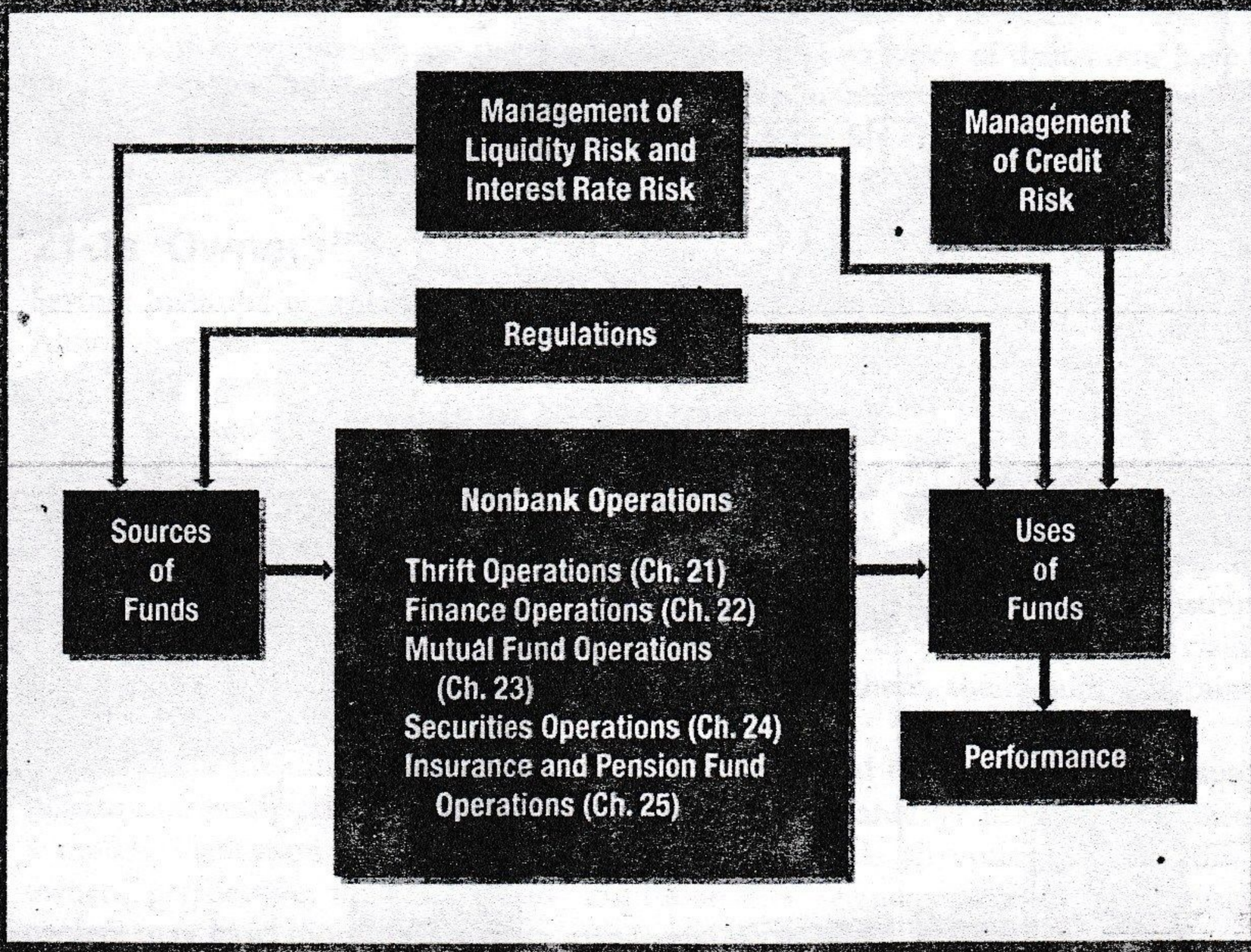
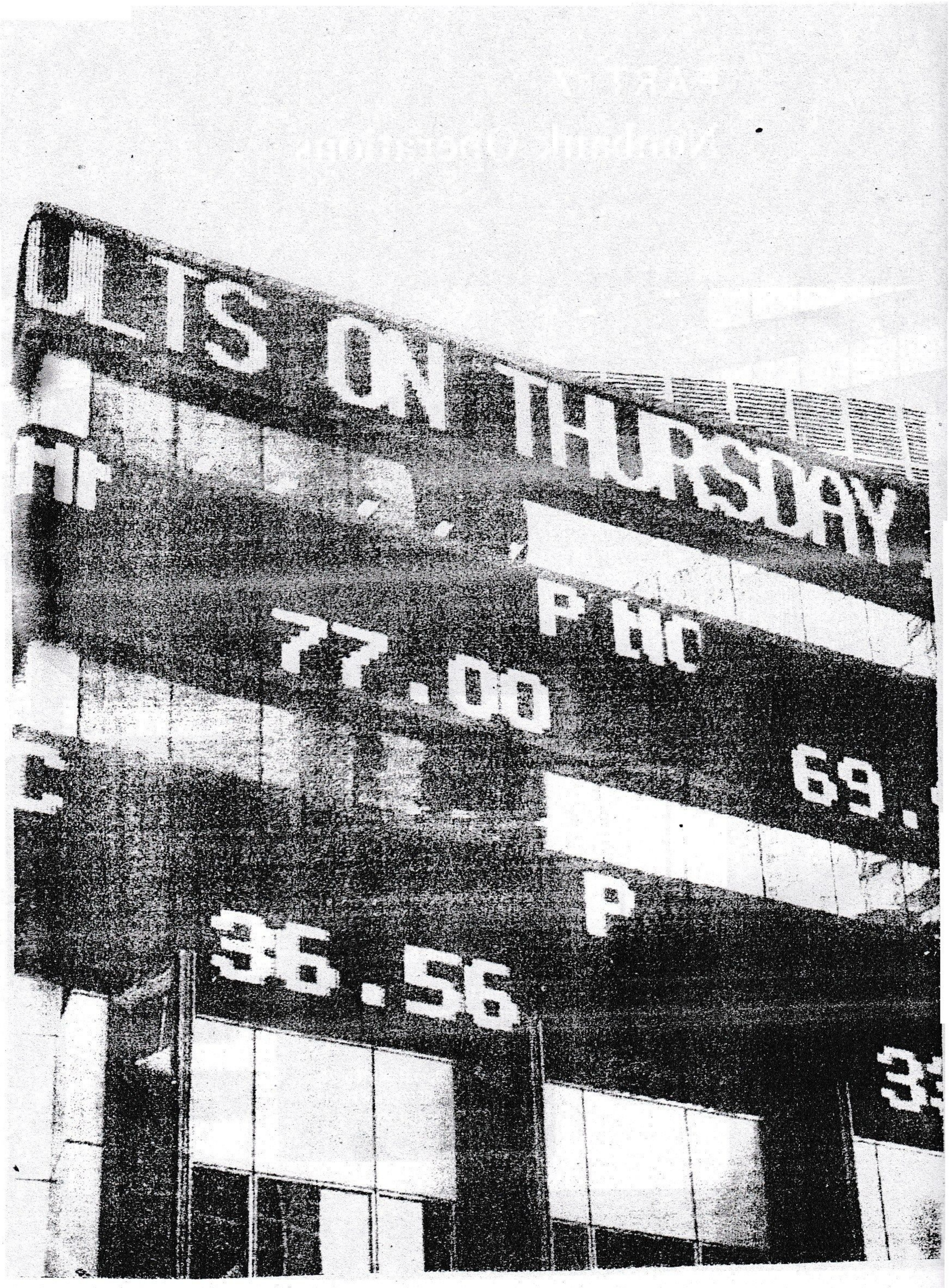
PART 7
Nonbank Operations



The chapters in Part 7 cover the key nonbank operations. Each chapter is devoted to a particular type of operation, with a focus on sources of funds, uses of funds, regulations, management, and recent performance. Some of the institutions discussed are independent; others are units (subsidiaries) of financial conglomerates. Each financial institution's interactions with other institutions and its participation in financial markets are also emphasized in these chapters.




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21
Thrift Operations

CHAPTER OBJECTIVES

The specific objectives of this chapter are to:

- identify the key sources and uses of funds for savings institutions,
- describe the exposure of savings institutions to various types of risk,
- explain how savings institutions manage interest rate risk,
- explain the valuation of a savings institution,
- describe how savings institutions have been exposed to recent crises, and
- provide a background on credit unions, including their main sources and uses of funds.

The term *thrift institution* (or *savings institution*) is normally used to refer to a depository institution that specializes in mortgage lending. These institutions were created to accept deposits and use much of the funds for mortgage loans, home-equity loans, and mortgage-backed securities. Some thrift operations are independent financial institutions, whereas others are units (subsidiaries) of financial conglomerates. Sometimes credit unions are also considered to be thrift institutions. For this reason, credit unions are also covered in this chapter.

21-1 Background on Savings Institutions

Savings institutions include savings banks and savings and loan associations (S&Ls). Savings and loan associations are the dominant type. The two types of thrifts now have very similar sources and uses of funds. Therefore, the remainder of the chapter focuses on savings institutions in general, abbreviated as SIs. Most SIs are small, with assets of less than $1 billion. SIs can be chartered at the state or federal level.

21-1a Ownership of Savings Institutions

Savings institutions are classified as either stock owned or mutual (owned by depositors). Although most SIs are mutual, many SIs have shifted their ownership structure from depositors to shareholders through what is known as a mutual-to-stock conversion. This conversion allows SIs to obtain additional capital by issuing stock.

Beyond having the capability to boost capital, stock-owned institutions also provide their owners with greater potential to benefit from their performance. The dividends and/or stock price of a high-performance institution can grow, thereby providing direct benefits to the shareholders. In contrast, the owners (depositors) of a mutual institution do not benefit directly from high performance. Although they have a pro rata claim to the mutual SI's net worth while they maintain deposits there, their claim is eliminated once they close their account.

Because of the difference in owner control, stock-owned institutions are more susceptible to unfriendly takeovers. It is virtually impossible for another firm to take control of a mutual institution because management generally holds all voting rights. From the owners' perspective, the stock-owned institution may seem more desirable because the owners may have more influence on managerial decisions.

When a mutual SI is involved in an acquisition, it first converts to a stock-owned SI. If it is the acquiring firm, it then arranges to purchase the existing stock of the institution to

be acquired. Conversely, if it is to be acquired, its stock is purchased by the acquiring institution. This process is often referred to as a **merger-conversion**.

Some SIs have been acquired by commercial banks that wanted to diversify their operations. Even after such an acquisition, the SI may still maintain its operations but under the ownership of the commercial bank. Consolidation and acquisitions have caused the number of mutual and stock SIs to decline consistently over the years. There are less than half as many SIs today as in 1994.

Although consolidation among SIs has resulted in a smaller number of institutions, the total assets of SIs in aggregate have increased. The total assets of stock SIs have more than doubled since 1994 while the total assets of mutual SIs have remained steady.

WEB

www.occ.gov
Background on laws and regulations imposed on savings institutions.

21-1b Regulation of Savings Institutions

As a result of the Dodd–Frank Act, the regulation of SIs has been revised. The Office of the Controller of the Currency supervises mutual SIs and federal SIs. The Federal Reserve regulates parent holding companies of SIs. The Bureau of Consumer Protection supervises larger SIs (with at least $10 billion in assets) to ensure that they comply with federal consumer protection laws. Thus there is some regulatory overlap among the regulators. State-chartered SIs are regulated by the respective state. SIs may also need to satisfy various guidelines established by the Federal Deposit Insurance Corporation (FDIC) in addition to satisfying their respective regulators.

The Dodd–Frank Act removed some advantages of SIs. Holding companies of SIs will have to satisfy minimum capital standards that are imposed on bank holding companies. Federal SIs have to satisfy the Qualified Thrift Lender Test, which requires that at least 65 percent of the asset portfolio contain qualified thrift investments such as housing loans, home-equity loans, mortgage-backed securities, small business loans, and credit card loans. Yet SIs are subject to limits on commercial loans and consumer loans.

Although regulations are converging among regulators, there are still differences. Consequently, SIs have an incentive to go regulator shopping, in search of a more lenient regulator that allows more freedom in operations, or requires less paperwork for compliance purposes. In fact, some SIs are now attempting to become commercial banks or credit unions because of the recent regulatory changes that have removed some of the previous advantages of being an SI.

Deposit Insurance The insuring agency for SIs is the Deposit Insurance Fund (DIF), which is administered by the FDIC and insures deposits. The insurable limit is presently $250,000. The DIF was formed on March 31, 2006, as a result of the merger of the **Savings Association Insurance Fund (SAIF)**, which had formerly insured S&Ls, and the Bank Insurance Fund (BIF), which had insured savings banks. The FDIC charges the SIs annual insurance premiums, which are placed in the DIF. If an SI fails, the FDIC uses funds from the DIF to reimburse depositors.

Regulatory Assessment of Savings Institutions Regulators conduct periodic on-site examinations of SIs using the CAMELS rating system in a manner similar to commercial banks. CAMELS is an acronym that represents the following characteristics: capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to market conditions. Each SI is assigned a composite CAMELS rating between 1 (best) and 5 (worst). If an SI receives a composite CAMELS rating of 4 or higher, it is classified as a "problem" and receives close attention. It may be subject to corrective action by regulators.

Deregulation of Services In recent years, SIs have been granted more flexibility to diversify the products and services they provide. They have diversified their business by

merging with other businesses specializing in real estate, insurance, and brokerage. By offering discount brokerage service and other nontraditional services, an SI can attract customers searching for a one-stop shop.

21-2 Sources and Uses of Funds

Like commercial banks, SIs serve as valuable financial intermediaries. However, their sources and uses of funds are different from those of commercial banks, so their management also differs from that of commercial banks.

WEB

http://research.stlouisfed.org/fred2
Time-series data on various savings rates and total savings breakdown.

21-2a Sources of Funds

The main sources of funds for SIs are described next.

Deposits Savings institutions obtain most of their funds from a variety of savings and time deposits, including passbook savings, retail certificates of deposit (CDs), and money market deposit accounts (MMDAs).

Borrowed Funds When SIs are unable to attract sufficient deposits, they can borrow on a short-term basis from three sources. First, they can borrow from other depository institutions that have excess funds in the federal funds market. The interest rate on funds borrowed in this market is referred to as the federal funds rate.

Second, SIs can borrow through a repurchase agreement (repo). With a repo, an institution sells government securities with a commitment to repurchase those securities shortly thereafter. This essentially reflects a short-term loan to the institution that initially sold the securities until the time when it buys the securities back.

Third, SIs can borrow at the Federal Reserve, but this is not as common as the other alternatives.

Capital The **capital** (or net worth) of an SI is primarily composed of retained earnings and funds obtained from issuing stock. During periods when SIs are performing well, capital is boosted by additional retained earnings. Capital is commonly used to support ongoing or expanding operations. Capital also serves as a cushion for SIs that experience losses, such as during the credit crisis for many SIs.

21-2b Uses of Funds

The main uses of funds for SIs are:

- Cash
- Mortgages
- Mortgage-backed securities
- Other securities
- Consumer and commercial loans
- Other uses

Cash Savings institutions maintain cash to satisfy reserve requirements enforced by the Federal Reserve System and to accommodate withdrawal requests of depositors. In addition, some SIs hold correspondent cash balances at other financial institutions in return for various services.

Mortgages Mortgages are the primary asset of SIs. They typically have long-term maturities and can usually be prepaid by borrowers. About 90 percent of the mortgages

originated are for homes or multifamily dwellings, while 10 percent are for commercial properties.

Mortgages can be sold in the secondary market, although their market value changes in response to interest rate movements, so they are subject to interest rate risk as well as credit (default) risk. To protect against interest rate risk, SIs use a variety of techniques, discussed later in the chapter.

Mortgage-Backed Securities Some savings institutions purchase mortgage-backed securities. The return on these securities is highly influenced by the default rate on the underlying mortgages. During the credit crisis there were many defaults, and savings institutions that had purchased mortgage-backed securities commonly experienced losses.

Other Securities Savings institutions invest in securities such as Treasury bonds and corporate bonds. These securities provide liquidity, as they can quickly be sold in the secondary market if funds are needed.

Savings institutions sometimes rely on credit ratings when considering an investment in corporate bonds. However, during the financial crisis, the ratings agencies were criticized for being too liberal with their ratings. The Wall Street Reform and Consumer Protection Act (also called the Dodd-Frank Act) of 2010 required that SIs use not only credit ratings assigned by credit rating agencies, but also other methods to assess the risk of debt securities, including their own assessment of risk. By complementing credit ratings with their own analysis, SIs should be less likely to invest in securities with excessive risk.

Consumer and Commercial Loans Many SIs have increased their consumer and commercial loans. This can reduce their heavy exposure to mortgage loans.

Because consumer and corporate loan maturities closely match their liability maturities, SIs that reduce their fixed-rate mortgage loans in favor of consumer loans reduce their exposure to interest rate risk.

Other Uses of Funds Savings institutions can provide temporary financing to other institutions through the use of repurchase agreements. In addition, they can lend funds on a short-term basis through the federal funds market. Both methods allow them to efficiently use funds that they will have available for only a short period of time.

21-2c Balance Sheet of Savings Institutions

The sources of funds represent liabilities or equity of an SI, while the uses of funds represent assets. Each SI determines its own composition of liabilities and assets, which determines its specific operations.

EXAMPLE

Exhibit 21.1 summarizes the main sources and uses of funds of SIs by showing the balance sheet of Ashland Savings. The assets are shown on the left side of the balance sheet. The second column shows the dollar amount, and the third column shows the size of each asset in proportion to the total assets, to illustrate how Ashland Savings distributes its funds. Ashland's main asset is mortgage loans. The allocation of assets by Ashland Savings reflects the average allocation for all SIs. Allocations vary considerably among SIs, however, as some institutions maintain a much larger amount of mortgages than others.

Ashland Savings incurs some expenses from all types of deposits. Specifically, it hires employees to serve depositors. Its composition of liabilities determines its interest expenses, since it must pay a higher interest rate on large CDs than on small savings deposits. Ashland also incurs expenses from managing its assets. In particular, it hires employees to assess the creditworthiness of individuals

Exhibit 21.1 Balance Sheet of Ashland Savings as of June 30, 2011

ASSETS	DOLLAR AMOUNT (IN MILLIONS)	PROPORTION OF TOTAL ASSETS	LIABILITIES AND STOCK HOLDERS' EQUITY	DOLLAR AMOUNT (IN MILLIONS)	PROPORTION OF TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY
Cash (includes required reserves)	$ 60	6%	Savings deposits	$ 100	10%
Single-family mortgages	500	50%	NOW accounts	50	5%
Multifamily mortgages	50	5%	Money market deposit accounts	300	30%
Other mortgages	40	4%	Short-term CDs	360	36%
Mortgage-backed securities	70	7%	CDs with maturities beyond one year	100	10%
Other securities	100	10%			
Consumer loans	70	7%			
Commercial loans	40	4%			
Fixed assets	70	7%	Common stock issued	50	5%
			Retained earnings	40	4%
TOTAL ASSETS	$1,000	100%	TOTAL LIABILITIES AND STOCK HOLDERS' EQUITY	$1,000	100%

and businesses that request loans. In general, Ashland wants to generate enough income from its assets to cover its expenses and provide a reasonable return to its shareholders. Its primary source of income is interest received from the mortgage loans that it provides. Its capital is shown on the balance sheet as common stock issued and retained earnings. ●

Exhibit 21.2 shows how savings institutions use the key balance sheet items to finance economic growth. They channel funds from their depositors with surplus funds to other households that purchase homes. They also channel funds to support investment in commercial property. They serve a major role in the development of the housing and commercial property market. They also use some deposits to purchase Treasury and municipal securities and thereby finance spending by the Treasury and municipalities.

21-2d Interaction with Other Financial Institutions

When SIs obtain and use funds, they commonly interact with other financial institutions, as summarized in Exhibit 21.3. They compete with commercial banks and money market mutual funds to obtain funds, and they compete with commercial banks and finance companies in lending funds. After originating mortgages, they sometimes sell them to insurance companies in the secondary market. Many SIs have other financial institutions as subsidiaries that provide a variety of services, including consumer finance, trust company, mortgage banking, discount brokerage, and insurance.

Exhibit 21.2 How Savings Institutions Finance Economic Growth

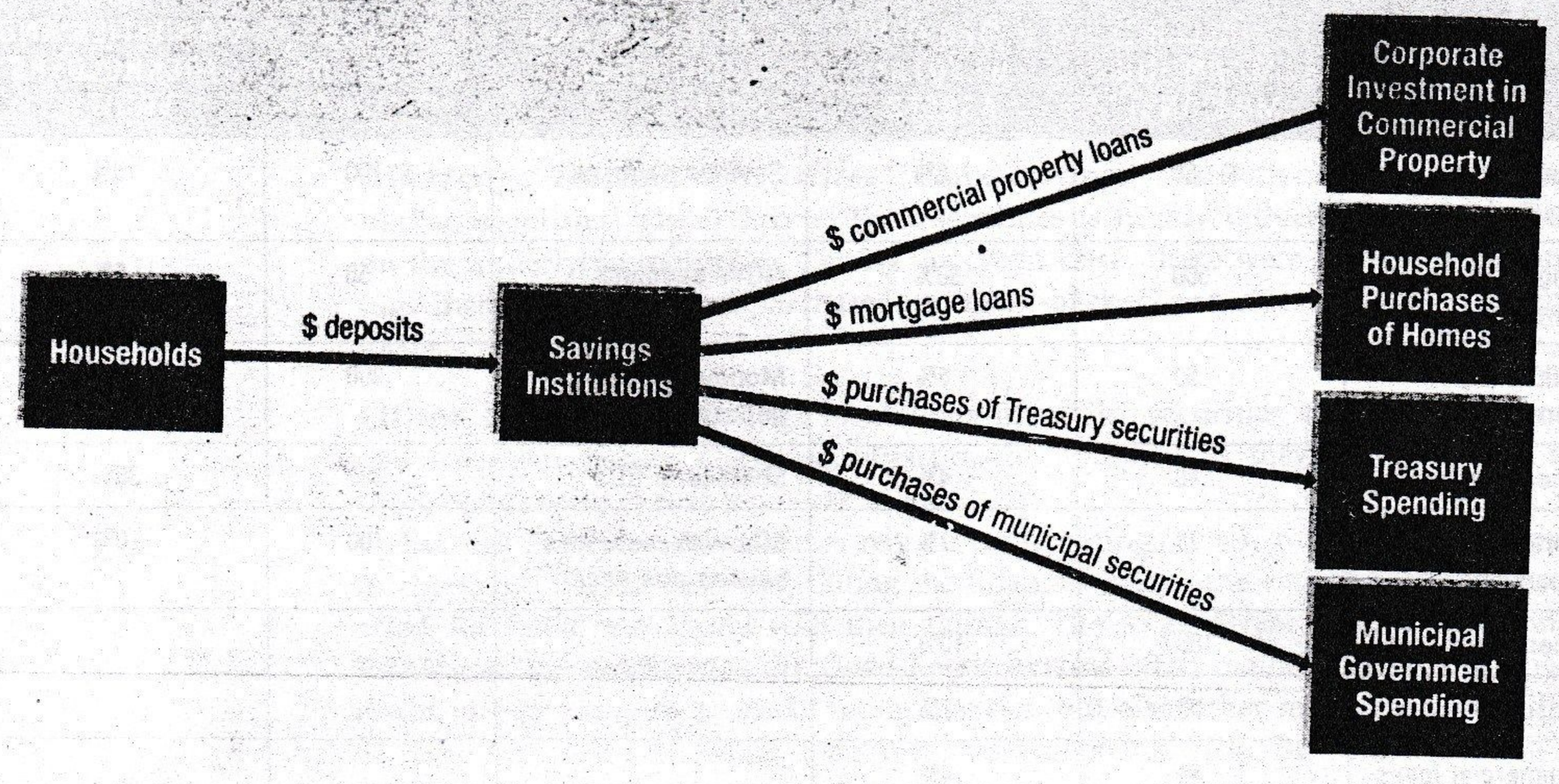


Exhibit 21.3 Interactions between Savings Institutions and Other Financial Institutions

TYPE OF FINANCIAL INSTITUTION	INTERACTION WITH SAVINGS INSTITUTIONS
Commercial banks	• Compete with SIs in attracting deposits, providing consumer loans, and providing commercial loans. • Have merged with SIs in recent years.
Finance companies	• Compete with SIs in providing consumer and commercial loans.
Money market mutual funds	• Compete with SIs in attracting short-term investments from investors.
Investment companies and brokerage firms	• Serve SIs that wish to engage in interest rate swaps and interest rate caps. • Have agreements with SIs to offer brokerage services to their customers.
Insurance companies	• Purchase mortgages from SIs in the secondary market.

21-2e Participation in Financial Markets

When SIs perform their various functions, they rely on various financial markets, as summarized in Exhibit 21.4. Mortgage markets provide a source of funds to SIs that desire to issue mortgage-backed securities or sell their mortgages in the secondary market. Bond markets serve as a use of funds for SIs with excess funds and as a source of funds for SIs that issue new bonds in the primary market or sell bond holdings in the secondary market.

21-3 Valuation of a Savings Institution

Savings institutions (or SI operating units that are part of a financial conglomerate) are commonly valued by their managers to monitor progress over time or by other financial institutions that are considering an acquisition. The value of an SI can be modeled as the

Exhibit 21.4 Participation of Savings Institutions in Financial Markets

FINANCIAL MARKET	HOW SAVINGS INSTITUTIONS PARTICIPATE IN THIS MARKET
Money markets	• Compete with other depository institutions for short-term deposits by issuing commercial paper.
Mortgage markets	• Sell mortgages in the secondary market and issue mortgage-backed securities.
Bond markets	• Purchase bonds for their investment portfolios. • Issue bonds to obtain long-term funds.
Futures markets	• Hedge against interest rate movements by taking positions in interest rate futures.
Options markets	• Hedge against interest rate movements by purchasing put options on interest rate futures.
Swap markets	• Hedge against interest rate movements by engaging in interest rate swaps.

present value of its future cash flows. Thus the value of an SI should change in response to changes in its expected cash flows in the future and to changes in the required rate by investors:

$$\Delta V = f[\underbrace{\Delta E(CF)}_{+}, \underbrace{\Delta k}_{-}]$$

21-3a Factors That Affect Cash Flows

The change in an SI's expected cash flows may be modeled as

$$\Delta E(CF) = f(\underbrace{\Delta ECON}_{+}, \underbrace{\Delta R_f}_{-}, \underbrace{\Delta INDUS}_{?}, \underbrace{\Delta MANAB}_{+})$$

where ECON represents economic growth, R_f represents the risk-free interest rate, INDUS represents the industry conditions (such as regulations) to which SIs are exposed, and MANAB represents abilities of the SI's management.

Change in Economic Growth Economic growth can enhance an SI's cash flows by increasing household demand for consumer or mortgage loans, thereby allowing the SI to provide more loans. In addition, loan defaults are normally reduced in periods of strong economic growth. Furthermore, the demand for other financial services (such as real estate and insurance services) provided by SIs tends to be higher during periods of strong economic growth when households have relatively high levels of disposable income.

Change in the Risk-Free Interest Rate An SI's cash flows may be inversely related to interest rate movements. First, if the risk-free interest rate decreases, other market rates may also decline, and the result may be a stronger demand for the SI's loans. Second, SIs rely heavily on short-term deposits as a source of funds, and the rates paid on these deposits are typically revised in accordance with other interest rate movements. The assets (such as consumer loans and fixed-rate mortgage loans) of savings institutions commonly have fixed rates, so interest income does not adjust to interest rate movements until those assets reach maturity or are sold. Therefore, when interest rates fall, an SI's cost of obtaining funds declines more than the decline in the interest earned on its loans and investments. An increase in interest rates can reduce the SI's expected cash flows because the interest paid on deposits may increase more than the interest earned on loans and investments.

Change in Industry Conditions Savings institutions are exposed to industry conditions such as regulatory constraints, technology, and competition. If regulatory constraints are reduced, the expected cash flows of some SIs should increase. For example, when regulators reduced constraints on the services that could be offered, SIs were able to provide more services for their customers. At the same time, however, a reduction in regulations can cause less efficient SIs to lose market share and therefore experience a reduction in cash flows.

Change in Management Abilities An SI has control over the composition of its managers and its organizational structure. Its managers attempt to make internal decisions that will capitalize on the external forces (economic growth, interest rates, regulatory constraints) that the institution cannot control. Thus the management skills of an SI influence its expected cash flows. For example, skillful managers will recognize whether to increase the funds allocated to fixed-rate mortgages based on expectations of future interest rates. They can capitalize on regulatory changes by offering a diversified set of services that accommodate specific customers. They can use technology in a manner that reduces expenses. They may also use derivative securities to alter the potential return and the exposure of the SI to interest rate movements.

WEB

www.fdic.gov
Information about the performance of savings institutions.

21-3b Factors That Affect the Required Rate of Return

The change in required rate of return by investors who invest in an SI can be modeled as

$$\Delta k = f(\underbrace{\Delta R_f}_{+}, \underbrace{\Delta RP}_{+})$$

where R_f represents the risk-free interest rate and RP represents the risk premium.

An increase in the risk-free rate results in a higher return required by investors. High inflation, economic growth, and a high budget deficit place upward pressure on interest rates, whereas money supply growth places downward pressure on interest rates (assuming it does not cause inflation).

Change in the Risk Premium If the risk premium on an SI rises, so will the required rate of return by investors who invest in the SI. High economic growth results in less risk for an SI because its consumer loans, mortgage loans, and investments in debt securities are less likely to default. The effect of industry conditions on SIs can be mixed. A reduction in regulatory constraints on services can reduce the risk of SIs as they diversify their offerings, or it can increase their risk if they engage in some services that are riskier than their traditional services. An improvement in management skills may reduce the perceived risk of the SIs and therefore reduce the risk premium.

Exhibit 21.5 provides a framework for valuing an SI based on the preceding discussion. In general, the value of an SI is favorably affected by strong economic growth, a reduction in interest rates, and high-quality management. The sensitivity of an SI's value to these conditions depends on its own characteristics. For example, the value of an SI that emphasizes real estate and insurance services will be more sensitive to regulations that restrict or limit the offering of these services than will the value of an SI that focuses on traditional mortgage lending.

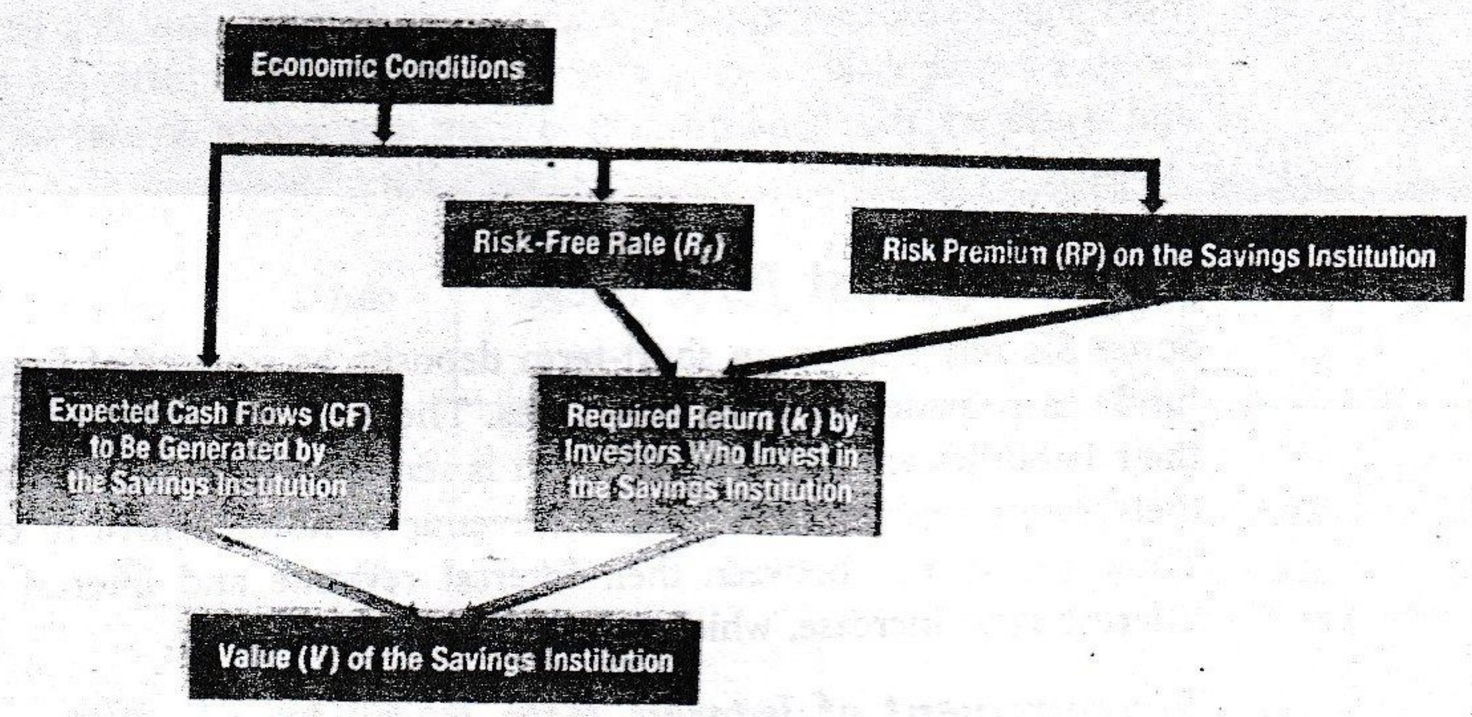
WEB

www.occ.gov
Review of performance of savings institutions overall.

21-4 Exposure to Risk

Like commercial banks, SIs are exposed to liquidity risk, credit risk, and interest rate risk. However, because their sources and uses of funds differ from those of banks, their exposure to risk varies as well.

Exhibit 21.5 Framework for Valuing a Savings Institution



- A stronger economy leads to an increase in the demand for loans (nterest income) and other services (noninterest income), fewer loan defaults, and therefore beter cash flows for the savings institution.
- A lower risk-free rate leads to a lower cost of deposits obtained anc more favorable valuations of the mortgages held by the savings institution.
- The valuation is also influenced by industry conditions and the savirg institution's management (not shown in the diagram). These factors affect the risk premium (and therefore the required return by investors) and the expected cash flows to be generated by the savings institution. In particular, regulatory changes can affect the level of competition and therefore affect the savings institution's cash flows and risk premium.

21-4a Liquidity Risk

Because SIs commonly use short-term liabilities to finance long-term assets, they depend on additional deposits to accommodate withdrawal requests. If new deposits are not sufficient to cover withdrawal requests, these institutions can experience liquidity problems. To remedy this situation, they can obtain funds through repurchase agreements or borrow funds in the federal funds market. However, these sources of funds will resolve only a short-term deficiency. They will not be appropriate if a longer-term liquidity problem exists.

An alternative way to remedy a problem of insufficient liquidity is to sell assets in exchange for cash. Savings institutions can sell their Treasury securities or even some of their mortgages in the secondary market. Although the sale of assets can boost liquidity, it also reduces the SI's size and possibly its earnings. Therefore, minor liquidity deficiencies are typically resolved by increasing liabilities rather thar selling assets.

21-4b Credit Risk

Because mortgages represent the primary asset, they are the main reason for credit risk at SIs. Although Federal Housing Authority (FHA) and Veterans Administration (VA) mortgages originated by SIs are insured against credit risk, conventional mortgages are not. Private insurance can normally be obtained for conventional mortgages, but

SIs often incur the risk themselves rather than pay for the insurance. If they perform adequate credit analysis on their potential borrowers and geographically diversify their mortgage loans, they should be able to maintain a low degree of credit risk. Many SIs took excessive risks when granting or purchasing mortgages in the 2003–2006 period and suffered the consequences during the credit crisis, as explained later in this chapter.

21-4c Interest Rate Risk

Some SIs rely heavily on short-term deposits as sources of funds and use most of their funds to provide fixed-rate mortgages. These SIs are subject to interest rate risk because their liabilities are rate sensitive (cost is sensitive to changes in market interest rates) but their assets are not rate sensitive (revenue is not sensitive to changes in market rates). Thus, the spread between their interest revenue and interest expenses narrows when interest rates increase, which reduces their profitability.

Measurement of Interest Rate Risk SIs commonly measure the gap between their rate-sensitive assets and their rate-sensitive liabilities in order to determine their exposure to interest rate risk. However, the gap measurement is dependent on the criteria used to classify an asset or liability as rate sensitive.

EXAMPLE

Siesta Savings Institution was recently created. It obtains most of its funds from two-year CDs and offers 30-year fixed-rate mortgages. It defines its assets and liabilities as rate sensitive if they are repriced within a year or less. Most of Siesta's liabilities are initially considered to be rate insensitive because their rate will not be affected within the year. Its assets are also considered to be rate insensitive because their rate will not be affected within the year. Thus, Siesta's gap is close to zero because its rate-sensitive assets and liabilities are close to zero, which implies that the institution is not exposed to interest rate risk. Nevertheless, Siesta will be adversely affected by an increase in interest rates because its interest expenses would rise over time while the rate on its mortgage loans is fixed for a long-term period. Thus, the gap measurement is not an accurate indicator of Siesta's exposure to interest rate risk. ●

Given the limitations of the gap measurement, some SIs measure the duration of their respective assets and liabilities to determine the imbalance in sensitivity of interest revenue versus expenses to interest rate movements. An example follows.

EXAMPLE

Tucson Savings Institution (TSI) desires to measure the duration of its assets and liabilities. It first needs to classify each balance sheet component into various maturity categories, as shown in Exhibit 21.6. The rates on most adjustable-rate mortgages are adjusted every year, which is why the amounts under the longer-term categories show zero. The average duration for each asset category is provided below the dollar amount. Some fixed-rate mortgages are classified in the earlier term categories because they are maturing or will be sold soon. The duration of 0.91 for adjustable-rate mortgages is a weighted average of their durations, computed as 0.30(7,000/27,000) + 0.80(15,000/27,000) + 1.9(4,000/27,000)1.9 + 2.9(1,000/27,000).

The durations for fixed-rate mortgages and investment securities were computed in a similar manner. The duration for total assets of 2.76 years was computed as a weighted average of the individual assets: 0.91(27,000/61,000) + 5.32(20,000/61,000) + 2.65(14,000/61,000) = 2.76.

A similar procedure was used to estimate the duration of liabilities. NOW accounts and passbook savings have no specified maturity, but their rate is adjusted less frequently than the rate on MMDAs, which is why MMDAs have a shorter duration. The total liability duration is about 0.45. Tucson Savings Institution's total asset duration is more than six times its liability duration. Thus its future performance is highly exposed to interest rate movements. Its market value would decrease

Exhibit 21.6 Duration Schedule for Tucson Savings Institution (Dollar Amounts Are in Thousands)

ASSETS	RATE READJUSTMENT PERIOD: LESS THAN 6 MONTHS	6 MONTHS TO 1 YEAR	1–3 YEARS	3–5 YEARS	5–10 YEARS	10–20 YEARS	OVER 20 YEARS	TOTAL
Adjustable-rate mortgages								
Amount ($)	$ 7,000	$15,000	$4,000	$1,000	$ 0	$ 0	$ 0	$27,000
Average duration (yr)	.30	.80	1.90	2.90	0	0	0	.91
Fixed-rate mortgages								
Amount ($)	500	500	1,000	1,000	2,000	10,000	5,000	20,000
Average duration (yr)	.25	.60	1.80	2.60	4.30	5.50	7.60	5.32
Investment securities								
Amount ($)	2,000	3,000	4,000	2,000	1,000	0	2,000	14,000
Average duration (yr)	.20	.70	1.70	3.20	5.30	0	8.05	2.65
Total amount ($)	$ 9,500	$18,500	$9,000	$4,000	$3,000	$10,000	$7,000	$61,000
							Asset duration =	2.76
LIABILITIES								
Fixed-maturity deposits								
Amount ($)	$14,000	$ 9,000	$2,000	$1,000	$0	$0	$0	$26,000
Average duration (yr)	.30	.60	1.80	2.80	0	0	0	.62
NOW accounts								
Amount ($)	4,000	0	0	0	0	0	0	4,000
Average duration (yr)	.40	0	0	0	0	0	0	.40
MMDAs								
Amount ($)	15,000	0	0	0	0	0	0	15,000
Average duration (yr)	.20	0	0	0	0	0	0	.20
Passbook accounts								
Amount ($)	13,000	0	0	0	0		0	13,000
Average duration (yr)	.40	0	0	0	0	0	0	.40
Total amount ($)	$46,000	$ 9,000	$2,000	$1,000	$0	$0	$0	$58,000
							Liability duration =	.45

substantially in response to an increase in interest rates. TSI can reduce its exposure to interest rate risk by reducing the proportion of its assets in the long-duration categories. ●

Financial institutions use computer programs to estimate their asset and liability duration and apply sensitivity analysis to proposed balance sheet adjustments. For example, TSI could determine how its asset and liability duration would change if it engaged in a promotional effort to issue five-year deposits and used the funds to offer adjustable-rate mortgages.

21-5 Management of Interest Rate Risk

Savings institutions can use a variety of methods to manage their interest rate risk, including the following:

- Adjustable-rate mortgages
- Interest rate futures contracts
- Interest rate swaps

21-5a Adjustable-Rate Mortgages

The interest rates on adjustable-rate mortgages (ARMs) are tied to market-determined rates such as the one-year Treasury bill rate and are periodically adjusted in accordance with the formula stated in the ARM contract. A variety of formulas are used. Adjustable-rate mortgages enable SIs to maintain a more stable spread between interest revenue and interest expenses.

Although ARMs reduce the adverse impact of rising interest rates, they also reduce the favorable impact of declining interest rates. Suppose an SI that obtains most of its funds from short-term deposits uses the funds to provide fixed-rate mortgages. If interest rates decline and the SI does not hedge its exposure to interest rate risk, the spread will increase. If the SI uses ARMs as a hedging strategy, however, the interest on loans will decrease during a period of declining rates, so the spread will not widen.

While ARMs reduce the risks of SIs, they expose consumers to interest rate risk. Although ARMs typically have a maximum cap limiting the increase in interest rates (such as 2 percent per year and 5 percent over the loan life), the impact on household mortgage payments is still significant. Because some homeowners prefer fixed-rate mortgages, most SIs continue to offer them and therefore incur interest rate risk. Thus, additional strategies besides the use of ARMs are necessary to reduce this risk.

21-5b Interest Rate Futures Contracts

An interest rate futures contract allows for the purchase of a specific amount of a particular debt security for a specified price at a future point in time. Sellers of futures contracts are obligated to sell the securities for the contract price at the stated future point in time.

Some SIs use Treasury bond futures contracts because the cash flow characteristics of Treasury bonds resemble those of fixed-rate mortgages. Like mortgages, Treasury bonds offer fixed periodic payments, so their market value moves inversely to interest rate fluctuations. Savings institutions that sell futures contracts on these securities can effectively hedge their fixed-rate mortgages. If interest rates rise, the market value of the securities represented by the futures contract will decrease. The SIs will benefit from the difference between the market value at which they can purchase these securities in the future and the futures price at which they will sell the securities. This can offset the reduced spread between their interest revenue and interest expenses during the period of rising interest rates.

21-5c Interest Rate Swaps

Another strategy for reducing interest rate risk is the interest rate swap, which allows an SI to swap fixed-rate payments (an outflow) for variable-rate payments (an inflow). The fixed-rate outflow payments can be matched against the fixed-rate mortgages held so that a certain spread can be achieved. In addition, the variable-rate inflows due to the swap can be matched against the variable cost of funds. In a rising rate environment, the institution's fixed-rate outflow payments from the swap agreement remain fixed while the variable-rate inflow payments due to the swap increase. This favorable result

can partially offset the normally unfavorable impact of rising interest rates on an SI's spread. However, an interest rate swap also reduces the favorable impact of declining interest rates. Inflow interest payments decrease while the outflow interest payments remain the same during a period of declining rates.

21-5d Conclusions about Managing Interest Rate Risk

Many SIs have used the strategies just described to reduce their Interest rate risk. Although these strategies are useful, it is virtually impossible to eliminate the risk completely. One reason for this is the potential prepayment of mortgages. Homeowners often pay off their mortgages before maturity without much advance notice to the SI. Consequently, SIs do not really know the actual maturity of the mortgages they hold and cannot perfectly match the interest rate sensitivity of their assets and liabilities.

WEB

www.fdic.gov
Profiles of individual savings institutions.

21-6 Exposure of Savings Institutions to Crises

Savings institutions were devastated by the savings institution crisis during the late 1980s and by the credit crisis in the 2008–2009 period, as explained next.

21-6a Savings Institution Crisis in the Late 1980s

One reason for the crisis of the late 1980s was an increase in interest rates. Those SIs that had provided long-term mortgages were adversely affected because the interest they earned on assets remained constant while the interest they paid on liabilities increased. Consequently, their net interest income declined.

In addition, many SIs had been making commercial loans without much expertise in assessing the ability of firms to repay their loans. Many loan defaults occurred in the Southwest, where economies were devastated by a decline in oil prices. Layoffs in the oil industry resulted, causing a decline in income. Real estate prices dropped so dramatically that when SIs foreclosed on the bad real estate loans, the property that had served as collateral was worth less than the loans. Although some housing loans defaulted, the major loan losses were in commercial real estate, such as office complexes. Some SIs also experienced losses on their investments in junk bonds.

Many SIs experienced a cash flow deficiency as a result of their loan losses, as the inflows from loan repayments were not sufficient to cover depositor withdrawals. Consequently, they were forced to offer higher interest rates on deposits to attract more funds. As depositors became aware of the crisis, they began to withdraw their savings from SIs, which exacerbated the illiquidity problem.

Fraud In addition, many SIs experienced financial problems because of various fraudulent activities. In one of the most common types of fraud, managers used depositors' funds to purchase personal assets, including yachts, artwork, and automobile dealerships. At many SIs, there had clearly been a lack of oversight by executives and by the board of directors, which allowed some managers to serve their own interests rather than shareholder interests. Many of the problems of the SIs could have been reduced if proper governance had been applied.

Provisions of the FIRREA To prevent further failures and restore confidence, the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) was enacted in 1989. Among other things, the FIRREA increased penalties for officers of SIs and other financial institutions convicted of fraud, revised the regulation of SIs, and raised the capital requirements for SIs. It also allowed commercial banks to acquire SIs. In addition,

SIs were required to sell off any holdings of junk bonds and prohibited from investing in them in the future.

The Resolution Trust Corporation (RTC) was formed to deal with insolvent SIs. The RTC liquidated the assets of the insolvent SIs and reimbursed depositors or sold the SIs to other financial institutions. By the time the RTC was closed at the end of 1995, it had either liquidated or found a buyer for 747 insolvent SIs. It had also recovered $394 billion from liquidating assets and another $2.4 billion from legal settlements.

Beyond restoring confidence in the SI industry, the FIRREA significantly improved conditions for SIs over the next 15 years. Savings institutions slowly built their capital and sold off risky assets. Nevertheless, many SIs pursued risky strategies again in the 2004–2006 period, which led to high returns when economic conditions were strong, but caused major problems for them during the credit crisis, as described next.

21-6b Credit Crisis of 2008–2009

During the 2003–2006 period of strong economic growth, some SIs used very liberal standards when offering subprime mortgage loans for borrowers who did not qualify for conventional mortgages. They were commonly charging a premium of 3 percentage points or more on subprime mortgage loans over the rate charged on conventional mortgages, along with additional fees at the time the loans were originated.

The interest rates on subprime mortgage loans were commonly fixed for the first two years and were adjusted in line with market interest rates after that. As market interest rates increased in the 2005–2006 period, some subprime mortgage borrowers could not meet their monthly payments. In addition, the supply of new homes continued to rise while the demand for homes suddenly declined, causing a surplus of homes. Furthermore, the economy weakened in the 2008–2009 period, and home prices plummeted. The values of many homes were substantially less than the respective mortgage balances on the homes. Consequently, there were many mortgage foreclosures. By January 2009, about 10 percent of all mortgages were experiencing late payments or were in foreclosure.

Some SIs originated subprime loans and then immediately sold them to institutional investors in the secondary market. These institutions were less exposed to credit risk because they limited their holdings of subprime mortgages. However, the financial firms that focused entirely on subprime mortgages and maintained the mortgages after originating them experienced poor performance in the 2008–2009 period when many borrowers could not cover their mortgage payments. Several subprime lenders went bankrupt. Even the subprime lenders that sold all the mortgages they created were adversely affected by the credit crisis, because once the economy weakened, the level of mortgage originations declined substantially.

Many SIs invested heavily in mortgage-backed securities without recognizing the potential credit risk of these securities. They incurred losses on these investments because of late payments or defaults on the mortgages represented by these securities. Some SIs sold credit default swap contracts on mortgage-backed securities, which required them to cover damages when some mortgage-backed securities held by other financial institutions defaulted.

In general, the adverse effects of the credit crisis in the 2008–2009 period were very similar to the adverse effects during the savings institution crisis in the late 1980s. For both crises, those SIs that used their funds to engage in loans and investments with very high risk suffered major losses once economic conditions weakened.

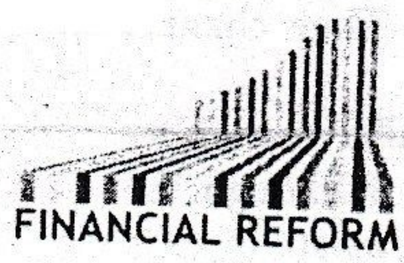
Notable Failures during the Credit Crisis The financial problems of SIs were highlighted by several large failures, including Countrywide Financial (the second

largest SI), IndyMac (the eighth largest SI), and Washington Mutual (the largest SI). Countrywide Financial used a very aggressive strategy in which it approved subprime mortgage loans of questionable quality. Many of these loans defaulted in 2007. In January 2008, Countrywide Financial was failing and was acquired by Bank of America.

IndyMac suffered major losses on its $32 billion portfolio of mortgages. In July 2008, as rumors circulated about the possible failure of IndyMac, depositors began to withdraw an average of $100 million per day. This created severe liquidity problems for IndyMac, which caused the FDIC to intervene and take it over.

In September 2008, Washington Mutual became the largest depository institution (with assets of $307 billion) ever to fail in the United States. Like IndyMac, Washington Mutual suffered liquidity problems as its depositors were withdrawing funds because of rumors about its financial problems. The main reason for Washington Mutual's failure was its heavy investment in mortgages and mortgage-backed securities. The FDIC seized the assets of Washington Mutual and then sold most of them to JPMorgan Chase. As a result of this acquisition, JPMorgan Chase became the second largest commercial bank in the United States.

21-6c Reform in Response to the Credit Crisis



Following the credit crisis, the Financial Reform Act was implemented in 2010. This act contained numerous provisions that were intended to stabilize the financial system. Those provisions related to savings institutions are summarized here.

Mortgage Origination The Financial Reform Act requires that savings institutions and other financial institutions granting mortgages verify the income, job status, and credit history of mortgage applicants before approving mortgage applications. This provision is intended to strengthen the standards to obtain a mortgage in order to prevent another credit crisis in the future.

Sales of Mortgage-Backed Securities The act requires that savings institutions and other financial institutions that sell mortgage-backed securities retain 5 percent of the portfolio unless the portfolio meets specific standards that reflect low risk. This provision forces financial institutions to maintain a stake in the mortgage portfolios that they sell. The act also requires more disclosure regarding the quality of the underlying assets when mortgage-backed securities are sold.

Financial Stability Oversight Council The Financial Reform Act created the Financial Stability Oversight Council, which is responsible for identifying risks to financial stability in the United States and makes regulatory recommendations to regulators that could reduce systemic risk, whereby the financial problems of savings institutions or other financial institutions spread. The council can recommend methods to ensure that depository institutions do not rely on regulatory bailouts and can recommend rules such as higher capital requirements for savings institutions that are perceived to be too big and complex.

The council consists of ten members, including the Treasury Secretary (who chairs the council) and the heads of the Federal Reserve, Comptroller of the Currency, Federal Deposit Insurance Corporation, National Credit Union Administration (discussed later in the chapter), Securities and Exchange Commission, and Federal Housing Finance Agency.

Orderly Liquidation The act assigned specific regulators with the authority to determine whether any particular financial institution should be liquidated. This expedites the liquidation process and can limit the losses due to a failing financial institution. Shareholders and unsecured creditors are expected to bear most of the losses of failing financial institutions.

Consumer Financial Protection Bureau The act established the Consumer Financial Protection Bureau, which is responsible for regulating various consumer finance products and services that are offered by savings institutions and other financial institutions, such as online accounts and credit cards. The bureau can set rules to ensure that savings institutions disclose accurate information about their financial services and to prevent deceptive financial practices.

Trading of Derivative Securities The act requires that derivative securities be traded through a clearinghouse or exchange, rather than over the counter. This should allow for a more standardized structure regarding margins and collateral and more transparency of prices in the market. Consequently, savings institutions that trade these derivatives should be less susceptible to risk that the counterparty posted insufficient collateral.

21-7 Credit Unions

Credit unions (CUs) are nonprofit organizations composed of members with a common bond, such as an affiliation with a particular labor union, church, university, or even residential area. Their objective is to serve as an intermediary for those members. Credit unions offer interest on share deposits to members who invest funds. They channel those funds to members who need loans.

WEB

http://thecommunitybanker.com/cu_links/ Identifies credit unions in all states.

Because of their common bond requirement, CUs tend to be much smaller than other depository institutions. There are about 7,800 CUs in the United States. Although the number of CUs now exceeds the number of commercial banks, the total assets of CUs are less than one-tenth the amount of total assets in commercial banks.

21-7a Ownership of Credit Unions

Because CUs do not issue stock, they are technically owned by the depositors. The deposits are called shares, and interest paid on the deposits is called a dividend. Because CUs are nonprofit organizations, their income is not taxed. If CUs accumulate earnings, they can use the earnings either to offer higher rates on deposits or to reduce rates on loans.

WEB

www.corningcu.org Information about services related to financial planning that are provided by CUs.

Like savings institutions and commercial banks, CUs can be federally or state chartered. If the state does not offer a charter, a federal charter is necessary. Although a few CUs (such as the Navy Federal CU) have assets of more than $1 billion, most are very small. Federally chartered CUs are growing at a faster rate than state-chartered CUs, and their total assets are now significantly larger than the aggregate assets of state-chartered CUs.

21-7b Advantages and Disadvantages of Credit Unions

As mentioned earlier, CUs are nonprofit and therefore are not taxed. This creates a major advantage for CUs over other types of financial institutions. Credit unions can offer higher deposit rates and lower loan rates than their competitors and still achieve a satisfactory level of performance, because their profits are not taxed and they do not have to achieve a desired return for shareholders. In addition, their noninterest expenses are relatively low because their office and furniture are often donated or provided at a very low cost through the affiliation of their members.

Some characteristics of CUs can be unfavorable. Their employees may not have the incentive to manage operations efficiently. In addition, the common bond requirement for membership restricts a given CU from growing beyond the potential size of that particular affiliation. The common bond also limits the ability of CUs to diversify. This is especially true when all members are employees of a particular institution. If that institution lays off a number of workers, many members may simultaneously experience financial

problems and withdraw their share deposits or default on their loans. This could cause the CU to become illiquid at a time when more members need loans to survive the layoff.

Even when the common bond does not represent a particular employer, many CUs are unable to diversify geographically because all members live in the same area. Thus, an economic slowdown in this area would have an adverse impact on most members. Furthermore, CUs cannot diversify among various products the way that commercial banks and savings institutions do. They are created to serve the members and therefore concentrate heavily on providing loans to members. Finally, in the event that CUs do need funds, they are unable to issue stock because they are owned by depositors rather than shareholders.

WEB

www.ncua.gov
Provides financial data for any federally chartered CU.

To try to overcome some of these disadvantages as well as to better diversify their services and take greater advantage of economies of scale, CUs increasingly have been merging. Consequently, some CUs now draw their members from a number of employers, organizations, and other affiliations. CUs are also trying to diversify their products by offering traveler's checks, money orders, and life insurance to their members.

21-7c Deposit Insurance for Credit Unions

About 90 percent of CUs are insured by the National Credit Union Share Insurance Fund (NCUSIF), which is administered by the National Credit Union Administration (NCUA). The NCUSIF was created in 1970 without any contributing start-up capital from the U.S. Treasury and Federal Reserve. All federally chartered CUs are required to obtain insurance from the NCUSIF. State-chartered CUs are eligible for NCUSIF insurance only if they meet various guidelines. The maximum insurance per depositor is $250,000. Some states require their CUs to be federally insured; others allow insurance to be offered by alternative insurance agencies.

WEB

www.ncua.gov
Background on the NCUA.

The CUs typically pay an annual insurance premium of about one-tenth of 1 percent of share deposits. The NCUSIF sets aside a portion of its funds as reserves to cover expenses resulting from CU failures each year. Given the low number of failures, the reserves are normally adequate to cover these expenses.

However, the fund was depleted during the credit crisis because of some credit union failures. A supplemental premium was charged in 2009 and in 2010 to replenish the fund.

21-7d Regulatory Assessment of Credit Unions

Federal CUs are supervised and regulated by the National Credit Union Administration (NCUA), whereas state-chartered CUs are regulated by their respective states. The NCUA employs a staff of examiners to monitor CUs each year. The examiners conduct assessments of all federally chartered CUs as well as any state-chartered CUs applying for federal insurance. Each CU completes a semiannual financial report. From this information, the NCUA examiners derive financial ratios that measure the financial condition of the CU. The ratios are then compared to an industry norm to detect any significant deviations. Then a summary of the CU, called a Financial Performance Report, is completed to identify any potential problems that deserve special attention in the future.

As part of the assessment, the examiners classify each CU into a specific risk category, ranging from Code 1 (low risk) to Code 5 (high risk). This is intended to serve as an early warning system so that CUs that are experiencing problems or are in potential danger can be closely monitored in the future. The criteria used by the NCUA to assess risk are capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to market conditions, the same characteristics used by the FDIC to assess commercial banks and savings institutions.

21-7e Credit Union Sources of Funds

Credit union sources of funds can be classified as deposits, borrowed funds, and capital, as explained next.

Deposits Credit unions obtain most of their funds from share deposits by members. The typical deposit is similar to a passbook savings account deposit at commercial banks or savings institutions, as it has no specified maturity and is insured up to $250,000. Credit unions also offer share certificates, which provide higher rates than share deposits but require a minimum amount (such as $500) and a specified maturity. The share certificates offered by CUs compete against the retail CDs offered by commercial banks and SIs.

In addition to share deposits and certificates, most CUs also offer checkable accounts called share drafts. These accounts can pay interest and allow an unlimited amount of checks to be written. They normally require a minimum balance to be maintained. Share drafts offered by CUs compete against the NOW accounts and MMDAs offered by commercial banks and SIs.

Borrowed Funds If a CU needs funds temporarily, it can borrow from other CUs or from the Central Liquidity Facility (CLF). The CLF acts as a lender for CUs to accommodate seasonal funding and specialized needs or to boost the liquidity of troubled CUs.

Capital Like other depository institutions, CUs maintain capital. Their primary source of capital is retained earnings. In recent years, CUs have boosted their capital, which helps cushion against any future loan losses. Given that CUs tend to use conservative management, their capital ratio is relatively high compared with other depository institutions.

21-7f Credit Union Uses of Funds

Credit unions use the majority of their funds for loans to members. These loans finance automobiles, home improvements, and other personal expenses. They are typically secured and carry maturities of five years or less. Some CUs offer long-term mortgage loans, but many prefer to avoid loans with long maturities. In addition to providing loans, CUs purchase government and agency securities to maintain adequate liquidity. The degree to which CUs can offer various products and services is influenced by the type of charter and by their location.

21-7g Exposure of Credit Unions to Risk

Like other depository institutions, CUs are exposed to liquidity risk, credit risk, and interest rate risk. Their balance sheet structure differs from that of other institutions, however, so their exposure to each type of risk also differs.

Liquidity Risk of Credit Unions If a CU experiences an unanticipated wave of withdrawals without an offsetting amount of new deposits, it could become illiquid. It can borrow from the Central Liquidity Facility to resolve temporary liquidity problems, but if the shortage of funds is expected to continue, the CU must search for a more permanent cure. Other depository institutions have greater ability to boost deposit levels because they can tap various markets. Because the market for a CU is restricted to those consumers who qualify as members, CUs have less ability to generate additional deposits quickly.

Credit Risk of Credit Unions Because CUs concentrate on personal loans to their members, their exposure to credit (default) risk is primarily derived from those

loans. Most of their loans are secured, which reduces the loss to CUs in the event of default. Poor economic conditions can have a significant impact on loan defaults. Some CUs will perform much better than others because of more favorable economic conditions in their area. However, even during favorable economic periods, CUs with very lenient loan policies could experience losses. A common concern is that CUs may not conduct a thorough credit analysis of loan applicants; the loans provided by CUs are consumer oriented, however, so an elaborate credit analysis generally is not required.

Although CUs are normally viewed as the most conservative of all depository institutions, they also were exposed to adverse effects of the credit crisis that began in 2008. Some CUs suffered large losses due to late payments or defaults on second mortgages and home equity loans that they provided. They also experienced some losses on mortgage-backed securities in which they had invested. Credit unions are restricted from investing in risky securities, but some of the mortgage-backed securities that they purchased were highly rated at the time of purchase. As housing conditions worsened, the demand for securities backed by mortgages declined and the values of mortgage-backed securities declined as well.

Interest Rate Risk of Credit Unions Loans by CUs to their members typically have short or intermediate maturities, so their asset portfolios are rate sensitive. Because their sources of funds are also generally rate sensitive, movements in interest revenues and interest expenses of CUs are highly correlated. The spread between interest revenues and interest expenses remains somewhat stable over time, regardless of how interest rates change. Thus, CUs tend to have less exposure to interest rate risk than savings institutions.

SUMMARY

- The main sources of funds for SIs are deposits and borrowed funds. The main uses of funds for SIs are mortgages, mortgage-backed securities, and other securities.
- Savings institutions are exposed to credit risk as a result of their heavy concentration in mortgages, mortgage-backed securities, and other securities. They attempt to diversify their investments to reduce credit risk. Savings institutions are highly susceptible to interest rate risk because their asset portfolios are typically less rate sensitive than their liability portfolios to interest rate movements.
- Savings institutions can reduce their interest rate risk by using adjustable-rate mortgages instead of fixed-rate mortgages so that the rate sensitivity of their assets is more similar to that of their liabilities. Alternatively, they can sell interest rate futures contracts, which would generate gains if interest rates increase. Third, they can engage in interest rate swaps in which they swap fixed rates for floating rates, which would generate gains if interest rates rise.
- The valuation of an SI is a function of its expected cash flows and the required return by its investors. The expected cash flows are influenced by economic growth, interest rate movements, regulatory constraints, and the abilities of the institution's managers. The required rate of return is influenced by the prevailing risk-free rate and the risk premium. The risk premium is lower when economic conditions are strong.
- In the late 1980s, many SIs made very risky loans and investments and experienced heavy losses from loan defaults, adverse interest rate movements, and fraud. In the 2004–2006 period, many SIs pursued aggressive mortgage lending strategies, which led to major problems during the credit crisis of 2008–2009.
- Credit unions obtain most of their funds from share deposits by members. They use the majority of their funds for personal loans to members and therefore are exposed to credit risk.

Point Counter-Point

Can All Savings Institutions Avoid Failure?

Point Yes. If SIs use conservative management by focusing on adjustable-rate mortgages with limited default risk, they can limit their risk and avoid failure.

Counter-Point No. Some SIs will be crowded out of the market for high-quality adjustable-rate mortgages and will have to take some risk. There are too many SIs, and some that have weaker management will inevitably fail.

Who Is Correct? Use the Internet to learn more about this issue and then formulate your own opinion.

Questions and Applications

1. SI Sources and Uses of Funds Explain in general terms how savings institutions differ from commercial banks with respect to their sources of funds and uses of funds. Discuss each source of funds for SIs. Identify and discuss the main uses of funds for SIs.

2. Ownership of SIs What are the alternative forms of ownership of a savings institution?

3. Regulation of SIs What criteria are used by regulators to examine a thrift institution?

4. MMDAs How did the creation of money market deposit accounts influence the overall cost of funds for a savings institution?

5. Offering More Diversified Services Discuss the entrance of savings institutions into consumer and commercial lending. What are the potential risks and rewards of this strategy? Discuss the conflict between diversification and specialization of SIs.

6. Liquidity and Credit Risk Describe the liquidity and credit risk of savings institutions, and discuss how each is managed.

7. ARMs What is an adjustable-rate mortgage (ARM)? Discuss potential advantages such mortgages offer a savings institution.

8. Use of Financial Futures Explain how savings institutions could use interest rate futures to reduce interest rate risk.

9. Use of Interest Rate Swaps Explain how savings institutions could use interest rate swaps to reduce interest rate risk. Will SIs that use swaps perform better or worse than those that were unhedged during a period of declining interest rates? Explain.

10. Risk Explain why many savings institutions experience financial problems at the same time.

11. Hedging Interest Rate Movements If market interest rates are expected to decline over time, will a savings institution with rate-sensitive liabilities and a large amount of fixed-rate mortgages perform best by (a) using an interest rate swap, (b) selling financial futures, or (c) remaining unhedged? Explain.

12. Exposure to Interest Rate Risk The following table discloses the interest rate sensitivity of two savings institutions (dollar amounts are in millions). Based on this information only, which institution's stock price would likely be affected more by a given change in interest rates? Justify your opinion.

	INTEREST SENSITIVITY PERIOD			
	WITHIN 1 YEAR	FROM 1 TO 5 YEARS	FROM 5 TO 10 YEARS	OVER 10 YEARS
Lawrence S&L				
Interest-earning assets	$8,000	$3,000	$7,000	$3,000
Interest-bearing liabilities	11,000	6,000	2,000	1,000
Manhattan S&L				
Interest-earning assets	1,000	1,000	4,000	3,000
Interest-bearing liabilities	2,000	2,000	1,000	1,000

13. SI Crisis What were some of the more obvious reasons for the savings institution crisis of the late 1980s?

14. FIRREA Explain how the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) reduced the perceived risk of savings institutions.

15. Background on CUs Who are the owners of credit unions? Explain the tax status of CUs and the reason for that status. Why are CUs typically smaller than commercial banks or savings institutions?

16. Sources of CU Funds Describe the main source of funds for credit unions. Why might the average cost of funds to CUs be relatively stable even when market interest rates are volatile?

17. Regulation of CUs Who regulates credit unions? What are the regulators' powers? Where do CUs obtain deposit insurance?

18. Risk of CUs Explain how credit union exposure to liquidity risk differs from that of other financial institutions. Explain why CUs are more insulated from interest rate risk than some other financial institutions.

19. Advantages and Disadvantages of CUs Identify some advantages of credit unions. Identify disadvantages of CUs that relate to their common bond requirement.

20. Impact of the Credit Crisis Explain how the credit crisis in the 2008–2009 period affected some savings institutions. Compare the causes of the credit crisis to the causes of the SI crisis in the late 1980s.

21. Impact of Interest Rates on an SI Explain why savings institutions may benefit when interest rates fall.

22. Impact of Economic Growth on an SI How does high economic growth affect an SI?

Interpreting Financial News

Interpret the following comments made by Wall Street analysts and portfolio managers.

a. "Deposit insurance can fuel a crisis because it allows weak SIs to grow."

b. "Thrifts are no longer so sensitive to interest rate movements, even if their asset and liability compositions have not changed."

c. "Many SIs did not understand that higher returns from subprime mortgages must be weighed against risk."

Managing in Financial Markets

Hedging Interest Rate Risk As a consultant to Boca Savings & Loan Association, you notice that a large portion of its 15-year, fixed-rate mortgages are financed with funds from short-term deposits. You believe the yield curve is useful in indicating the market's anticipation of future interest rates and that the yield curve is primarily determined by interest rate expectations. At the present time, Boca has not hedged its interest rate risk. Assume that a steeply upward-sloping yield curve currently exists.

a. Boca asks you to assess its exposure to interest rate risk. Describe how Boca will be affected by rising interest rates and by a decline in interest rates.

b. Given the information about the yield curve, would you advise Boca to hedge its exposure to interest rate risk? Explain.

c. Explain why your advice to Boca may possibly backfire.

Flow of Funds Exercise

Market Participation by Savings Institutions

Rimsa Savings is a savings institution that provided Carson Company with a mortgage for its office building. Rimsa recently offered to refinance the mortgage if Carson Company will change to a fixed-rate loan from an adjustable-rate loan.

a. Explain the interaction between Carson Company and Rimsa Savings.

b. Why is Rimsa willing to allow Carson Company to transfer its interest rate risk to Rimsa? (Assume that there is an upward-sloping yield curve.)

c. If Rimsa maintains the mortgage on the office building purchased by Carson Company, who is the ultimate source of the money that was provided for the office building? If Rimsa sells the mortgage in the secondary market to a pension fund, who is the source that is essentially financing the office building? Why would a pension fund be willing to purchase this mortgage in the secondary market?

INTERNET/EXCEL EXERCISES

1. Assess the recent performance of savings institutions using the website www2.fdic.gov/qbp/index.asp. Click on "Quarterly Banking Profile," then on "Savings Institution Section," and summarize the general performance of SIs in the last two years.

2. Retrieve the annual report of Heritage Financial Corporation (ticker symbol is HFWA) or another savings institution of your choice. To access income statement information, go to finance.yahoo.com, enter the ticker symbol, and click on "Get Quotes." Then click on "SEC Filings" (under "Company") to retrieve recent income statements. Review the SI's recent performance. Has its income as a percentage of assets increased since the year before? Explain what caused this change over the last year. Has the SI's net interest margin changed since last year? How has its noninterest income (as a percentage of assets) changed over the last year? How have its noninterest expenses changed over the last year? How have its loan loss reserves changed in the last year? Discuss how the SI's recent strategy and economic conditions may explain the changes in these components of its income statement.

3. Go to finance.yahoo.com, enter the symbol HFWA (Heritage Financial Corporation), and click on "Get Quotes." Then retrieve stock price data at the beginning of the last 20 quarters. Then go to http://research.stlouisfed.org/fred2 and retrieve interest rate data at the beginning of the last 20 quarters for the three-month Treasury bill. Record the data on an Excel spreadsheet. Derive the quarterly return of Heritage Financial. Derive the quarterly change in the interest rate. Apply regression analysis in which the quarterly return of Heritage Financial is the dependent variable and the quarterly change in the interest rate is the independent variable (see Appendix B for more information about using regression analysis). Is there a positive or negative relationship between the interest rate movement and the stock return of Heritage Financial? Is the relationship significant? Offer an explanation for this relationship.

WSJ EXERCISE

Assessing the Performance of Savings Institutions

Using a recent issue of the *Wall Street Journal*, summarize an article that discusses the recent performance of a particular savings institution. Does the article suggest that the SI's performance was better or worse than the norm? What reason is given for the unusual level of performance?

ONLINE ARTICLES WITH REAL-WORLD EXAMPLES

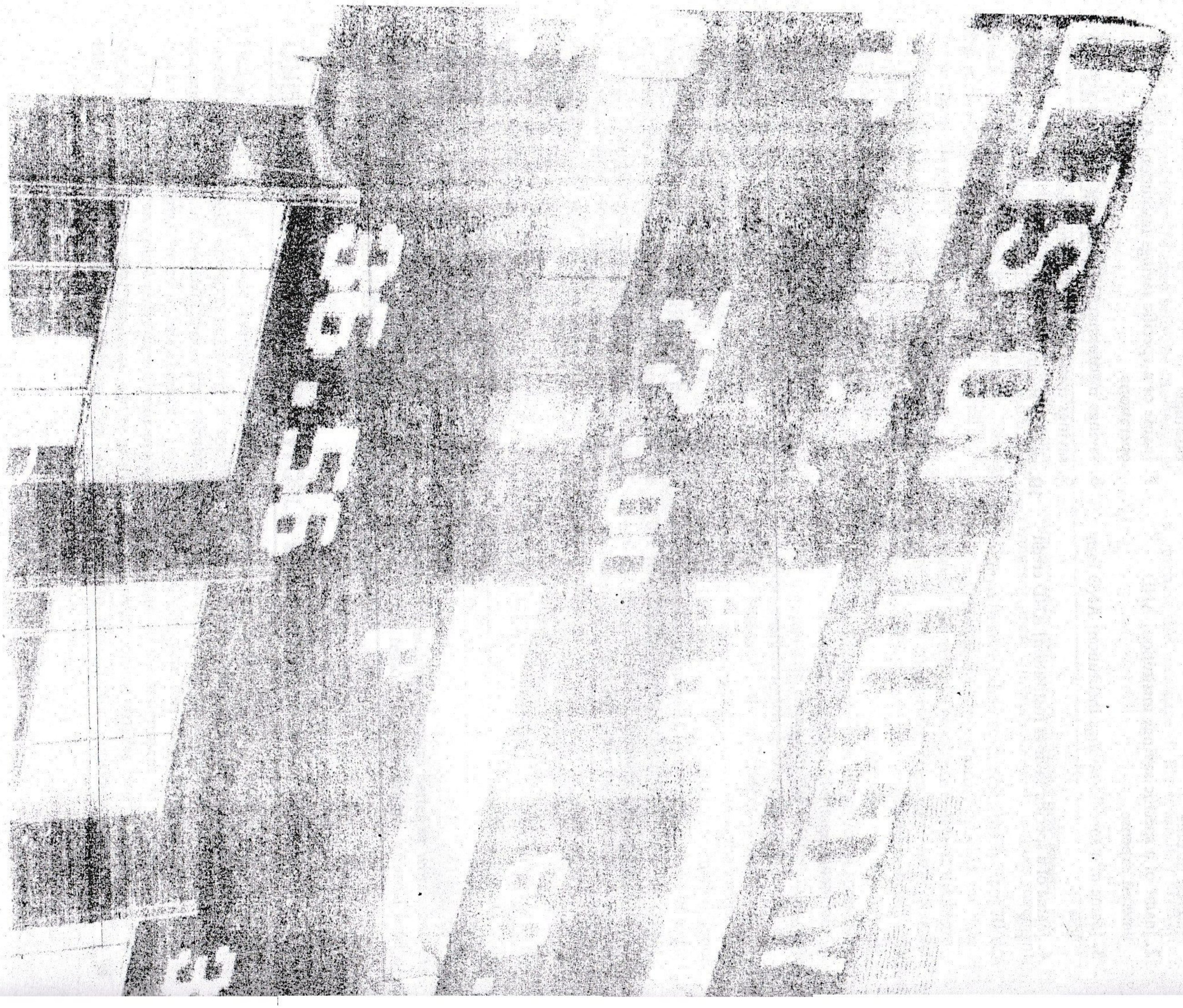
Find a recent practical article available online that describes a real-world example regarding a specific financial institution or financial market that reinforces one or more concepts covered in this chapter.

If your class has an online component, your professor may ask you to post your summary of the article there and provide a link to the article so that other students can access it. If your class is live, your professor may ask you to summarize your application of the article in class. Your professor may assign specific students to complete this assignment or may allow any students to do the assignment on a volunteer basis.

For recent online articles and real-world examples related to this chapter, consider using the following

search terms (be sure to include the prevailing year as a search term to ensure that the online articles are recent):

1. [name of a specific savings institution] AND interest income
2. [name of a specific savings institution] AND interest expense
3. [name of a specific savings institution] AND loan loss
4. [name of a specific savings institution] AND credit risk
5. [name of a specific savings institution] AND interest rate risk
6. [name of a specific savings institution] AND earnings
7. [name of a specific savings institution] AND operations
8. savings institution AND income
9. savings institution AND return on assets
10. savings institution AND risk



22 Finance Company Operations

CHAPTER OBJECTIVES

The specific objectives of this chapter are to:

- describe the main types of finance companies,
- identify the main sources and uses of finance company funds,
- describe how finance companies are exposed to various forms of risk,
- identify the factors that determine the values of finance companies, and
- explain how finance companies interact with other financial institutions.

Finance companies provide short- and intermediate-term credit to consumers and small businesses. Although other financial institutions provide this service, only finance companies specialize in it. Many finance companies operate with a single office; others have hundreds of offices across the country and even in foreign countries. Consumer finance operations can be conducted by an independent finance company or a unit (subsidiary) of a financial conglomerate.

22-1 Types of Finance Companies

Finance companies have more than $1 trillion in assets. In aggregate, the amount of their business is similar to that of savings institutions. Some finance companies are independently owned; others are subsidiaries of financial institutions or other corporations. For example, some very large finance companies are subsidiaries of General Motors, Ford Motor Company, Citigroup, American Express, Capital One, and General Electric.

Finance companies are commonly classified into the different types described below according to the specific services that they offer. Some finance companies could fit in every category because they offer all types of services.

22-1a Consumer Finance Companies

Consumer finance companies provide financing for customers of retail stores or wholesalers. For example, a consumer finance company can sponsor a credit card for a retailer so that the retailer can offer its own credit card for its customers. The customers can purchase products there on credit, which is provided by the finance company.

Many consumer finance companies also provide personal loans directly to individuals to finance purchases of large household items. Some consumer finance companies also provide mortgage loans.

22-1b Business Finance Companies

Business finance companies offer loans to small businesses. For example they may provide loans to finance inventory. The business uses the loan to purchase materials that are used in the production process. Once the products are manufactured and sold, the business uses the revenue to pay off the loan. Business finance companies also provide financing in the form of credit cards that are used by a business's employees for travel or for making purchases on behalf of the business.

22-1c Captive Finance Subsidiaries

A captive finance subsidiary (CFS) is a wholly owned subsidiary whose primary purpose is to finance sales of the parent company's products and services, provide wholesale financing to distributors of the parent company's products, and purchase receivables of the parent company. The actual business practices of a CFS typically include various types of financing apart from just the parent company business. When a captive is formed, the captive and the parent company draw up an operating agreement containing specific stipulations, such as the type of receivables that qualify for sale to the captive and specific services to be provided by the parent.

The motive for creating a CFS can be easily understood by considering the automobile industry. Historically, automobile manufacturers were unable to finance dealers' inventories and had to demand cash from each dealer. Many dealers were unable to sell cars on an installment basis because they needed cash immediately. Banks were the primary source of capital to dealers. However, banks viewed automobiles as luxury items not suitable for bank financing and were unwilling to buy the installment plans created from automobile sales. For this reason, the automobile manufacturers became involved in financing.

Advantages of Captive Finance Subsidiaries There are several advantages to maintaining a CFS. A CFS can be used to finance distributor or dealer inventories until a sale occurs, making production less cyclical for the manufacturer. It can serve as an effective marketing tool by providing retail financing. It can also be used to finance products leased to others.

A CFS allows a corporation to clearly separate its manufacturing and retailing activities from its financing activities. Therefore, analysis of each segment of the parent company is less expensive and easier. Also, when lending to a CFS rather than a division of the parent company, the lender does not have to be so concerned about the claims of others. Unlike commercial banks, a CFS has no reserve requirements and no legal prohibitions on how it obtains or uses funds. Furthermore, a firm with a CFS can gain a competitive advantage because sale items such as automobiles and housing may depend on the financing arrangements available.

Captive finance subsidiaries have diversified their financing activities to include more than just the parent company's product installment plans. General Electric Capital Corporation (GECC) has been the most innovative of all the CFSs. Its financing includes industrial and equipment sales, consumer installment credit, and second mortgage loans on private residences.

22-2 Sources and Uses of Funds

Finance companies are distinctly different from commercial banks and savings institutions in that they do not rely heavily on deposits. Their sources and uses of funds are described next.

22-2a Sources of Funds

The main sources of funds for finance companies are:

- Loans from banks
- Commercial paper
- Deposits
- Bonds
- Capital

Loans from Banks Finance companies commonly borrow from commercial banks and can consistently renew the loans over time. For this reason, bank loans can provide a continual source of funds, although some finance companies use bank loans mainly to accommodate seasonal swings in their business.

Commercial Paper Although commercial paper is available only for short-term financing, finance companies can continually roll over their issues to create a permanent source of funds. Only the most well-known finance companies have traditionally been able to issue commercial paper to attract funds, because unsecured commercial paper exposes investors to the risk of default. In the past, small or medium-sized finance companies had difficulty placing unsecured commercial paper. In recent years, as secured commercial paper has become popular, more finance companies have access to funds through this market.

The best-known finance companies can issue commercial paper through direct placement, thereby avoiding a transaction fee and lowering their cost of funds. Most companies, however, utilize the services of a commercial paper dealer.

Deposits Under certain conditions, some states allow finance companies to attract funds by offering customer deposits similar to those of the depository institutions discussed in previous chapters. Although deposits have not been a major source of funds for finance companies, they may become more widely used where legal.

Bonds Finance companies in need of long-term funds can issue bonds. The decision to issue bonds versus some alternative short-term financing depends on the company's balance sheet structure and its expectations about future interest rates. When the company's assets are less interest rate sensitive than its liabilities and when interest rates are expected to increase, bonds can provide long-term financing at a rate that is completely insulated from rising market rates. If the finance company is confident that interest rates will rise, it might consider using the funds obtained from bonds to offer loans with variable interest rates. When interest rates decline, finance companies may use more long-term debt to lock in the cost of funds over an extended period of time.

Capital Finance companies can build their capital base by retaining earnings or by issuing stock. Like other financial institutions, finance companies maintain a low level of capital as a percentage of total assets. Several finance companies have engaged in initial public offerings of stock so that they could expand their businesses.

22-2b Uses of Finance Company Funds

Finance companies use funds for:

- Consumer loans
- Business loans and leasing
- Real estate loans

www.nfcc.org
More detailed information about consumer loans.

Each use of funds is described in turn.

Consumer Loans Finance companies extend consumer loans in the form of personal loans. One of the most popular types is the automobile loan offered by a finance company that is owned by a car manufacturer. For example, General Motors Acceptance Corporation (GMAC) finances purchases of automobiles built by General Motors. Ford Motor Company and Chrysler also have their own finance companies. Subsidiaries of automobile manufacturers may offer unusually low rates to increase automobile sales.

In addition to offering automobile loans, finance companies offer personal loans for home improvement, mobile homes, and a variety of other personal expenses. Personal loans are often secured by a co-signer or by real property. The maturities on personal loans are typically less than five years.

Finance company loans are subject to ceiling interest rates on the loans provided and to a maximum length on the loan maturity. These regulations are imposed by states, and they vary among the states. Because ceiling rates are now sufficiently above market rates, they normally do not interfere with the rate-setting decisions of finance companies. Finance companies are also subject to state regulations on intrastate business. If a finance company wishes to set up a new branch, it must convince regulators that the branch would serve the needs of the people in that location.

Some finance companies also offer credit card loans through a particular retailer. For example, a retail store may sell products to customers on credit and then sell the credit contract to a finance company. Customers make payments to the finance company under the terms negotiated with the retail store. The finance company is responsible for the initial credit approval and for processing the credit card payments. The retailer can benefit from the finance company's credit allowance through increased sales; the finance company benefits by obtaining increased business. Finance companies increase their customer base in this way and are accessible for additional financing for those customers who prove to be creditworthy. The specific arrangement between a finance company and retailer can vary.

The main competition to finance companies in the consumer loan market comes from commercial banks and credit unions. Finance companies have consistently provided more credit to consumers than credit unions have, but they are a distant second to commercial banks. Savings institutions have recently entered this market and are now also considered a major competitor.

Business Loans and Leasing In addition to consumer loans, finance companies also provide business (commercial) loans. Companies commonly obtain these loans from the time they purchase raw materials until cash is generated from sales of the finished goods. Such loans are short term but may be renewed, as many companies permanently need financing to support their cash cycle. Business loans are often backed by inventory or accounts receivable.

Some finance companies provide loans to support leveraged buyouts (LBOs). These loans are generally riskier than other business loans but offer a higher expected return.

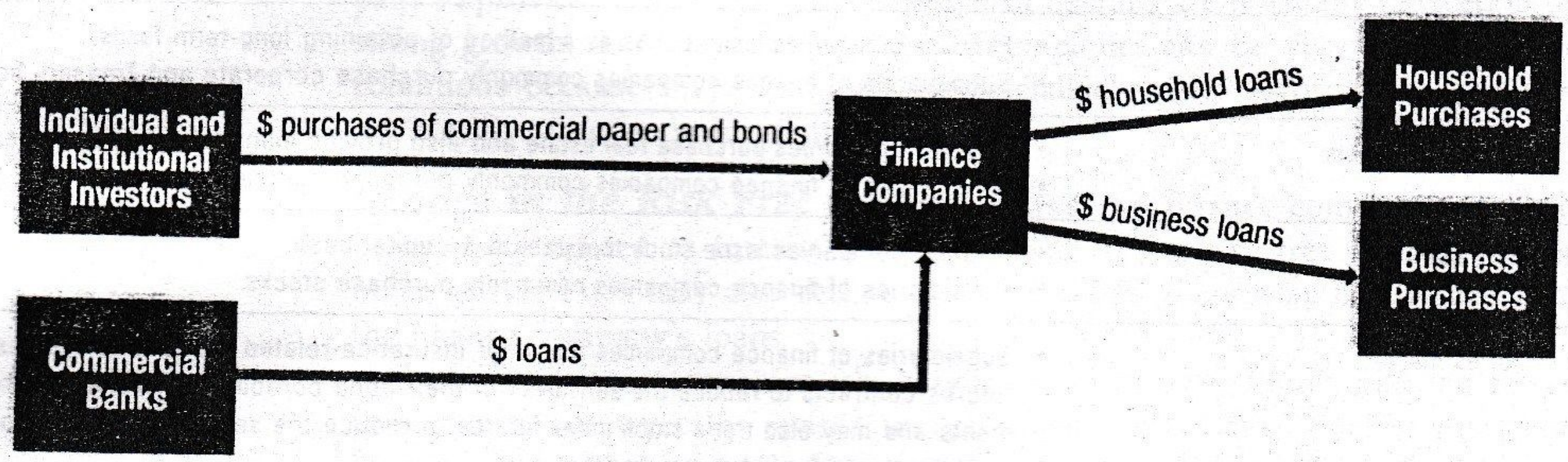
Finance companies commonly act as factors for accounts receivable; that is, they purchase a firm's receivables at a discount and are responsible for processing and collecting the balances of these accounts. The finance company incurs any losses due to bad debt. Factoring reduces a business's processing costs and also provides short-term financing, as the business receives cash from the finance company earlier than it would have obtained funds from collecting the receivables.

Another way finance companies provide financing is by leasing. They purchase machinery or equipment and then lease it to businesses that prefer to avoid the additional debt on their balance sheet that purchases would require. Avoiding debt can be important to a business that is already close to its debt capacity and is concerned that additional debt will adversely affect its credit rating.

As the economy remained weak over the 2009–2013 period, business demand for loans declined. Thus finance companies reduced their business loans over this period.

Real Estate Loans Finance companies offer real estate loans in the form of mortgages on commercial real estate and second mortgages on residential real estate. The offering of second mortgages has become increasingly popular over time. These mortgages are typically secured and historically have had a relatively low default rate. In the

Exhibit 22.1 How Finance Companies Finance Economic Growth



2003–2006 period, however, some finance companies offered subprime (low quality) mortgage loans, which resulted in a higher proportion of loan defaults during the credit crisis in 2008. Consequently, many finance companies substantially reduced their real estate loans over the 2009–2013 period.

Summary of Uses of Funds The particular allocation of a finance company's uses of funds depends on whether the company is focused on business or consumer lending. Some finance companies, such as GE Capital, provide all types of services. Exhibit 22.1 summarizes the sources and uses of funds by illustrating how finance companies finance economic growth. They channel funds from institutional investors who purchase the securities they issue to households and small businesses that need funds.

In 2010, the Financial Reform Act established the Consumer Financial Protection Bureau, which is responsible for regulating various consumer finance products and services that may be offered by finance companies and other financial institutions. Perhaps the most important requirement on finance companies is that they ensure proper disclosure of information about their financial services.

22-2c Interaction with Other Financial Institutions

When finance companies obtain or use funds, they interact with other financial institutions, as summarized in Exhibit 22.2. Because of their concentration in consumer lending, finance companies compete with commercial banks, savings institutions, and credit

Exhibit 22.2 Interaction between Finance Companies and Other Financial Institutions

TYPE OF FINANCIAL INSTITUTION	INTERACTION WITH FINANCE COMPANIES
Commercial banks and savings institutions	• Compete with finance companies for consumer loan business (including credit cards), commercial loans, and leasing.
Credit unions	• Compete with finance companies for consumer loan business.
Securities firms	• Underwrite bonds that are issued by finance companies.
Pension funds	• Compete with insurance subsidiaries of finance companies that manage pension plans.
Insurance companies	• Compete directly with insurance subsidiaries of finance companies.

Exhibit 22.3 Participation of Finance Companies in Financial Markets

TYPE OF FINANCIAL MARKET	PARTICIPATION BY FINANCE COMPANIES
Money markets	• Finance companies obtain funds by issuing commercial paper.
Bond markets	• Finance companies issue bonds as a method of obtaining long-term funds. • Subsidiaries of finance companies commonly purchase corporate and Treasury bonds.
Mortgage markets	• Finance companies purchase real estate and also provide loans to real estate investors. • Subsidiaries of finance companies commonly purchase mortgages.
Stock markets	• Finance companies issue stock to establish a capital base. • Subsidiaries of finance companies commonly purchase stocks.
Futures markets	• Subsidiaries of finance companies that offer insurance-related services sometimes use futures contracts to reduce the sensitivity of their bond portfolio to interest rate movements and may also trade stock index futures to reduce the sensitivity of their stock portfolio to stock market movements.
Options markets	• Subsidiaries of finance companies that offer insurance-related services sometimes use options contracts to protect against temporary declines in particular stock holdings.
Swap markets	• Finance companies may engage in interest rate swaps to hedge their exposure to interest rate risk.

unions. However, those finance companies with subsidiaries that specialize in other financial services compete with insurance companies and pension plans.

Finance companies utilize various financial markets to manage their operations, as summarized in Exhibit 22.3. For their core business, finance companies commonly rely on money markets (commercial paper) and bond markets to obtain funds. Furthermore, the insurance subsidiaries of finance companies often utilize bond and stock markets to invest funds. These subsidiaries may also use futures, options, and swap markets to hedge their risk.

22-3 Valuation of a Finance Company

Finance companies (or consumer finance units that are part of a financial conglomerate) are commonly valued by their managers to monitor progress over time or by other financial institutions that are considering an acquisition. The value of a finance company can be modeled as the present value of its future cash flows. Thus, the value of a finance company should change in response to changes in its expected cash flows in the future and to changes in the required rate of return by investors:

$$\Delta V = f[\underbrace{\Delta E(CF)}_{+}, \underbrace{\Delta k}_{-}]$$

22-3a Factors That Affect Cash Flows

The change in a finance company's expected cash flows may be modeled as

$$\Delta E(CF) = f(\underbrace{\Delta \text{ECON}}_{-}, \underbrace{\Delta R_f}_{-}, \underbrace{\Delta \text{INDUS}}_{?}, \underbrace{\Delta \text{MANAB}}_{+})$$

where ECON represents economic growth, R_f represents the risk-free interest rate, INDUS represents industry conditions (such as regulatory constraints), and MANAB represents the abilities of the finance company's management.

Economic Growth Economic growth can enhance a finance company's cash flows by increasing household demand for consumer loans, thereby allowing the finance company to provide more loans. In addition, loan defaults are normally reduced in periods of strong growth. The valuation of finance companies can be very sensitive to economic conditions because they commonly offer relatively risky loans; thus, loan repayments are sensitive to economic conditions.

Change in the Risk-Free Interest Rates A finance company's cash flows may be inversely related to interest rate movements. If the risk-free interest rate decreases, other market rates may also decline and, as a result, there may be stronger demand for the finance company's loans.

Second, finance companies rely heavily on short-term funds, and the rates paid on these funds are typically revised in accordance with other interest rate movements. Finance companies' assets (such as consumer loans) commonly have fixed rates, so interest income does not adjust to interest rate movements until those assets reach maturity. Therefore, when interest rates fall, the finance company's cost of obtaining funds declines more than the decline in the interest earned on its loans and investments. An increase in interest rates could reduce the finance company's expected cash flows because the interest paid on its sources of funds increases while the interest earned on its existing loans and investments does not.

Change in Industry Conditions Industry conditions include regulatory constraints, technology, and competition within the industry. Some finance companies may be valued higher if state regulators give them the opportunity to generate economies of scale by expanding throughout the state. However, this would result in more competition, causing some finance companies to gain at the expense of others.

Change in Management Abilities A finance company has control over the composition of its managers and its organizational structure. Its managers attempt to make internal decisions that will capitalize on the external forces (economic growth, interest rates, regulatory constraints) that the institution cannot control. Thus, the management skills of a finance company can influence its expected cash flows. In particular, finance companies need skilled managers to analyze the creditworthiness of potential borrowers and assess how future economic conditions may affect their ability to repay their loans. Finance company managers may also capitalize on technology by advertising to consumers and accepting loan applications over the Internet.

22-3b Factors That Affect the Required Rate of Return

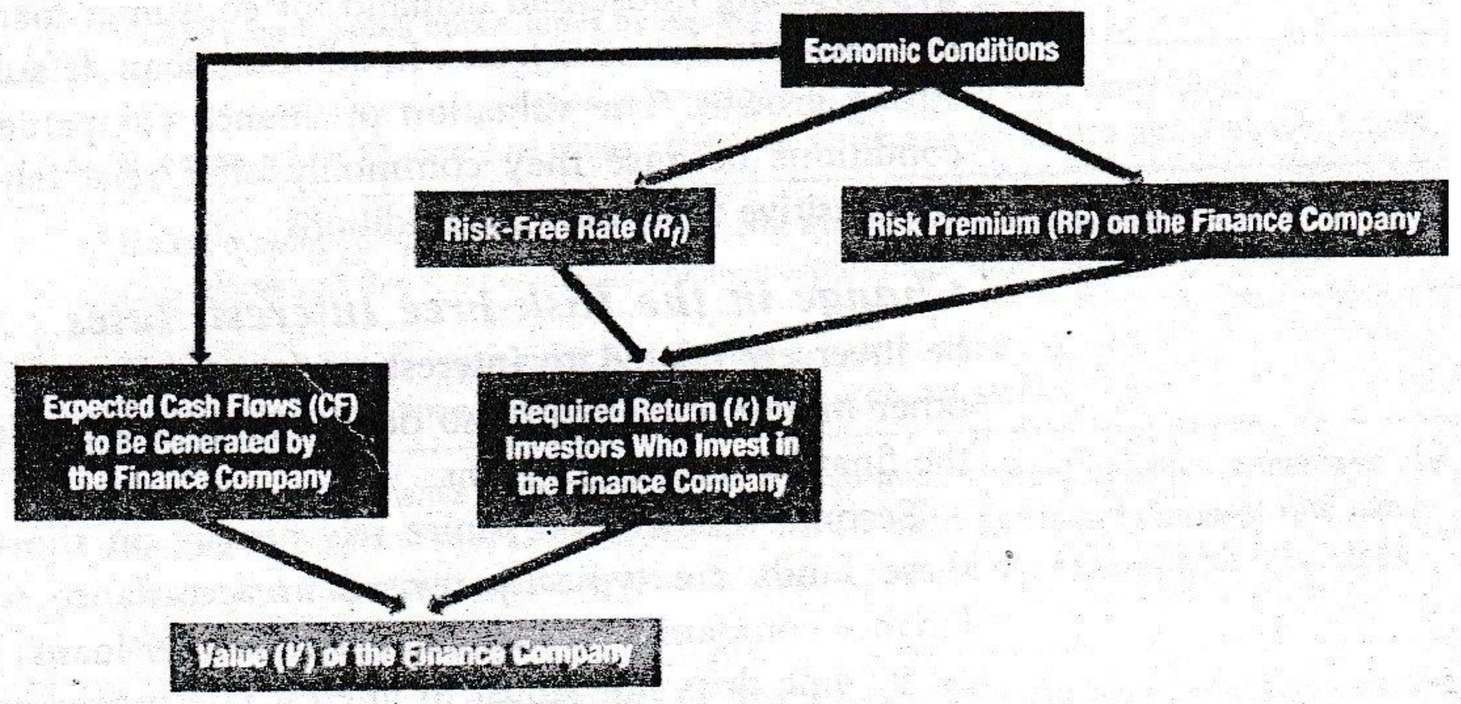
The required rate of return by investors who invest in a finance company can be modeled as

$$\Delta k = f(\underbrace{\Delta R_f}_{+}, \underbrace{\Delta RP}_{+})$$

where R_f represents the risk-free interest rate and RP represents the risk premium.

The risk-free interest rate is normally expected to be positively related to inflation, economic growth, and the budget deficit level but inversely related to money supply growth (assuming it does not cause inflation). The risk premium on a finance company is inversely related to economic growth because there is less uncertainty about loan repayments when economic conditions are strong. The risk premium is also inversely

Exhibit 22.4 Framework for Valuing a Finance Company



- A stronger economy leads to an increased demand for loans (interest income) and other services provided by the finance company (noninterest income), fewer loan defaults, and better cash flows. The economic conditions are especially important for finance companies because the risk of default on loans tends to be higher for them. A weak economy could result in major loan losses.
- The valuation is also influenced by industry conditions and the finance company's management (not shown in the diagram). These factors affect the risk premium (and therefore the required return by investors) and the expected cash flows to be generated by the finance company.

related to the company's management skills, as more skillful managers may be able to focus on financial services that reduce the finance company's exposure to risk.

Exhibit 22.4 provides a framework for valuing a finance company based on the preceding discussion. In general, the value of a finance company is favorably affected by strong economic growth, a reduction in interest rates, and skilled management. The sensitivity of a finance company's value to these conditions depends on its own characteristics. The higher the risk tolerance reflected in the loans provided by a finance company, the more sensitive its valuation to changes in economic growth (and therefore in the ability of borrowers to repay their loans).

22-4 Exposure of Finance Companies to Risk

Finance companies, like other financial institutions, are exposed to three types of risk:

- Liquidity risk
- Interest rate risk
- Credit risk

Because finance companies' characteristics differ from those of other financial institutions, their degree of exposure to each type of risk differs as well.

22-4a Liquidity Risk

Finance companies generally do not hold assets that could be easily sold in the secondary market. Thus, if they are in need of funds, they have to borrow. However, their balance

sheet structure does not call for much liquidity. Virtually all of their funds are from borrowings rather than deposits. Consequently, they are not susceptible to unexpected deposit withdrawals. Overall, the liquidity risk of finance companies is less than that of other financial institutions.

22-4b Interest Rate Risk

Both liability and asset maturities of finance companies are short or intermediate term. Therefore, they are not as susceptible to increasing interest rates as are savings institutions. Finance companies can still be adversely affected, however, because their assets are typically not as rate sensitive as their liabilities. They can shorten their average asset life or make greater use of adjustable rates if they wish to reduce their interest rate risk.

22-4c Credit Risk

Because the majority of a finance company's funds are allocated as loans to consumers and businesses, credit risk is a major concern. Customers who borrow from finance companies usually exhibit a moderate degree of risk. The loan delinquency rate of finance companies is typically higher than that of other lending financial institutions. However, this higher default level may be more than offset by the higher average rate charged on loans. Because their loans entail both relatively high returns and high risk, the performance of finance companies can be quite sensitive to prevailing economic conditions.

22-5 Multinational Finance Companies

GLOBAL ASPECTS

Some finance companies are large multinational corporations with subsidiaries in several countries. For example, GE Money provides consumer finance services in 55 countries and serves more than 130 million customers around the world. It provides products and services in local currencies where it does business.

Summary

- Finance companies are classified by type. A consumer finance company provides financing for customers of retail stores or wholesalers, whereas a business finance company offers loans to small businesses. A captive finance subsidiary (CFS) is a wholly owned subsidiary whose primary purpose is to finance sales of the parent company's products and services, provide wholesale financing to distributors of the parent company's products, and purchase receivables of the parent company.
- The main sources of finance company funds are loans from banks, sales of commercial paper, bonds, and capital. The main uses of finance company funds are consumer loans, business loans, leasing, and real estate loans.
- Finance companies are exposed to credit risk as a result of their consumer loans, business loans, and real estate loans. They are also exposed to liquidity risk because their assets are not very marketable in the secondary market. They may also be exposed to interest rate risk.
- Finance companies are valued at the present value of their expected cash flows. Their valuation is highly dependent on economic conditions because there are more requests for loans by qualified borrowers when economic conditions are favorable. In addition, the amount of loan defaults is normally lower when the economy is strong.
- Finance companies compete with depository institutions (such as commercial banks, savings institutions, and credit unions) that provide loans to consumers and businesses. Many finance companies have insurance subsidiaries that compete directly with other insurance subsidiaries.

POINT COUNTER-POINT

Will Finance Companies Be Replaced by Banks?

Point Yes. Commercial banks specialize in loans and can provide the services that are provided by finance companies. The two types of financial institutions will eventually merge into one.

Counter-Point No. Finance companies and commercial banks tend to target different markets for loans. Thus, commercial banks will not replace finance companies because they do not serve the same market.

Who Is Correct? Use the Internet to learn more about this issue and then formulate your own opinion.

QUESTIONS AND APPLICATIONS

1. **Exposure to Interest Rate Risk** Is the cost of funds obtained by finance companies very sensitive to market interest rate movements? Explain.

2. **Issuance of Commercial Paper** How are small and medium-sized finance companies able to issue commercial paper? Why do some well-known finance companies directly place their commercial paper?

3. **Finance Company Affiliations** Explain why some finance companies are associated with automobile manufacturers. Why do some of these finance companies offer below-market rates on loans?

4. **Uses of Funds** Describe the major uses of funds by finance companies.

5. **Credit Card Services** Explain how finance companies benefit from offering consumers a credit card.

6. **Leasing Services** Explain how finance companies provide financing through leasing.

7. **Regulation of Finance Companies** Describe the kinds of regulations that are imposed on finance companies.

8. **Liquidity Position** Explain how the liquidity position of finance companies differs from that of depository institutions such as commercial banks.

9. **Exposure to Interest Rate Risk** Explain how the interest rate risk of finance companies differs from that of savings institutions.

10. **Exposure to Credit Risk** Explain how the default risk of finance companies differs from that of other lending financial institutions.

Interpreting Financial News

Interpret the following comments made by Wall Street analysts and portfolio managers.

a. "During a credit crunch, finance companies tend to generate a large amount of business."

b. "Some finance companies took a huge hit as a result of the last recession because they opened their wallets too wide before the recession occurred."

c. "During periods of strong economic growth, finance companies generate unusually high returns without any hint of excessive risk; but their returns are at the mercy of the economy."

Managing in Financial Markets

Managing a Finance Company As a manager of a finance company, you are attempting to increase the spread between the rate earned on your assets and the rate paid on your liabilities.

a. Assume that you expect interest rates to decline over time. Should you issue bonds or commercial paper in order to obtain funds?

b. If you expect interest rates to decline, will you benefit more from providing medium-term, fixed-rate loans to consumers or floating-rate loans to businesses?

c. Why would you still maintain some balance between medium-term, fixed-rate loans and floating-rate loans to businesses even if you anticipate that one type of loan will be more profitable under a cycle of declining interest rates?

FLOW OF FUNDS EXERCISE

How Finance Companies Facilitate the Flow of Funds

Carson Company has sometimes relied on debt financing from Fente Finance Company. Fente has been willing to lend money even when most commercial banks have not. Fente obtains funding from issuing commercial paper and focuses mostly on channeling the funds to borrowers.

a. Explain how finance companies are unique by comparing Fente's net interest income, noninterest income, noninterest expenses, and loan losses to those of commercial banks.

b. Explain why Fente performs better than commercial banks in some periods.

c. Describe the flow of funds channeled through finance companies to firms such as Carson Company. What is the original source of the money that is channeled to firms or households that borrow from finance companies?

INTERNET/EXCEL EXERCISES

1. Go to www.ally.com. Describe the services offered by Ally Commercial Finance.

2. Retrieve the annual report of American International Group (its ticker symbol is AIG), which owns a large consumer finance company, or select your own consumer finance company. To access income statement information, go to finance.yahoo.com, enter the ticker symbol, and click on "Get Quotes." Then click on "SEC Filings."

Review the consumer finance company's recent performance. Has its income as a percentage of assets increased since the year before? Explain what caused this change over the last year. How have its operating expenses changed over the last year? Discuss how the finance company's recent strategy and economic conditions may explain the changes in these components of its income statement.

WSJ EXERCISE

Finance Company Performance

Using a recent issue of the *Wall Street Journal*, summarize an article that discussed the recent performance of a particular finance company. Does the article suggest that the finance company's performance was better or worse than the norm? What was the reason for the unusual level of performance?

ONLINE ARTICLES WITH REAL-WORLD EXAMPLES

Find a recent practical article available online that describes a real-world example regarding a specific financial institution or financial market that reinforces one or more concepts covered in this chapter.

If your class has an online component, your professor may ask you to post your summary of the article there and provide a link to the article so that other students can access it. If your class is live, your professor may ask you to summarize your application of the article in class. Your professor may assign specific students to complete this assignment or may allow any students to do the assignment on a volunteer basis.

For recent online articles and real-world examples related to this chapter, consider using the following

search terms (be sure to include the prevailing year as a search term to ensure that the online articles are recent):

1. [name of a specific finance company] AND earnings
2. [name of a specific finance company] AND loans
3. [name of a specific finance company] AND risk
4. [name of a specific finance company] AND net income
5. [name of a specific finance company] AND competition
6. [name of a specific finance company] AND operations
7. [name of a specific finance company] AND return on equity
8. finance company AND income
9. finance company AND return on assets
10. finance company AND risk

23
Mutual Fund Operations

CHAPTER OBJECTIVES

The specific objectives of this chapter are to:

- provide a background on mutual funds,
- describe the various types of stock and bond mutual funds,
- describe the performance of mutual funds,
- describe key characteristics of money market funds, and
- describe other types of funds.

WEB

www.bloomberg.com
Information on mutual fund performance.

A **mutual fund** is an investment company that sells shares and uses the proceeds to manage a portfolio of securities. Mutual funds have grown substantially in recent years, and they serve as major suppliers of funds in financial markets.

23-1 Background on Mutual Funds

Mutual funds serve as a key financial intermediary. They sell shares to individual investors and invest the money they receive in a portfolio of securities for the investors. They accommodate financing needs of corporations by purchasing newly issued stocks and corporate bonds in the primary market. They also accommodate the financing needs of the Treasury and municipal governments by purchasing newly issued Treasury and municipal bonds in the primary market. Their function as an intermediary is shown in Exhibit 23.1. They also frequently purchase securities in the secondary market.

Mutual funds also provide an important service for individual investors who wish to invest funds. Small investors are unable to diversify their investments because of their limited funds. A mutual fund may have holdings of 50 or more securities and yet require a minimum investment of only $250 to $2,500. Thus, small investors can invest in a diversified portfolio with a small investment. Investors who purchase shares of the mutual fund rely on the fund's portfolio managers to make the investment decisions.

Some investment companies such as Fidelity and Vanguard offer a family (collection) of many different mutual funds so that they can accommodate the diverse preferences of investors. Investors can normally transfer money from one mutual fund to another within the same family by making a phone call or requesting the transfer on their online account.

Mutual funds are sometimes referred to as **open-end funds** because they are open to investors, meaning that they will sell shares to investors at any time. In addition, they allow investors to sell (redeem) the shares back to the fund at any time. Thus the number of shares of an open-end fund is always changing. Mutual funds also offer various services, such as 24-hour telephone or Internet access to account information, money transfers between different funds operated by the same firm, consolidated account statements, check-writing privileges on some types of funds, and tax information. The three largest open-end mutual funds are Vanguard, Fidelity, and American Funds. In aggregate, they have more than $1.7 trillion in mutual fund assets.

Mutual funds have grown at a rapid pace over time, as is illustrated in Exhibit 23.2. Today there are more than 7,500 different mutual funds, with total assets of about $12 trillion. The value of mutual fund assets more than doubled between 1993 and 2010.

Exhibit 23.1 How Mutual Funds Finance Economic Growth

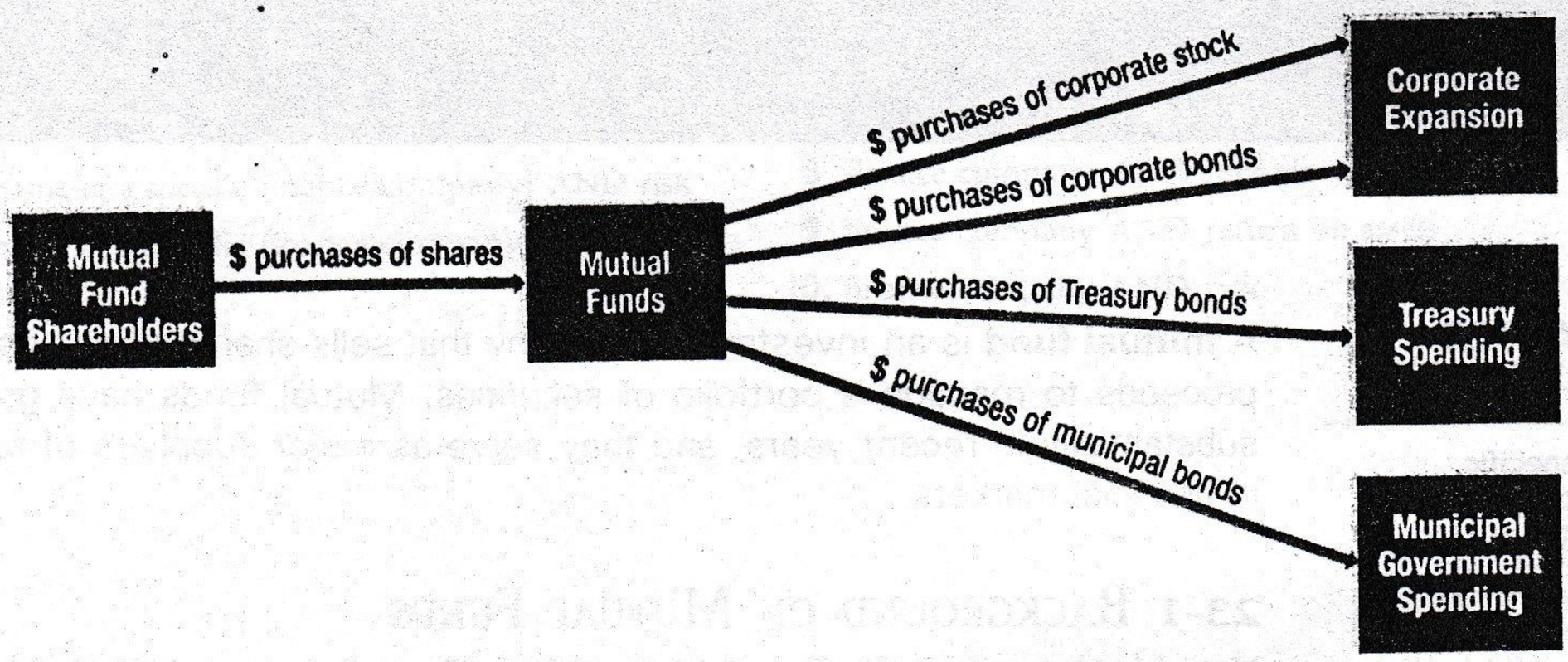
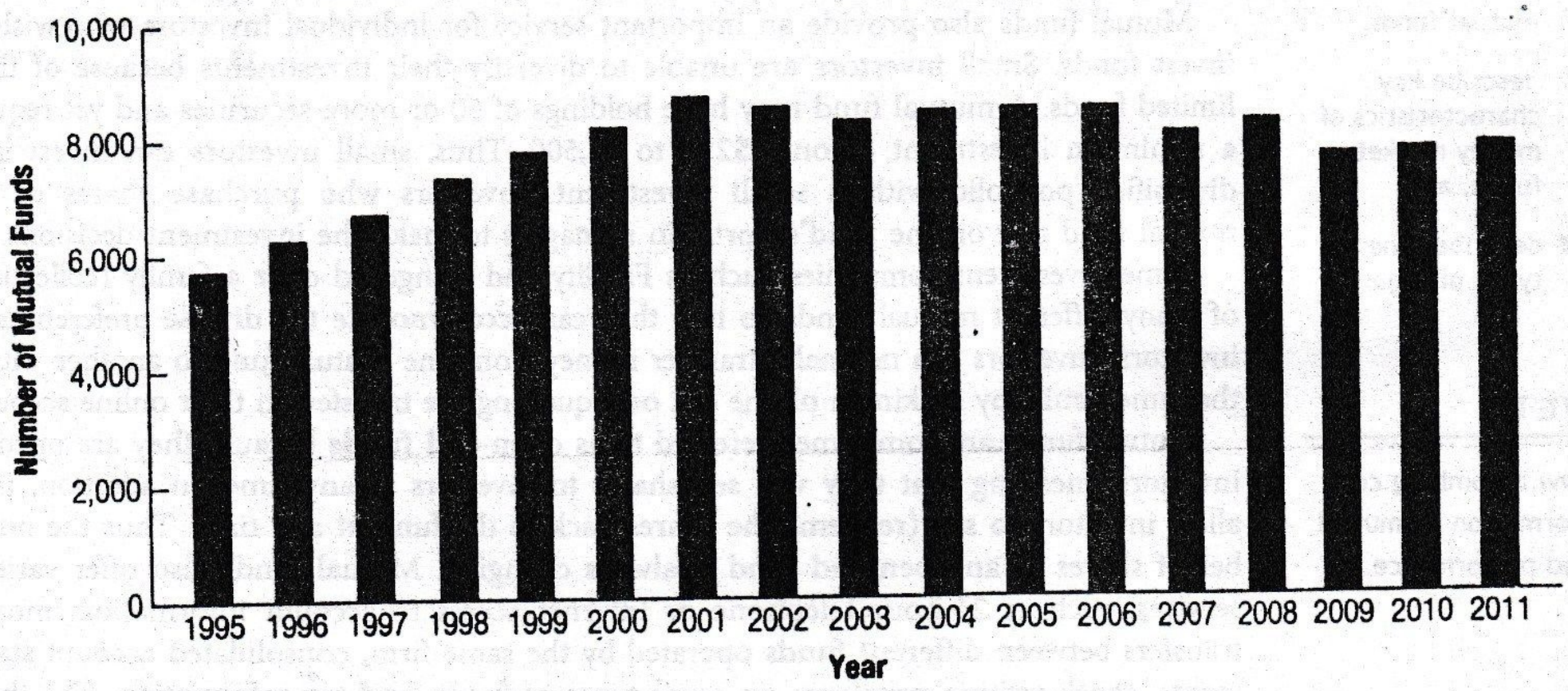


Exhibit 23.2 Growth in Mutual Funds



Note: The numbers shown here include money market funds.
Source: *Investment Company Institute.*

23-1a Pricing Shares of the Mutual Fund

The price per share of a mutual fund is equal to the **net asset value (NAV)** per share, which represents the value of the portfolio (per share) after accounting for expenses incurred from managing the fund. Specifically, the net asset value is estimated at the

end of each day by first determining the market value of all securities that constitute the mutual fund (any cash is also accounted for). Any interest or dividends accrued in the mutual fund are added to the market value. Then any expenses are subtracted, and the amount is divided by the number of shares of the fund outstanding.

EXAMPLE Newark Mutual Fund has 20 million shares issued to its investors. It used the proceeds to buy stock of 55 different firms. A partial list of its stock holdings is as follows:

NAME OF STOCK	NUMBER OF SHARES	PREVAILING SHARE PRICE	MARKET VALUE
Aztec Co.	10,000	$40	$ 400,000
Caldero, Inc.	20,000	30	600,000
	⋮	⋮	⋮
Zurkin, Inc.	8,000	70	560,000
Total market value of shares today			$500,020,000
+ Interest and dividends received today			+10,000
− Expenses incurred today			−30,000
= Market value of fund			$500,000,000

Net asset value = Market value of fund ÷ number of shares
= $500,000,000 ÷ 20,000,000
= $25 per share

When a mutual fund pays its shareholders dividends, its NAV declines by the per share amount of the dividend payout. The NAV per share of a mutual fund represents the price at which investors can purchase shares or can sell shares back to the mutual fund.

23-1b Mutual Fund Distributions to Shareholders

Mutual funds can generate returns to their shareholders in three ways. First, they can pass on any earned income (from dividends or coupon payments) as dividend payments to the shareholders. Second, they distribute the capital gains resulting from the sale of securities within the fund. A third type of return to shareholders is through mutual fund share price appreciation. As the market value of a fund's security holdings increases, the fund's NAV increases, and the shareholders benefit when they sell their mutual fund shares.

23-1c Regulation of Mutual Funds

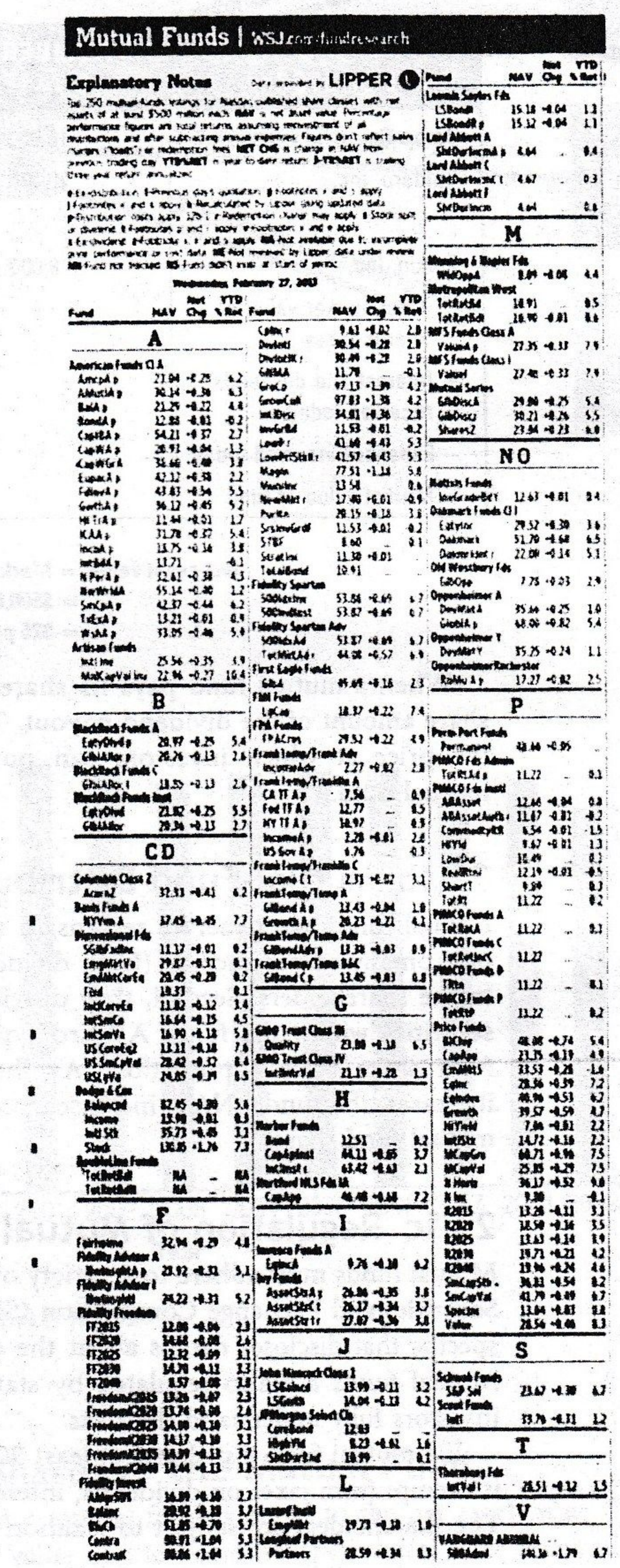
Mutual funds must adhere to a variety of federal regulations. They must register with the Securities and Exchange Commission (SEC) and provide interested investors with a prospectus that discloses details about the components of the fund and the risks involved. Mutual funds are also regulated by state laws, many of which attempt to ensure that investors fully understand the risks.

If a mutual fund distributes at least 90 percent of its taxable income to shareholders, it is exempt from taxes on dividends, interest, and capital gains distributed to shareholders. The shareholders are subject to taxation on these forms of income.

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Mutual Fund Quotations

The *Wall Street Journal* provides price quotations for some open-end mutual funds, as shown here. The fund family is listed, with various funds in the family shown below the family name. For each fund, the net asset value (NAV) is disclosed, along with the return generated by the fund over the year to date (YTD %Ret).



Mutual Funds | WSJ.com/fundresearch

Explanatory Notes Data provided by **LIPPER**

Wednesday, February 27, 2013

Fund	NAV	Net Chg	YTD %Ret
A			
American Funds Cl A			
AmcpA p	21.04	+0.25	6.2
AMutlA p	30.14	+0.36	6.3
BalA p	21.25	+0.22	4.8
BondA p	12.88	-0.03	-0.2
CapIBA p	54.21	+0.37	2.7
CapWA p	28.93	+0.04	1.3
CapWGrA	36.66	+0.48	3.8
EupacA p	42.12	+0.38	2.2
FdInvA p	43.83	+0.34	5.5
GovtA p	14.12	+0.05	5.2
HiIncA p	11.44	+0.01	1.7
ICAA p	31.78	+0.17	5.4
IncoA p	15.75	+0.14	3.8
IntBdA p	13.71	—	-0.1
NPerA p	32.61	+0.38	4.3
NewWrldA	55.14	+0.40	1.2
SmCpA p	42.37	+0.44	6.2
TxExA p	13.23	+0.01	0.9
WshA p	33.05	+0.46	5.0
Artisan Funds			
Intl Inv	25.56	+0.35	6.9
MidCapVal Inv	22.96	+0.27	10.4
B			
BlackRock Funds A			
EqtyDivd p	20.97	+0.25	5.4
GblAlloc p	20.26	+0.13	2.6
BlackRock Funds C			
GblAlloc t	18.55	+0.13	2.6
BlackRock Funds Inst			
EqtyDivd	21.82	+0.25	5.5
GblAlloc	20.36	+0.13	2.7
CD			
Columbia Class Z			
AcornZ	32.33	+0.41	6.2
Davis Funds A			
NYVen A	37.45	+0.45	7.7
Dimensional Fds			
5GlbFxdInc	11.17	+0.01	0.2
EmgMktVa	29.87	+0.31	8.3
EmMktCorEq	20.45	+0.28	8.2
Fixed	10.31	—	0.1
IntlCorEq	11.82	+0.12	3.4
IntlSmCo	16.64	+0.15	4.5
IntlSmVa	16.90	+0.13	5.8
US CoreEq2	13.11	+0.18	7.6
US SmCpVal	28.42	+0.32	8.4
USLgVa	24.85	+0.19	8.5
Dodge & Cox			
BalancedI	82.45	+0.80	5.6
Income	13.98	+0.01	0.3
Intl Stk	35.73	+0.45	3.1
Stock	130.85	+1.74	7.3
Doubleline Funds			
TotRetBdI	NA	—	NA
TotRetBdN	NA	—	NA
F			
Fairholme	32.94	+0.29	4.8
Fidelity Advisor A			
DiscEqMCA p	23.92	+0.31	5.1
Fidelity Advisor I			
DiscEqMCI	24.22	+0.31	5.2
Fidelity Freedom			
FF2015	12.08	+0.06	2.3
FF2020	14.66	+0.08	2.6
FF2025	12.32	+0.09	3.1
FF2030	14.79	+0.11	3.3
FF2040	8.57	+0.08	3.8
FreedomK2015	13.26	+0.07	2.3
FreedomK2020	13.74	+0.08	2.6
FreedomK2025	14.10	+0.10	3.1
FreedomK2030	14.17	+0.10	3.3
FreedomK2035	14.39	+0.11	3.7
FreedomK2040	14.44	+0.13	3.8
Fidelity Invest			
AllocSt70	16.39	+0.16	2.7
Balanc	20.92	+0.18	3.7
BlueCh	51.85	+0.70	5.7
Contra	90.71	+1.04	5.3
Contrafd	88.86	+1.04	5.3
Cptlinc r	9.61	+0.02	2.8
Dividend	30.54	+0.28	2.8
DivGthK r	30.49	+0.28	2.9
GNMA	11.78	—	-0.1
GroCo	97.13	+1.39	4.2
GrowCoK	97.83	+1.38	4.2
IntlDisc	34.81	+0.36	2.8
InvGrBd	11.53	+0.01	-0.2
LowPr r	43.66	+0.43	5.3
LowPrStkK r	43.57	+0.43	5.3
Magin	77.51	+1.18	5.8
MuniInc	13.54	—	0.6
NewMkt r	17.40	+0.01	-0.9
Puritn	20.15	+0.13	3.8
SrsInvGrdI	11.53	+0.01	-0.2
STBF	8.60	—	0.1
Stratinc	11.30	+0.01	
TotAlBond	10.91	—	
Fidelity Spartan			
500IdxInv	53.56	+0.69	6.7
500IndInst	53.57	+0.69	6.7
Fidelity Spartan Adv			
500IdxAd	53.57	+0.69	6.7
TotMktAd r	44.08	+0.57	6.9
First Eagle Funds			
GblA	49.69	+0.16	2.3
FMI Funds			
LgCap	18.37	+0.22	7.4
FPA Funds			
FPACres	29.52	+0.22	4.9
Frank Temp/Frank Adv			
IncomeAdv	2.27	+0.02	2.8
Frank Temp/Franklin A			
CA TF A p	7.56	—	0.9
Fed TF A p	12.77	—	0.5
NY TF A p	12.97	—	0.9
IncomeA p	2.28	+0.01	2.6
US Gov A p	6.76	—	-0.3
Frank Temp/Franklin C			
Income C t	2.31	+0.02	3.1
Frank Temp/Temp A			
GlBond A p	13.43	+0.04	1.8
Growth A p	20.23	+0.21	4.1
Frank Temp/Temp Adv			
GlBondAdv p	13.38	+0.03	1.9
Frank Temp/Temp B&C			
GlBond C p	13.45	+0.03	1.8
G			
GMO Trust Class III			
Quality	23.80	+0.18	6.5
GMO Trust Class IV			
IntlIntrVal	23.19	+0.28	1.3
H			
Harbor Funds			
Bond	12.51	—	0.2
CapAppInst	64.11	+0.85	3.7
IntlInstl r	63.42	+0.63	2.3
Heartland MLS Fds Ml			
CapApp	46.48	+0.68	7.2
I			
Ivanhoe Funds A			
EqIncA	9.76	+0.10	6.2
Ivy Funds			
AssetStrA p	26.86	+0.35	3.8
AssetStrC t	26.17	+0.34	3.7
AssetStrI r	27.07	+0.36	3.8
J			
John Hancock Class I			
LSBalanc	13.99	+0.11	3.2
LSGrwth	14.04	+0.13	4.2
JPMorgan Select Cls			
CoreBond	12.03	—	—
HighYld	8.23	+0.01	1.6
ShtDurBnd	10.99	—	0.1
L			
Laurel Hill			
EmgMkt	19.73	+0.10	1.6
Longleaf Partners			
Partners	28.59	+0.34	8.3

Fund	NAV	Net Chg	YTD %Ret
Loomis Sayles Fds			
LSBondI	15.18	+0.04	1.3
LSBondR p	15.12	+0.04	1.1
Lord Abbett A			
ShtDurIncA p	4.64	—	0.4
Lord Abbett C			
ShtDurIncC t	4.67	—	0.3
Lord Abbett F			
ShtDurInco	4.64	—	0.4
M			
Managers & Regnet Fds			
WhidOppA	8.09	+0.06	4.4
Metropolitan West			
TotRetBd	10.91	—	0.5
TotRetBdI	10.90	+0.01	0.6
MFS Funds Class A			
ValueA p	27.35	+0.33	7.9
MFS Funds Class I			
ValueI	27.40	+0.33	7.9
Mutual Series			
GblDiscA	29.80	+0.25	5.4
GblDiscZ	30.21	+0.26	5.5
SharesZ	29.84	+0.23	6.0
NO			
Nuveen Funds			
InvGrade Bd Y	12.63	+0.01	0.4
Oakmark Funds Cl I			
EqtyInc	29.52	+0.30	3.6
Oakmark	51.70	+0.68	6.5
OakmarkInt r	22.09	+0.14	5.1
Old Westbury Fds			
GlbOpp	7.75	+0.03	2.9
Oppenheimer A			
DevMktA	35.66	+0.25	1.0
GlobA p	68.06	+0.82	5.4
Oppenheimer Y			
DevMktY	35.25	+0.24	1.1
OppenheimerRochester			
RoMu A p	17.27	+0.02	2.5
P			
Penn Mut Funds			
PennMutInv	48.66	+0.95	—
PIMCO Fds Admin			
TotRtnAd p	11.22	—	0.1
PIMCO Fds Instl			
AllAssInst	12.66	+0.04	0.8
AllAssetAuthI r	11.67	+0.01	-0.2
CommodityRR	6.56	+0.01	-1.5
HiYld	9.67	+0.01	1.3
LowDur	10.49	—	0.1
RealRtnI	12.19	+0.01	-0.5
ShortT	9.99	—	0.1
TotRtI	11.22	—	0.2
PIMCO Funds A			
TotRtnA	11.22	—	0.1
PIMCO Funds C			
TotRtnInvC	11.22	—	
PIMCO Funds D			
TRtn	11.22	—	0.1
PIMCO Funds P			
TotRtP	11.22	—	0.2
Price Funds			
BlChip	48.68	+0.74	5.4
CapApp	23.35	+0.19	4.9
EmMkts	33.53	+0.28	-1.6
Eqinc	28.56	+0.39	7.2
Eqindex	48.96	+0.53	6.7
Growth	39.57	+0.59	4.7
HiYield	7.06	+0.01	2.2
IntlStk	14.72	+0.16	2.2
MdCapGro	68.71	+0.96	7.5
MdCapVal	25.85	+0.29	7.5
N Horiz	36.17	+0.52	6.0
N Inc	9.80	—	-0.1
R2015	13.26	+0.11	3.3
R2020	14.50	+0.16	3.5
R2025	13.63	+0.14	3.9
R2030	14.71	+0.21	4.2
R2040	13.96	+0.24	4.6
SmCapStk	36.83	+0.54	8.2
SmCapVal	41.79	+0.69	6.7
Spectrm	13.84	+0.03	1.8
Value	28.54	+0.46	8.3
S			
Schwab Funds			
S&P Sel	23.67	+0.30	6.7
Scout Funds			
Intl	33.76	+0.11	1.2
T			
Thornburg Fds			
IntlVal I	28.51	+0.12	1.5
V			
VANGUARD ADMIRAL			
500Adml	149.16	+1.79	6.7

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Information Contained in a Prospectus Mutual funds are required to provide a prospectus with information about their objectives, management, and risk. Specifically, the prospectus is required to disclose the following information:

1. The minimum amount of investment required
2. The investment objective of the mutual fund
3. The return on the fund over the past year, the past three years, and the past five years, in comparison to a broad market index
4. The exposure of the mutual fund to various types of risk
5. The services (such as check writing, ability to transfer money by telephone, etc.) offered by the mutual fund
6. The fees incurred by the mutual fund (such as management fees) that are passed on to the investors
7. Names of their portfolio managers and the length of time that they have been employed by the fund in that position

23-1d Management of Mutual Funds

Each mutual fund is managed by one or more portfolio managers, who must focus on the stated investment objective of that fund. These managers tend to purchase stocks in large blocks. They prefer liquid securities that can easily be sold in the secondary market at any time. Because open-end mutual funds allow shareholders to buy shares at any time, their managers stand ready to channel any new cash inflows from investors into new investments. They may maintain a small amount of cash for liquidity purposes. If there are more redemptions than sales of shares at a given point in time, the managers can use the cash to cover the redemptions. If the cash is not sufficient to cover the redemptions, they sell some of their holdings of securities to obtain the cash they need.

Interaction of Mutual Funds with Other Financial Institutions The managing of a mutual fund sometimes leads to interaction with other financial institutions, as described in Exhibit 23.3. Mutual funds sometimes purchase newly issued stocks or

Exhibit 23.3 Interaction between Mutual Funds and Other Financial Institutions

TYPE OF FINANCIAL INSTITUTION	INTERACTION WITH MUTUAL FUNDS
Commercial banks and savings institutions (SIs)	• Money market mutual funds invest in certificates of deposit at banks and SIs and in commercial paper issued by bank holding companies. • Some commercial banks (such as Citigroup and JPMorgan Chase) have investment company subsidiaries that offer mutual funds. • Some stock and bond mutual funds invest in securities issued by banks and SIs.
Finance companies	• Some money market mutual funds invest in commercial paper issued by finance companies. • Some stock and bond mutual funds invest in stocks and bonds issued by finance companies.
Securities firms	• Mutual funds hire securities firms to execute security transactions for them. • Some mutual funds own a discount brokerage subsidiary that competes with other securities firms for brokerage services
Insurance companies	• Some stock mutual funds invest in stocks issued by insurance companies. • Some insurance companies (such as Kemper) have investment company subsidiaries that offer mutual funds. • Some insurance companies invest in mutual funds.
Pension funds	• Pension fund portfolio managers invest in mutual funds.

Exhibit 23.4 How Mutual Funds Utilize Financial Markets

TYPE OF MARKET	HOW MUTUAL FUNDS USE THAT MARKET
Money markets	• Money market mutual funds invest in various money market instruments, such as Treasury bills, commercial paper, banker's acceptances, and certificates of deposit.
Bond markets	• Some bond mutual funds invest mostly in bonds issued by the U.S. Treasury or a government agency. Others invest in bonds issued by municipalities or firms. • Foreign bonds are sometimes included in a bond mutual fund portfolio.
Mortgage markets	• Some bond mutual funds invest in bonds issued by the Government National Mortgage Association (GNMA, or "Ginnie Mae"), which uses the proceeds to purchase mortgages that were originated by some financial institutions.
Stock markets	• Numerous stock mutual funds purchase stocks with various degrees of risk and potential return.
Futures markets	• Some bond mutual funds periodically attempt to hedge against interest rate risk by taking positions in interest rate futures contracts.
Options markets	• Some stock mutual funds periodically hedge specific stocks by taking positions in stock options. • Some mutual funds take positions in stock options for speculative purposes.
Swap markets	• Some bond mutual funds engage in interest rate swaps to hedge interest rate risk.

bonds by financial institutions and therefore are partially financing the expansion of those institutions. Some mutual funds are owned by commercial banks, in which case bank customers can periodically switch their savings between bank deposits and mutual funds.

Mutual Fund Use of Financial Markets Each type of mutual fund uses one or more financial markets to manage its portfolio, as described in Exhibit 23.4. Because mutual funds are focused on investing in securities, they frequently participate in securities markets. They also participate in futures and options markets to hedge against interest rate risk or the risk of adverse stock market conditions. Some mutual funds take speculative positions in futures or options contracts.

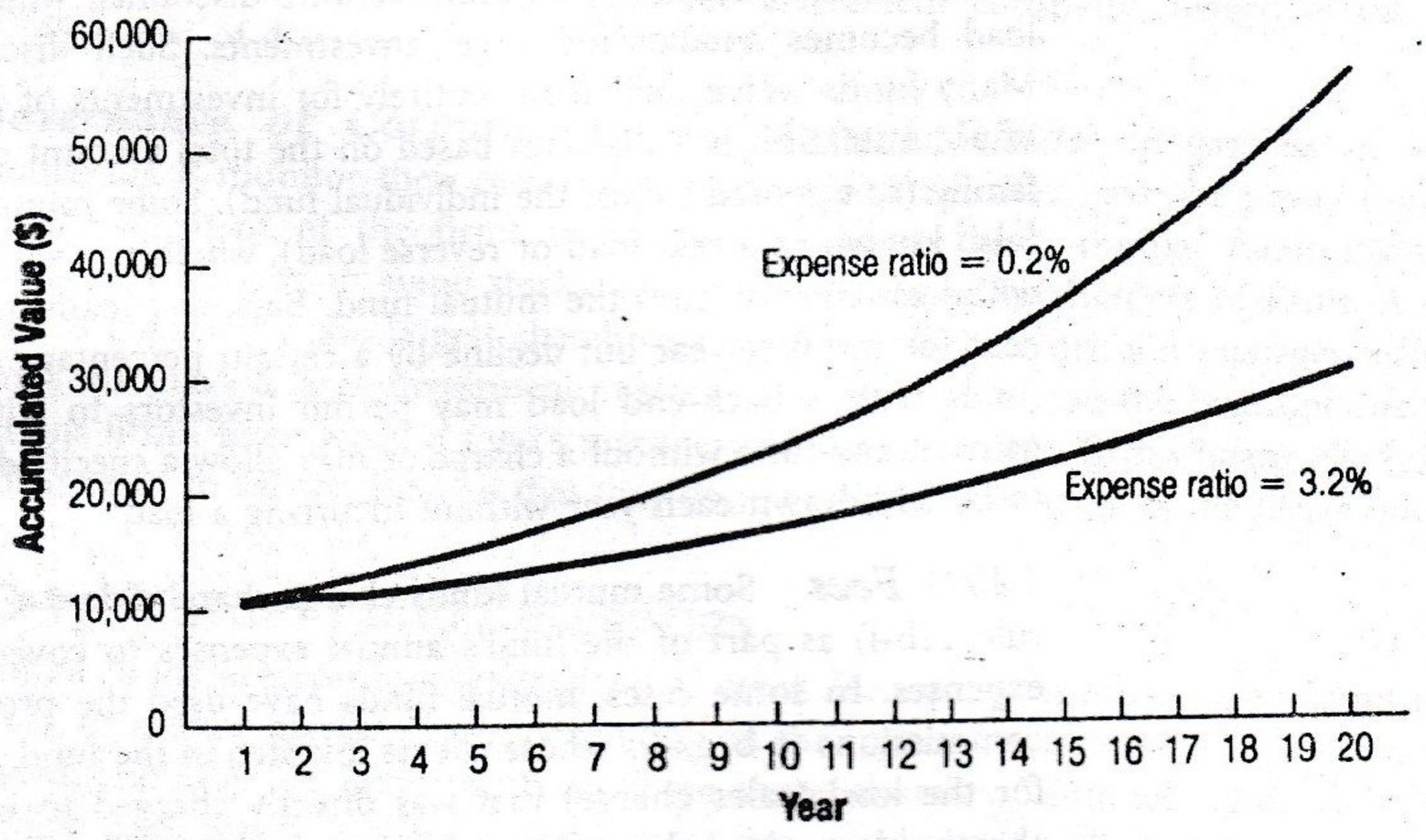
23-1e Expenses Incurred by Mutual Fund Shareholders

Mutual funds pass on their expenses to their shareholders. The expenses include compensation to the portfolio managers and other employees, research support, record-keeping and clerical fees, and marketing fees. Some mutual funds have recently increased their focus on marketing, but marketing does not necessarily enable a mutual fund to achieve high performance relative to the market or other mutual funds. In fact, marketing expenses increase the expenses that are passed on to the mutual fund's shareholders.

Expenses can be compared among mutual funds by measuring the expense ratio, which is equal to the annual expenses per share divided by the fund's NAV. An expense ratio of 2 percent in a given year means that shareholders incur annual expenses reflecting 2 percent of the value of the fund. Many mutual funds have an expense ratio between 0.6 and 1.5 percent. The average expense ratio among actively managed open-end mutual funds is about .93 percent. A high expense ratio can have a major impact on the returns generated by a mutual fund for its shareholders over time.

EXAMPLE Consider two mutual funds, each of which generates a return on its portfolio of 9.2 percent per year, ignoring expenses. One mutual fund has an expense ratio of 3.2 percent, so its actual return to shareholders is 6 percent per year. The other mutual fund has an expense ratio of 0.2 percent per year (some mutual funds have expense ratios at this level), so its actual return to shareholders

Exhibit 23.5 How the Accumulated Value Can Be Affected by Expenses (Assume Initial Investment of $10,000 and a Return before Expenses of 9.2 Percent)



is 9 percent per year. Assume you have $10,000 to invest. Exhibit 23.5 compares the accumulated value of your shares in the two mutual funds over time. After five years, the value of the mutual fund with the low expense ratio is about 20 percent higher than the value of the mutual fund with the high expense ratio. After 10 years, its value is about 40 percent more than the value of the mutual fund with the high expense ratio. After 20 years, its value is about 87 percent more. Even though both mutual funds had the same return on investment when ignoring expenses, the returns to shareholders after expenses are very different because of the difference in expenses charged. ●

www.sec.gov/answers/mffees.htm
Detailed information about fees charged by mutual funds to shareholders.

Thus, the higher the expense ratio, the lower the return for a given level of portfolio performance. Mutual funds with lower expense ratios tend to outperform others that have a similar investment objective. That is, funds with higher expenses are generally unable to generate higher returns that could offset those expenses. Since expenses can vary substantially among mutual funds, investors should review the annual expenses of any fund before making an investment.

Sales Charge Mutual funds may be referred to as either as a **load fund** or a **no-load fund.** Load funds are promoted by registered representatives of brokerage firms, who earn a sales charge upon the investment in the fund (commonly referred to as a front-end load) ranging between 3 and 8.5 percent. No-load funds are promoted strictly by the mutual fund of concern, thereby avoiding an intermediary.

EXAMPLE If you invest $10,000 in a load fund and are charged 6 percent, you incur a sales charge of $600 (0.06 × 10,000), so your actual investment in the load fund is $9,400. In other words, on the day you invest in the fund, the value of your holdings is 6 percent less than the amount of funds you initially had available to invest. In contrast, if you invest $10,000 in a no-load fund, you do not incur a sales charge and so your actual investment in the fund is $10,000. ●

Some investors may feel that a sales charge is worthwhile because the brokerage firm helps determine the type of fund that is appropriate for them. Other investors who feel

capable of making their own investment decisions often prefer to invest in no-load funds.

Some mutual funds with a front-end load often may offer the following types of discounts. Break points are basically volume discounts, which means that the percentage load becomes smaller for larger investments. Such discounts often start at $25,000. Many funds waive their loads entirely for investments of more than $1 million. A right of accumulation is a discount based on the total amount of money invested in the fund family (as opposed to just the individual fund). Some mutual funds have a **back-end load** (also known as a rear load or reverse load), which is a withdrawal fee charged when you withdraw money from the mutual fund. Back-end loads are often between 5 and 6 percent for the first year but decline by a certain percentage each subsequent year. Mutual funds with a back-end load may permit investors to withdraw dividends and capital gains at any time without a charge or may allow a specified proportion of the investment to be withdrawn each year without incurring a load.

12b-1 Fees Some mutual funds charge shareholders a 12b-1 fee (in reference to SEC rule 12b-1) as part of the fund's annual expenses to cover administrative or marketing expenses. In some cases, mutual funds have used the proceeds from 12b-1 fees to pay commissions to brokers whose clients invested in the fund. In essence, the fee substituted for the load (sales charge) that was directly charged to investors in load funds. Some shareholders who believe that they are not incurring a cost on a no-load fund do pay a commission indirectly through the 12b-1 fees. These fees are controversial because many mutual funds do not clarify how they use the money received from the fees.

23-1f Governance of Mutual Funds

A mutual fund is usually run by an investment company whose owners are different from the shareholders in the mutual funds. In fact, some managers employed by mutual funds invest their money in the investment company rather than in the mutual funds that they manage. Thus the investment company may have an incentive to charge high fees to the shareholders of the mutual fund. The expenses charged to the fund represent income generated by the investment company. Although valid expenses are incurred in running a mutual fund, the expenses charged by some investment companies may be excessive. Many mutual funds have grown substantially over time and should be able to capitalize on economies of scale. Yet their expense ratios have generally increased over time. Competition is expected to ensure that mutual funds will charge shareholders only reasonable expenses, but many investors are not aware of the expenses that they are charged.

Mutual funds, like corporations, are subject to some forms of governance that are intended to ensure that the managers are serving the shareholders. Each mutual fund has a board of directors that is supposed to represent the fund's shareholders. The effectiveness of the boards is questionable, however. The SEC requires that a majority of the directors of a mutual fund board be independent (not employed by the fund). However, an employee of the company can retire and qualify as an independent board member just two years later. In addition, the average annual compensation paid to the board members of large mutual funds exceeds $100,000. Thus, some board members may be willing to avoid confrontation with management if doing so enables them to keep their positions. Another problem is that board members of a mutual fund family commonly oversee all funds in the entire family. Consequently, they may concentrate on general issues that are not particular to any one fund and spend a relatively small amount of time on any individual fund within the family.

WEB

www.fidelity.com
Links to information about mutual funds managed by Fidelity.

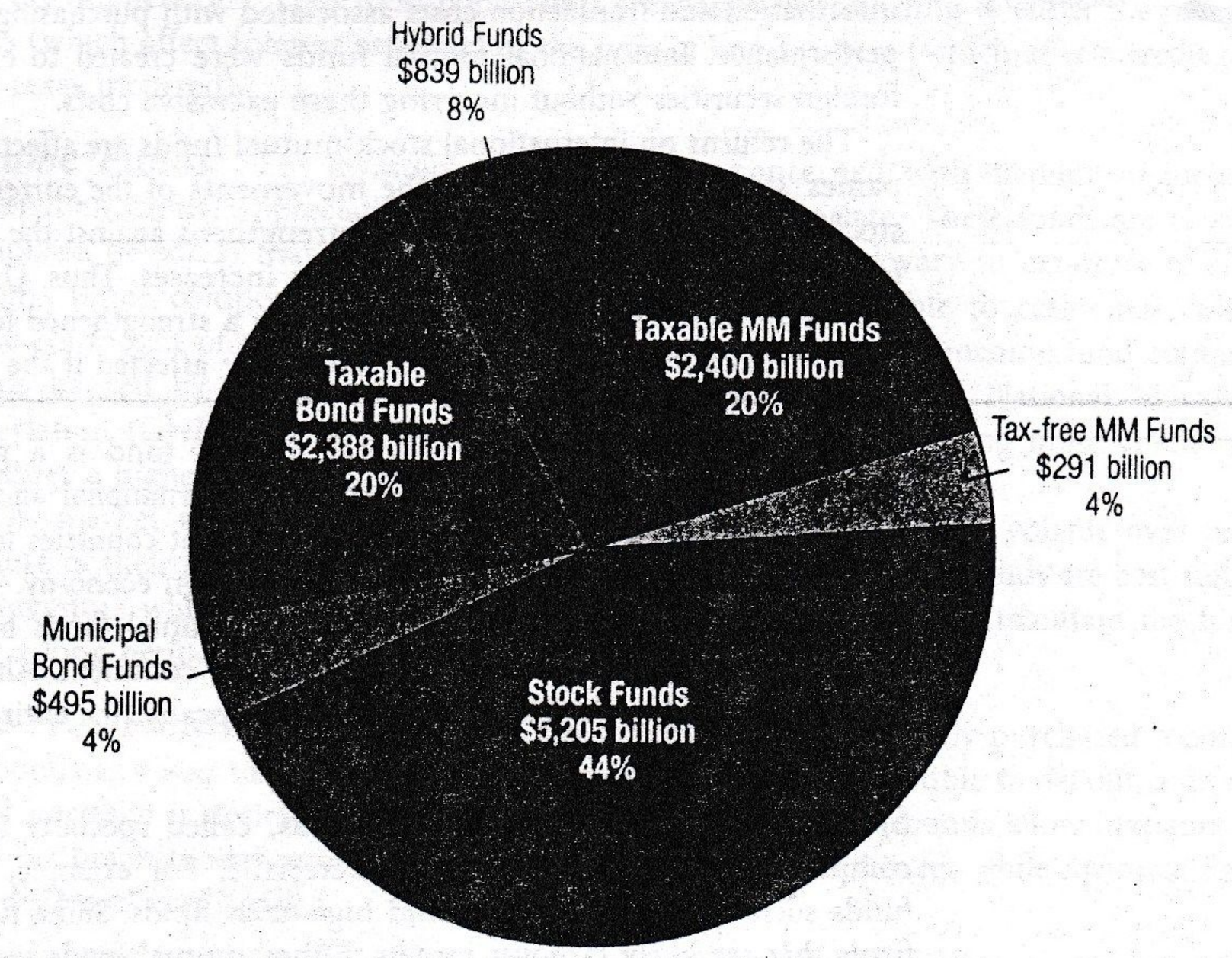
Mutual funds also have a compliance officer who is supposed to ensure that the fund's operations are in line with its objective and guidelines. Until recently, however, some compliance officers reported to the investment company instead of the mutual fund's board of directors.

Governance of Corporations by Mutual Funds Regardless of whether mutual funds monitor their own management effectively, they have the power to monitor the management of the firms in which they invest. Since mutual funds invest large amounts of money in some stocks, they become major shareholders of firms. A mutual fund is commonly the largest shareholder of many stocks. Portfolio managers of mutual funds that have a large investment in stocks commonly serve on the board of directors of various firms. Even when a fund's managers do not serve on a firm's board, the firm may still attempt to satisfy them so that they do not sell their holdings of the firm's stock.

23-1g Mutual Fund Categories

Mutual funds are commonly classified as stock (or equity) mutual funds, bond mutual funds, or money market funds, depending on the types of securities in which they invest. The distribution of investments in these three classes of mutual funds is shown in Exhibit 23.6. Stock funds are dominant when measured by the market value of total assets among mutual funds. Because investors have various objectives, no single portfolio can satisfy everyone. Consequently, a variety of mutual funds have been created.

Exhibit 23.6 Composition of Mutual Funds



Source: *Investment Company Institute.*

23-1h Stock Mutual Fund Categories

The more popular stock mutual fund categories include:

- Growth funds
- Capital appreciation funds
- Growth and income funds
- International and global funds
- Specialty funds
- Index funds
- Multifund funds

Growth Funds For investors who desire a high return and are willing to accept a moderate degree of risk, **growth funds** are appropriate. These funds are typically composed of stocks of companies that have not fully matured and are expected to grow at a higher than average rate in the future. The primary objective of a growth fund is to achieve an increase in the value of stocks with less concern about the generation of steady income.

Capital Appreciation Funds Also known as aggressive growth funds, **capital appreciation funds** are composed of stocks that have potential for very high growth but may also be unproven. These funds are suited to investors who are willing to risk a possible loss in value.

Growth and Income Funds Some investors are looking for potential for capital appreciation along with some stability in income. For these investors, a **growth and income** fund, which contains a unique combination of growth stocks, high-dividend stocks, and fixed-income bonds, may be most appropriate.

GLOBAL ASPECTS

International and Global Funds In recent years, awareness of foreign securities has been increasing. Investors historically avoided foreign securities because of the high information and transaction costs associated with purchasing them and monitoring their performance. International mutual funds were created to enable investors to invest in foreign securities without incurring these excessive costs.

The returns on international stock mutual funds are affected not only by foreign companies' stock prices but also by the movements of the currencies that denominate these stocks. As a foreign currency's value strengthens against the U.S. dollar, the value of the foreign stock as measured in U.S. dollars increases. Thus, U.S. investors can benefit not only from higher stock prices but also from a strengthened foreign currency (against the dollar). Of course, they can also be adversely affected if the foreign currencies denominating the stocks depreciate.

An alternative to an international mutual fund is a global mutual fund, which includes some U.S. stocks in its portfolio. International and global mutual funds have historically included stocks from several different countries to limit the portfolio's exposure to economic conditions in any single foreign economy.

In recent years, some new international mutual funds have been designed to fully benefit from a particular emerging country or continent. Although the potential return from such a strategy is greater, so is the risk because the entire portfolio value is sensitive to a single economy.

Specialty Funds Some mutual funds, called **specialty funds**, focus on a group of companies sharing a particular characteristic. For example, there are industry-specific funds such as energy, banking, and high-tech funds. Some funds include only stocks of firms that are likely takeover targets. Other mutual funds specialize in options or other

commodities, such as precious metals. There are also mutual funds that invest only in socially conscious firms. The risk of specialty funds varies with the particular characteristics of each fund.

Index Funds Some mutual funds are designed to simply match the performance of an existing stock index. For example, Vanguard offers an **index fund** that is designed to match the S&P 500 index. Index funds are composed of stocks that, in aggregate, are expected to move in line with a specific index. They contain many of the same stocks contained in the corresponding index and tend to have very low expenses because they require little portfolio management and execute a relatively small number of transactions.

Index funds have become very popular over time as investors recognize that most mutual funds do not outperform indexes. Furthermore, investors benefit because the expenses of index funds are much lower than the expenses of actively managed mutual funds. There are also index funds that represent specific non-U.S. countries or regions. These funds may be attractive to investors who wish to invest in a particular foreign market but do not have much knowledge about the specific stocks in that market.

Multifund Funds In recent years, **multifund mutual funds** have been created. A multifund mutual fund's portfolio managers invest in a portfolio of different mutual funds. A multifund mutual fund achieves even more diversification than a typical mutual fund because it contains several mutual funds. However, investors incur two types of management expenses: (1) the expenses of managing each individual mutual fund and (2) the expenses of managing the multifund mutual fund.

23-1i Bond Mutual Fund Categories

Investors in bonds are primarily concerned about interest rate risk, credit (default) risk, and tax implications. Thus most bond funds are classified according to either their maturities (which affect interest rate risk) or the type of bond issuers (which affects credit risk and taxes incurred).

Income Funds For investors who are mainly concerned with stability of income rather than capital appreciation, **income funds** are appropriate. These funds are usually composed of bonds that offer periodic coupon payments and vary in exposure to risk. Income funds composed of only corporate bonds are susceptible to credit risk, while those composed of only Treasury bonds are not. A third type of income fund contains bonds backed by government agencies, such as the Government National Mortgage Association (GNMA, or Ginnie Mae). Those income funds exhibiting more credit risk will offer a higher potential return, other things being equal.

The market values of even medium-term income funds are quite volatile over time because of their sensitivity to interest rate movements. Thus income funds are best suited for investors who rely on the fund for periodic income and plan to maintain the fund over a long period of time.

Tax-Free Funds Investors in high tax brackets have historically purchased municipal bonds as a way to avoid taxes. Because these bonds are susceptible to default, a diversified portfolio is desirable. Mutual funds containing municipal bonds allow investors in high tax brackets with even small amounts of money to avoid taxes while maintaining a low degree of credit risk.

High-Yield (Junk) Bond Funds Investors desiring high returns and willing to incur high risk may wish to consider bond portfolios with at least two-thirds of the

bonds rated below Baa by Moody's or BBB by Standard & Poor's. These portfolios are sometimes referred to as **high-yield** (or **junk bond**) **funds**. Typically, the bonds are issued by highly leveraged firms. The issuing firm's ability to repay junk bonds is very sensitive to economic conditions.

GLOBAL ASPECTS

International and Global Bond Funds International bond funds contain bonds issued by corporations or governments based in other countries. Global bond funds differ from international bond funds in that they contain U.S. as well as foreign bonds. Global funds may be more appropriate for investors who want a fund that includes U.S. bonds within a diversified portfolio, whereas investors in international bond funds may already have a sufficient investment in U.S. bonds and prefer a fund that focuses entirely on foreign bonds. International and global bond funds provide U.S. investors with an easy way to invest in foreign bonds.

Like bond funds containing U.S. bonds, these funds are subject to credit risk based on the financial position of the corporations or governments that issued the bonds. They are also subject to interest rate risk, as the bond prices are inversely related to the interest rate movements in the currency denominating each bond. These funds are also subject to exchange rate risk, as the NAV of the funds is determined by translating the foreign bond holdings to dollars. Thus, when the foreign currency denominating the bonds weakens, the translated dollar value of those bonds will decrease.

Maturity Classifications Since the interest rate sensitivity of bonds is dependent on the maturity, bond funds are commonly segmented according to the maturities of the bonds they contain. Intermediate-term bond funds invest in bonds with 5 to 10 years remaining until maturity. Long-term bond funds typically contain bonds with 15 to 30 years until maturity. The bonds in these funds normally have a higher yield to maturity but their values are more sensitive to interest rate movements than the bonds in intermediate-term funds. For a given type of bond fund classification (such as income or tax-free bond funds), various alternatives with different maturity characteristics are available, so investors can select a fund with the desired exposure to interest rate risk.

The variety of bond funds available can satisfy investors who desire combinations of the features described here. For example, investors who are concerned about interest rate risk and credit risk could invest in bond funds that focus on Treasury bonds with intermediate terms to maturity. Investors who expect interest rates to decline but are concerned about credit risk could invest in a long-term Treasury bond fund. Investors who expect interest rates to decline and are not concerned about credit risk may invest in high-yield bond funds. Investors who wish to avoid federal taxes on interest income and are concerned about interest rate risk may consider short-term municipal bond funds.

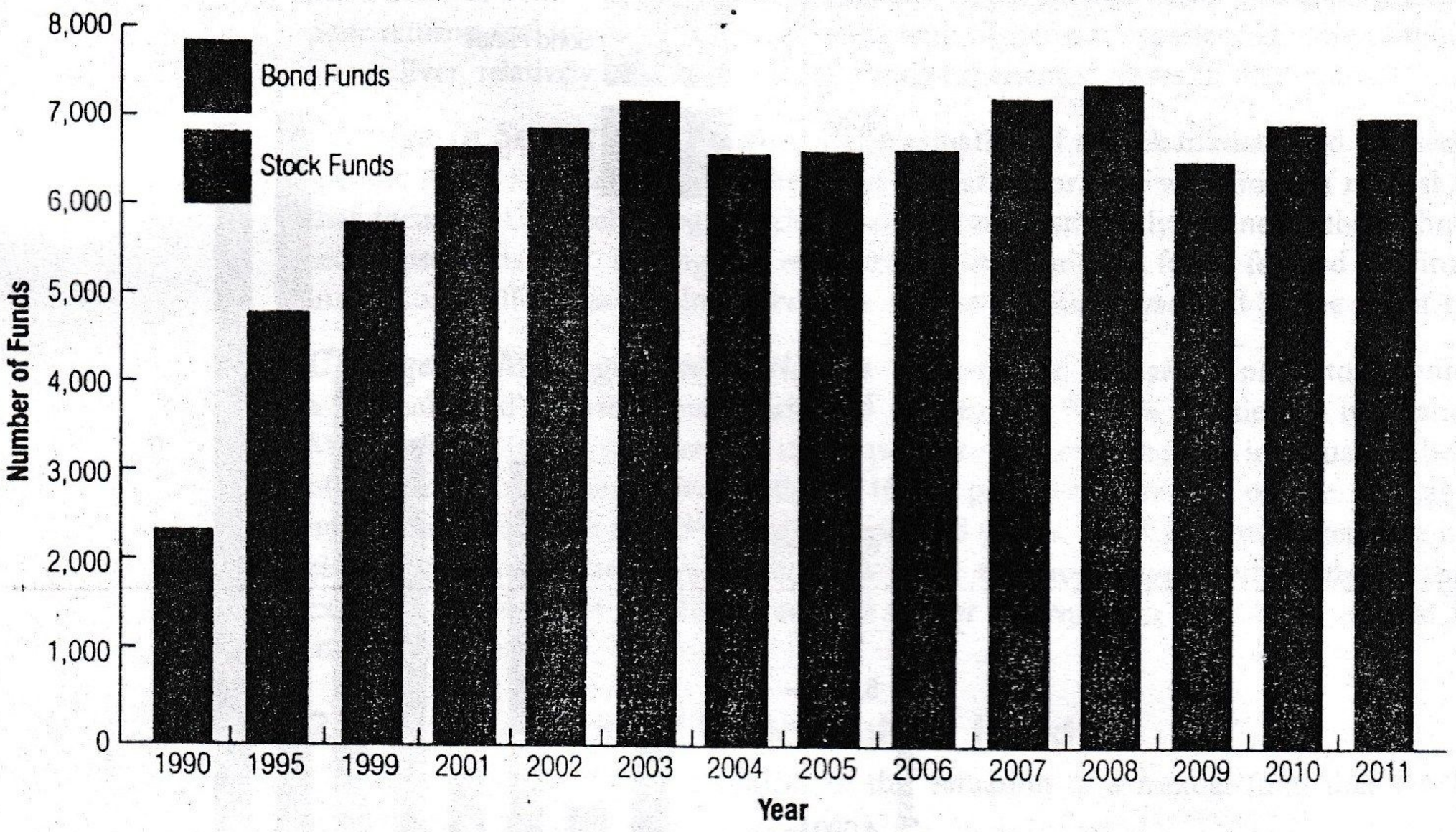
23-1j Asset Allocation Funds

Asset allocation funds contain a variety of investments (such as stocks, bonds, and money market securities). The portfolio managers adjust the compositions of these funds in response to expectations. For example, a given asset allocation fund will tend to concentrate more heavily on bonds if interest rates are expected to decline; it will focus on stocks if a strong stock market is expected. These funds may even concentrate on international securities if the portfolio managers forecast favorable economic conditions in foreign countries.

23-1k Growth and Size of Mutual Funds

Exhibit 23.7 shows how the number of mutual funds has grown over time. The relative growth of investment in stock mutual funds versus bond mutual funds (in terms of asset size) is illustrated in Exhibit 23.8. In the 1980s, investment in bond funds exceeded that

Exhibit 23.7 Growth in the Number of Stock Funds and Bond Funds



Source: *Investment Company Institute.*

WEB

biz.yahoo.com/p/top.html

Links to information about mutual funds, including a list of the top-performing funds.

of stock funds, but since the mid-1990s, investment in stock funds has been higher as investors have substantially increased their investment in stock funds in response to the generally higher returns in the stock market.

23-2 Performance of Mutual Funds

Investors in mutual funds closely monitor the performance of these funds. They also monitor the performance of other mutual funds in which they may invest in the future. In addition, portfolio managers of a mutual fund closely monitor its performance, as their compensation is typically influenced by the performance level.

23-2a Valuation of Stock Mutual Funds

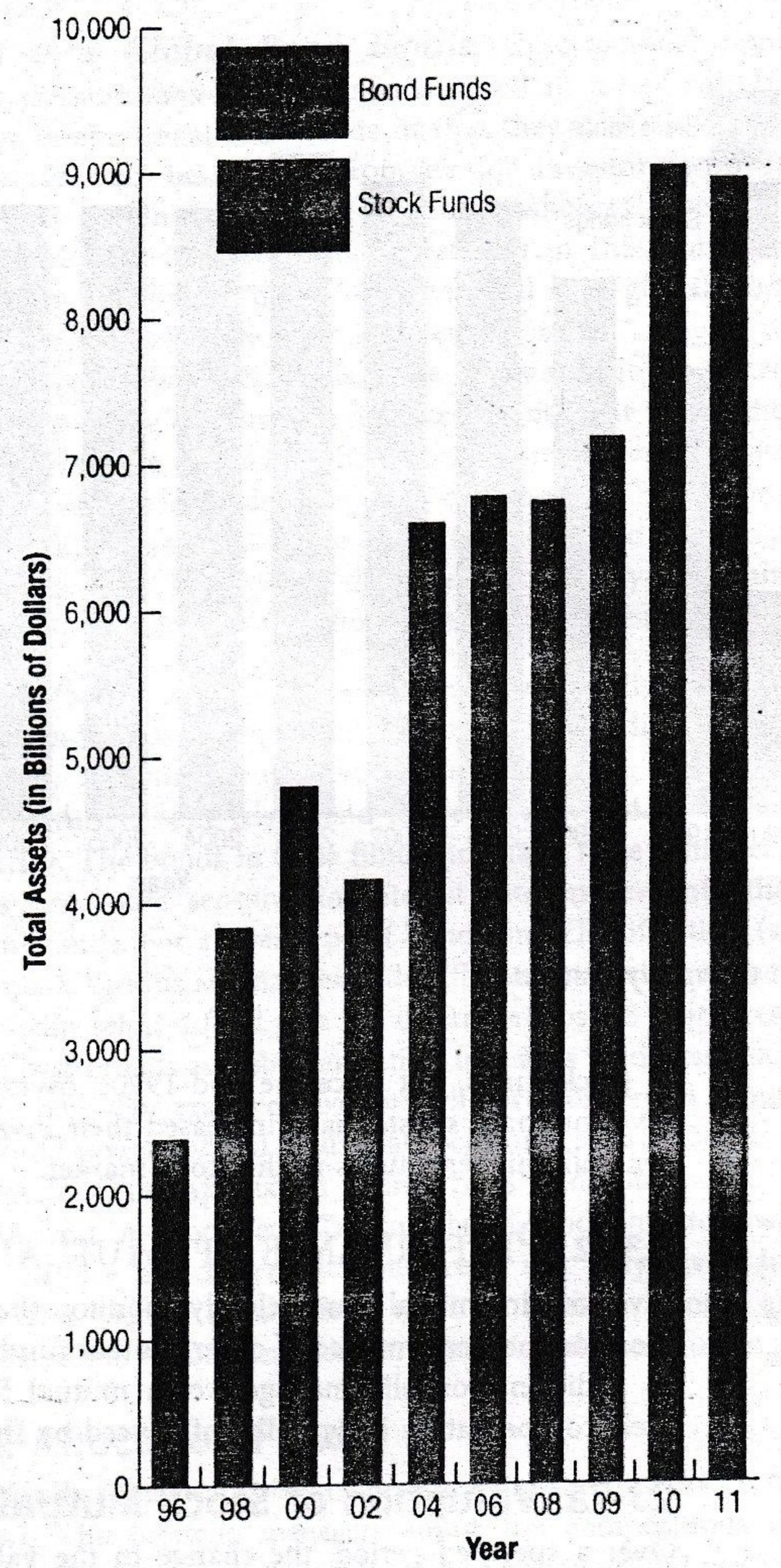
Over a specified period, the change in the valuation of a mutual fund that invests in stocks can be modeled as

$$\Delta V = f(\underbrace{\Delta \text{MKT}}_{+}, \underbrace{\Delta \text{SECTOR}}_{-}, \underbrace{\Delta \text{MANAB}}_{+})$$

where MKT represents general stock market conditions, SECTOR represents conditions of the specific sector (if there is one) in which the mutual fund is focused, and MANAB represents the abilities of the mutual fund's management.

Change in Market Conditions A change in a stock mutual fund's valuation is usually closely related to a change in stock market conditions. In fact, some mutual funds (index funds) attempt to resemble a particular stock market index.

Exhibit 23.8 Investment in Bond and Stock Mutual Funds



Source: *Investment Company Institute.*

To measure the sensitivity of a mutual fund's exposure to a change in stock market conditions, investors estimate its beta. A mutual fund's beta is estimated in the same manner as a stock's beta. Mutual funds with high betas are more sensitive to market conditions and therefore have more potential to benefit from favorable market conditions.

If unfavorable market conditions occur, they are subject to a more pronounced decline in their NAV and therefore in their price.

When the credit crisis intensified in the third quarter of 2008, the valuations of many stock indexes declined by at least 25 percent. Stock mutual funds also experienced very poor returns, and those stock mutual funds with higher risk experienced more pronounced losses. Even relatively safe stock mutual funds experienced losses in that quarter.

Change in Sector Conditions The valuation of a stock mutual fund focused on a specific sector is influenced by conditions in that sector. The valuations of mutual funds that focus on U.S. technology stocks tend to rise substantially whenever the technology sector performs well. During the credit crisis, stock mutual funds focused on financial institutions suffered severe losses because that sector was devastated by the credit crisis.

Change in Management Abilities In addition to market and sector conditions, a mutual fund's performance may also be affected by the abilities of its managers. Mutual funds in the same sector can experience different changes in valuation because of differences in management abilities. If the portfolio managers of one mutual fund have superior abilities for detecting undervalued stocks, that fund should generate higher returns for its investors. In addition, a fund that is managed efficiently so that its expenses are low may be able to achieve higher returns than other stock mutual funds in the same sector.

23-2b Valuation of Bond Mutual Funds

Over a specified period, the change in the valuation of a mutual fund that invests in bonds can be modeled as

$$\Delta V = f(\underbrace{\Delta R_f}_{-}, \underbrace{\Delta RP}_{-}, \underbrace{\Delta \text{MANAB}}_{+})$$

where R_f represents the risk-free rate, RP represents the risk premium, and MANAB represents the abilities of the fund's managers.

Change in the Risk-Free Rate The prices of bonds tend to be inversely related to changes in the risk-free interest rate. In periods when the risk-free interest rate declines substantially, the required rate of return by bondholders declines, and most bond funds perform well. Those bond funds that are focused on bonds with longer maturities are more exposed to changes in the risk-free rate.

Change in the Risk Premium The prices of bonds tend to decline in response to an increase in the risk premiums required by investors who purchase bonds. When economic conditions deteriorate, the risk premium required by bondholders usually increases, which results in a higher required rate of return (assuming no change in the risk-free rate) and lower prices on risky bonds. Thus, bond mutual funds focusing on risky bonds perform poorly.

Change in Management Abilities The performance levels of bond mutual funds in a specific bond classification can vary because of differences in the abilities of the funds' portfolio managers. If the portfolio managers of one bond fund in that classification have superior abilities for selecting undervalued bonds, that bond fund should generate higher returns. In addition, a bond fund that is managed efficiently so that its expenses are low may be able to achieve higher returns than other bond mutual funds in the same classification.

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Performance of Mutual Funds

The *Wall Street Journal* provides recent performance information on various mutual fund indexes, as shown here. Each index represents a particular type of mutual fund and reflects a specific category and the size of the firms targeted by the fund (small versus large capitalization stocks). Investors can review the information to determine how various types of mutual funds performed over the last week and since the beginning of the year.

Source: Reprinted with permission of the *Wall Street Journal*, Copyright © 2013 Dow Jones & Company, Inc. All Rights Reserved Worldwide.

Lipper Indexes

Stock-Fund Indexes	PRELIM CLOSE	PERCENT CHANGE FROM PREV CLOSE	WK AGO	DEC 31
Large-Cap Growth	4568.33	+1.32	+0.13	+4.81
Large-Cap Core	3384.13	+1.28	+0.19	+6.74
Large-Cap Value	14644.42	+1.42	-0.01	+7.15
Multi-Cap Growth	4340.39	+1.44	+0.29	+6.00
Multi-Cap Core	11446.38	+1.29	+0.18	+6.68
Multi-Cap Value	6221.33	+1.39	+0.11	+7.78
Mid-Cap Growth	1211.83	+1.60	+0.39	+7.62
Mid-Cap Core	1192.59	+1.42	-0.03	+7.73
Mid-Cap Value	1828.51	+1.55	+0.11	+8.87
Small-Cap Growth	870.99	+1.15	-0.58	+6.69
Small-Cap Core	716.29	+1.15	-0.44	+7.08
Small-Cap Value	1147.97	+1.05	-0.32	+7.46
Equity Income Fd	6706.22	+1.16	+0.22	+6.53
Science and Tech Fd	1020.41	+1.05	-0.28	+4.65
International Fund	1332.14	+0.94	-0.79	+2.63
Balanced Fund	7947.57	+0.76	+0.15	+3.37
Bond-Fund Indexes				
Short Inv Grade	333.24	-0.04	+0.08	+0.25
Intmdt Inv Grade	478.32	-0.03	+0.37	+0.96
US Government	599.92	-0.05	+0.45	-0.53
GNMA	673.77	-0.06	+0.25	-0.24
Corp A-Rated Debt	1685.14	-0.07	+0.59	-0.05

Indexes are based on the largest funds within the same investment objective and do not include multiple share classes of similar funds.

Source: Lipper Inc.

23-2c Performance from Diversifying among Funds

The performance of any given mutual fund may be primarily driven by a single economic factor. For example, the performance of growth stock funds may be highly dependent on the stock market's performance (market risk). The performance of any bond mutual fund is highly dependent on interest rate movements (interest rate risk). The performance of any international mutual fund is influenced by the dollar's value (exchange rate risk). When all securities in a given mutual fund are similarly influenced by an underlying economic factor, the fund does not achieve full diversification benefits. For this reason, some investors diversify among different types of mutual funds so that only a portion of their entire investment is susceptible to a particular type of risk. Diversification among types of mutual funds can substantially reduce the volatility of returns on the overall investment.

23-2d Ratings on Mutual Funds

There are many rating services that rate mutual funds. Some ratings are based on past performance over a recent period, such as the last year or three years. Mutual funds with high ratings based on past performance commonly attract large inflows of new investments. In fact, mutual fund families heavily advertise their specific funds that have earned high ratings in order to attract more funds from investors. However, ratings based on recent performance are not necessarily a useful indicator of future performance.

23-2e Research on Mutual Fund Performance

A variety of studies have attempted to assess mutual fund performance over time. Measuring mutual fund performance solely by return is not a valid test because the return will likely be highly dependent on the performance of the stock and bond markets during the period of concern. A more appropriate measure of performance is to compare the mutual fund return to the return of a benchmark market index. Thus, the performance of a stock mutual fund focused on large stocks might be compared to that of an index representing large stocks (such as the S&P 500 index), while the performance of a bond mutual fund focused on high quality corporate bonds might be compared to that of a highly rated corporate bond index.

Most studies that assess mutual fund performance find that mutual funds do not outperform benchmarks, especially when accounting for the type of securities that each fund invests in. Furthermore, mutual funds that have high expense ratios tend to perform worse. Even when returns are adjusted to account for risk, mutual funds have, on average, failed to outperform the market.

Advocates of market efficiency suggest that, beyond insider information, market prices should already reflect any good or bad characteristics of each stock, making it difficult to construct a portfolio whose risk-adjusted returns will consistently outperform the market. Even if mutual funds do not outperform the market, they can still be attractive to investors who wish to diversify and who prefer that a portfolio manager make their investment decisions.

23-3 Money Market Funds

Money market mutual funds, sometimes called money market funds (MMFs), sell shares to individuals and use the proceeds to invest in money market (short-term) instruments for their investors. The main difference between money market funds and the mutual funds discussed earlier is that money market funds focus their investment in money market securities. Because investors can participate in some MMFs with $1,000 or less, they are able to invest in money market instruments that they could not afford on their own. Most MMFs allow check-writing privileges, although there may be restrictions on the number of checks written per month or on the minimum amount of the check. If the fund distributes at least 90 percent of its income to its shareholders, the fund itself is exempt from federal taxation.

Money market funds send periodic account statements to their shareholders to update them on any changes in their balance. They also send shareholders periodic updates on any changes in the asset portfolio composition, providing a breakdown of the names of securities and amounts held in the MMF portfolio.

Because the sponsoring investment company is willing to purchase MMFs back at any time, investors can liquidate their investment whenever they desire. In most years, additional sales of shares exceed redemptions, allowing the companies to build their MMF portfolios by purchasing more securities. When redemptions exceed sales, the company accommodates the amount of excessive redemptions by selling some of the assets contained in the MMF portfolios.

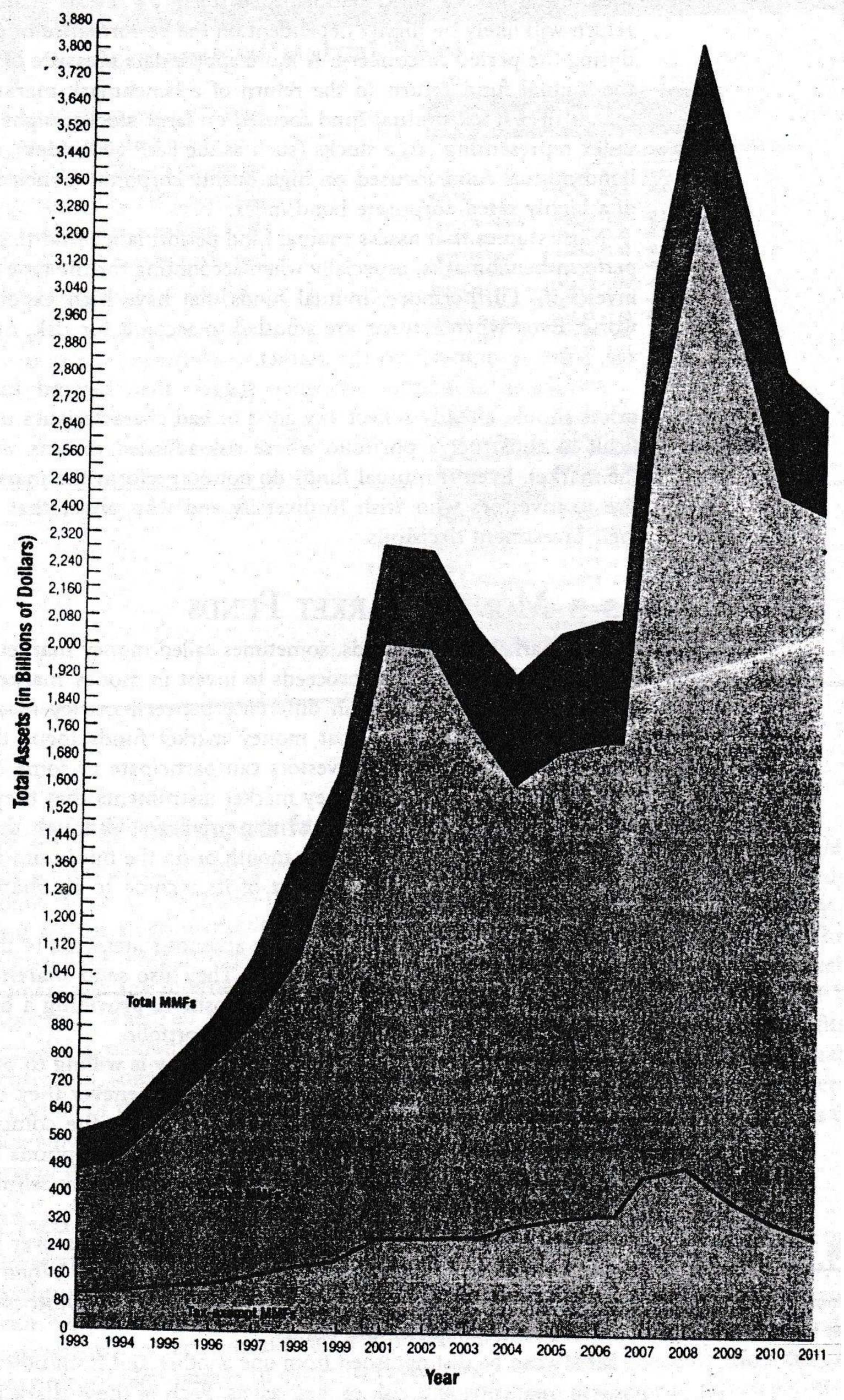
Exhibit 23.9 illustrates the growth in assets of MMFs over time. As investors increase their investment in MMFs, the asset level increases. When economic conditions are weak, investment in MMFs tends to increase as investors become more concerned about the risks of stocks and bonds.

MMFs can be distinguished from one another and from other mutual funds by the composition, maturity, and risk of their assets. Each of these characteristics is described next.

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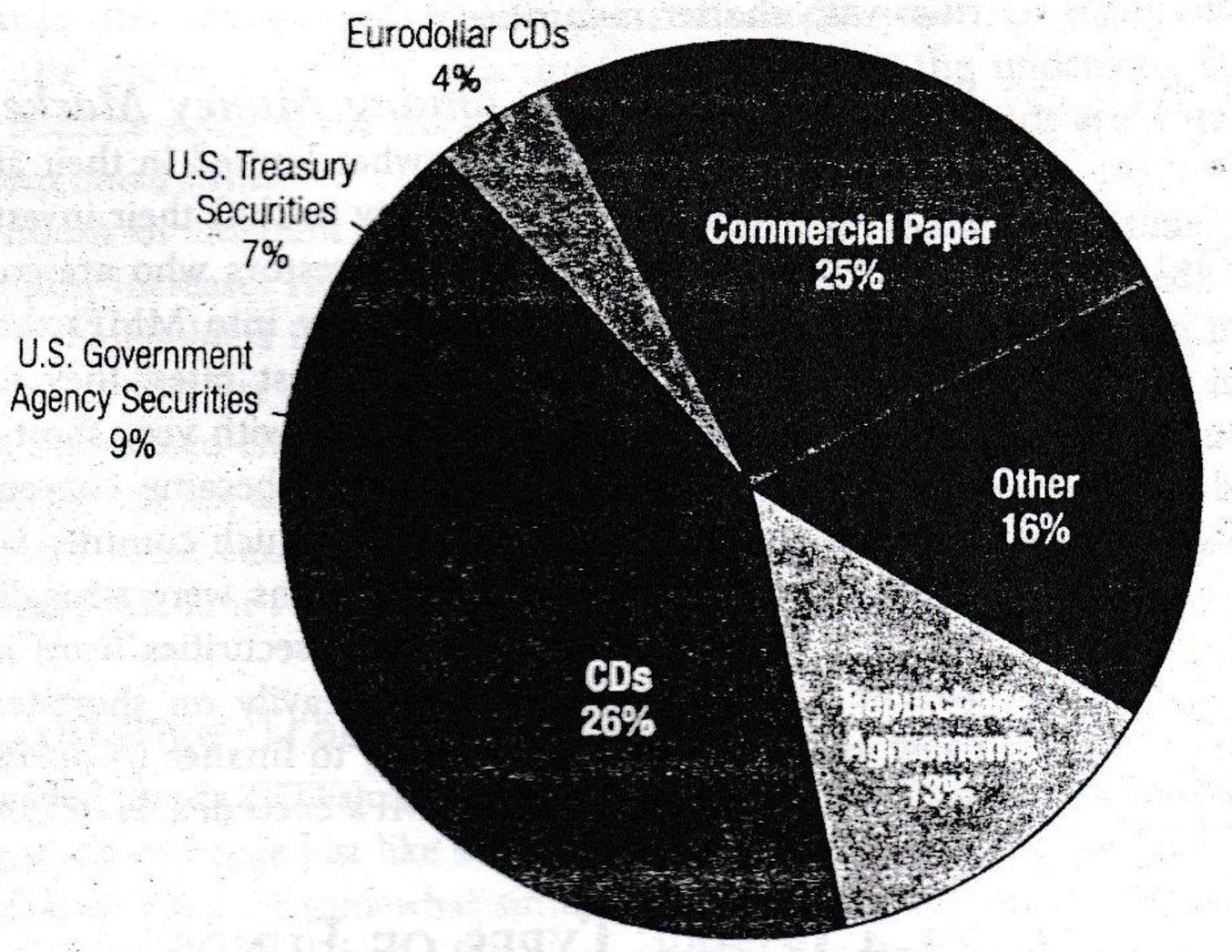
www.imoneynet.com
Detailed information about money market funds.

Exhibit 23.9 Growth in Money Market Fund Assets



Source: *Investment Company Institute.*

Exhibit 23.10 Composition of Taxable Money Market Fund Assets in Aggregate



Source: *Investment Company Institute.*

23-3a Asset Composition of Money Market Funds

Exhibit 23.10 shows the composition of money market fund assets in aggregate. Commercial paper, CDs, repurchase agreements, and Treasury securities are the most common components. This composition reflects the importance of each type of asset for MMFs overall and does not represent the typical composition of any particular MMF. Each MMF is usually more concentrated in whatever assets serve its objective.

23-3b Risk of Money Market Funds

MMFs usually have a low level of credit risk because the money market securities they invest in have low credit risk. Because MMFs contain instruments with short-term maturities, their market values are not too sensitive to movements in market interest rates (as are mutual funds containing long-term bonds). Therefore, their exposure to interest rate risk is low. In general, MMFs are normally characterized as having relatively low risk and low expected returns and so are popular among investors who need a conservative investment medium.

23-3c Management of Money Market Funds

The role of MMF portfolio managers is to maintain an asset portfolio that satisfies the underlying objective of a fund. If the managers expect a stronger economy, they may replace maturing risk-free securities (Treasury bills) with more commercial paper or CDs.

Some MMFs have very little flexibility in their composition. For example, some MMFs may as a rule maintain a high percentage of their investment in T-bills to assure investors that they will continue to refrain from risky securities.

Even if managers are unable to change the type of money market securities in the portfolio, they can still influence performance by changing the maturities of the securities

in which they invest. For example, if managers expect interest rates to increase in the future, they should use funds generated from maturing securities to purchase new securities with shorter maturities.

Shifting Investments among Money Market Funds Although managers of money market funds are somewhat limited in their ability to change the composition of the fund, investors have the ability to shift their investments among funds in response to changing economic conditions. Investors who are concerned about a potential increase in credit risk can move their money into MMFs that are heavily invested in Treasury bills. If investors expect rising interest rates, they can move their money into MMFs that are heavily invested in securities with very short-term maturities.

During the credit crisis, investors became concerned about the risk of MMFs that were focused on commercial paper. Much commercial paper is issued by financial institutions, and many financial institutions were struggling during the financial crisis. The failure of Lehman Brothers (a large securities firm) in September 2008 scared investors because Lehman Brothers relied heavily on short-term securities (such as commercial paper and repurchase agreements) to finance its operations. In one week during September 2008, withdrawals from MMFs exceeded $140 billion.

23-4 Other Types of Funds

In recent years, several other types of funds have become very popular. These include exchange-traded funds, venture capital funds, private equity funds, hedge funds, and real estate investment trusts. Each type is described in turn.

23-4a Closed-End Funds

Closed-end funds issue shares and use the proceeds to make investments in stocks or bonds representing a particular sector or country for their investors. Unlike open-end mutual funds, closed-end funds are closed to new investors after the initial offering of shares. In addition, they do not repurchase (redeem) the shares they sold. Investors who purchased shares of closed-end funds can sell the shares on a stock exchange (in the secondary market), and new investors can purchase the shares on the stock exchange.

Some closed-end funds engage in secondary offerings of new shares and use the proceeds to expand their investment portfolios. In addition, some closed-end funds periodically buy back some of their existing shares on the stock exchange where their shares are listed when they believe that the shares are undervalued.

There are about 630 closed-end funds. Approximately 70 percent of these funds invest mainly in bonds or other debt securities, while the other 30 percent focus on stocks. The closed-end stock funds represent particular sectors or countries, which enables investors to invest in a portfolio of stocks that reflects a particular sector or country. The total market value of closed-end funds is less than $300 billion, which is much smaller than the total market value of open-end mutual funds.

Unlike open-end funds, closed-end funds can be sold short by investors. This allows investors to capitalize on their expectations that stock prices of a particular sector or country represented by the closed-end fund will decline.

Market Price of Closed-End Funds The market price of a closed-end fund can deviate from the aggregate value of the underlying stocks (measured by net asset value per share). For some closed-end funds, the shares are priced higher than the aggregate value of the respective portfolio. This often occurs when the shares represent stocks of

countries that have investment restrictions. Investors from the United States who want to invest in those stocks are willing to pay a premium beyond the market value of the stocks because they cannot easily obtain the stocks otherwise. For many other closed-end funds, the shares are priced at a discount relative to the underlying stocks. This may occur because some of the stocks held by the closed-end funds are illiquid because they represent small firms.

The premium or discount on a closed-end fund can change over time. Thus, if a fund's premium increases relative to its NAV (or if its discount is reduced), the return to the fund's shareholders is increased. Some investment strategies focus on investing in closed-end funds that are priced at a large discount from their NAV. This is based on the premise that closed-end funds with large discounts in price are undervalued. Applying this strategy will not always generate high risk-adjusted returns, however, because the market price of some closed-end funds with large discounts could continue to decline over time (their discount could become more pronounced).

23-4b Exchange-Traded Funds

Exchange-traded funds (ETFs) are designed to mimic particular stock indexes and are traded on a stock exchange just like stocks. Unlike an open-end fund, an ETF has a fixed number of shares. They are somewhat similar to those open-end mutual funds that invest in a specific stock index. Yet they differ from open-end mutual funds in that their shares are traded on an exchange and their share price changes throughout the day. They can be purchased on margin, just like stocks. They are very appealing to institutional investors and individual investors; more than $1.3 trillion is invested in ETFs. Vanguard, BlackRock, and State Street offer a wide variety of ETFs and dominate the ETF market. Today more than 1,400 different ETFs are offered. However, it is now difficult for investment companies to offer new types of ETFs that are different than those that already exist.

Management of ETFs Because ETFs are intended to mimic a particular index, they differ from most open- and closed-end funds in that they are not actively managed.

This may be viewed by some investors as a disadvantage because they are not trying to outperform an existing index. Yet mutual funds with active management do not necessarily achieve higher returns than benchmarks, and could have lower returns. In addition, some investors prefer the lack of active management because the fees are much lower for ETFs. The annual fee on ETFs is, on average, about .50 percent.

Some investment companies have recently established actively managed ETFs. For example, there may be ETFs in the future that mimic a particular index but that can be revised by a manager to increase the level of investment (with borrowed funds) when the manager expects more favorable returns, and no use of borrowed funds when the manager expects less favorable returns. The annual fees of actively managed ETFs are, on average, about .70 percent. This is higher than the traditional non-managed ETF, but lower than the typical annual fee of open-end mutual funds. Many critics question whether the concept of managed ETFs will appeal to investors.

Capital Gains on ETFs Because ETFs are not actively managed, they normally do not have capital gains and losses that must be distributed to shareholders. Exchange-traded funds have become very popular in recent years because they are an efficient way for investors to invest in a particular stock index.

Liquidity of ETFs ETFs are more liquid than shares of open-end mutual funds because they can be sold at any moment during trading hours. Conversely, mutual fund

shares are sold at the end of the day. This difference can be important for investors who trade shares frequently. However, for investors who hold their investments for long-term periods, this difference may not be important.

Brokerage Fees One disadvantage of ETFs is that each purchase of additional shares must be executed through the exchange where they are traded. Investors incur a brokerage fee from purchasing the shares just as if they had purchased shares of a stock. This cost is especially important to investors who plan on making frequent additions to their investment in a particular ETF.

Short Sales of ETFs Like closed-end funds, ETFs can be sold short. In fact, investors more commonly short ETFs than closed-end funds because ETFs are more liquid, which makes it easier to execute the short sales. The shares of ETFs sold short represent about 19 percent of all ETF shares. This ratio is about 10 times larger than it is for individual stocks. It is attributed to investors who may more commonly bet on price declines of sectors or countries in aggregate than on individual stocks. In addition, some of the short selling of ETFs is conducted by investors in order to hedge a portion of their existing assets. For example, a financial institution that currently holds a very large portfolio of technology stocks may be concerned about the price movements during the next week even though it has confidence in those stocks over the long run. It could take a short position in a technology stock ETF over the next week to hedge its holdings of individual technology stocks.

Popular ETFs Exchange-traded funds are commonly classified as broad based, sector, or global, depending on the specific index that they mimic. The broad-based funds are the most popular, but both sector and global ETFs have experienced substantial growth in recent years. A popular ETF is the so-called PowerShares QQQ, or Cube (its trading symbol is QQQQ), which represents the Nasdaq 100 index of technology firms. Thus, Cubes are ideal for investors who believe that technology stocks will perform well but do not want to select individual technology stocks. Another popular ETF is the Standard & Poor's Depository Receipt (SPDR or Spider), which represents the S&P 500 index. Investors who anticipate that the stock market as represented by the S&P 500 will perform well may purchase shares of Spiders, especially when their expectations reflect the composite as a whole rather than any individual stock within the composite. Spiders trade at one-tenth the S&P 500 value, so if the S&P 500 is valued at 1400, a Spider is valued at $140. The percentage change in the price of the shares over time is equivalent to the percentage change in the value of the S&P 500 index.

http://us.ishares.com/home.htm
Information on the trading of iShares.

23-4c Venture Capital Funds

Venture capital (VC) funds use money that they receive from wealthy individuals and some institutional investors to invest in companies. They pool the money that is invested in the fund and use the proceeds to create a diversified equity portfolio. These funds typically require a large minimum investment (such as $100,000 or more) and therefore exclude small investors. A fund charges investors fees for managing the fund, such as 1 to 2 percent of the dollar value of its portfolio per year. Unlike mutual funds, VC funds typically invest in privately held firms rather than publicly traded firms, so their investments are not liquid. They invest in young, growing firms that need equity funding but are not ready or willing to go public. They may invest in businesses that are just being created, that have existed for only a few years, or that are in a later stage of growth. More than half of all VC investing is in businesses that are being created.

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Exchange-Traded Funds

The *Wall Street Journal* provides price quotations for the largest exchange-traded funds, as shown here. The symbol and closing price are shown, along with the percentage change from the previous day (CHG) and the year-to-date (YTD) percentage change.

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Exchange-Traded Portfolios | WSJ.com/ETFresearch

Largest 100 exchange-traded funds, latest session

Wednesday, February 27, 2013

ETF	Symbol	Closing Price	Chg (%)	YTD (%)
AlerianMLPETF	AMLP	17.04	0.35	6.8
GuggenheimSP500EqW	RSP	57.41	1.40	7.7
iShrBrclIntCrBd	CIU	111.00	0.03	-0.3
iShrBrclMBS BF	MBB	107.96	-0.02	-0.0
iShrBrcl1-3CrBd	CSJ	105.71	-0.03	0.2
iShrBrclShrtTreas	SHV	110.22	...	-0.0
iShrTIPSBdFd	TIP	120.74	...	-0.6
iShCoreS&P500ETF	IVV	152.63	1.22	6.6
iShCoreS&PMdCp	IJH	110.32	1.43	8.5
iShCoreS&PSmCpETF	IJR	83.62	1.11	7.1
iShCoreTotUSBdMkt	AGG	110.73	0.03	-0.3
iShrDJSelDiv	DVY	61.08	1.04	6.7
iShrDJUSRE	IYR	68.11	0.77	5.3
iSharesGold	IAU	15.53	-1.08	-4.6
iShrIBoxxFd	LQD	120.29	-0.03	-0.6
iShrIBoxxHYCorp	HYG	94.08	0.17	0.8
iShrJPMEmMktBd	EMB	119.28	0.06	-2.9
iShrMSCIACWI	ACWI	49.91	1.20	3.8
iShMSCIBrazilCap	EWZ	55.03	0.68	-1.6
iShrMSCICan	EWC	28.30	0.89	-0.4
iShrMSEAFE	EFA	58.28	1.27	2.5
iShrMSCIEmrgMkt	EEM	43.41	1.09	-2.1
iShrMSGer	EWG	24.74	1.56	0.2
iShrMSCIHK	EWH	20.01	1.94	3.0
iShrMSCIJpn	EWJ	10.17	-0.10	4.3
iShrMSCIPac	EPP	49.66	1.33	5.3
iShMSCISouthKorea	EWY	62.18	1.42	-1.8
iShrRu1000G	IWF	69.11	1.20	5.5
iShrRu1000	IWB	84.51	1.31	6.8
iShrRu1000V	IWD	78.62	1.39	8.0
iShrRu2000G	IWO	102.46	1.13	7.5
iShrRu2000	IWM	90.31	1.05	7.1
iShrRu2000V	IWN	80.74	0.97	6.9
iShrRu3000	IWV	90.37	1.28	6.7
iShrRuMid	IWR	122.42	1.47	8.2
iShrRuMidVlu	IWS	54.88	1.42	9.2
iShrSP100	OEF	68.74	1.21	6.3
iShrSP400G	IJK	122.96	1.62	7.5
iShrSP500G	IVW	79.84	1.10	5.4
iShrSP500V	IVE	71.66	1.40	7.9
iShrSPUSPref	PFF	40.25	0.10	1.6
iShsSPNtlAMTMunFd	MUB	111.81	0.18	1.1
iShrSilverTr	SLV	28.01	-1.41	-4.6
iShrBrcl1-3	SHY	84.47	...	0.1
iShrBrcl7-10	IEF	107.01	-0.05	-0.4
iShrBrcl20+	TLT	118.29	-0.30	-2.4
iShrFTSEChina25	FXI	38.47	0.92	-4.9
iShrRuMidGrth	IWP	67.24	1.62	7.1
JPMorgAlerian	AMJ	43.06	1.47	12.0
MktVecAgBusETF	MOO	54.18	1.33	2.7
MktVectorsBkETF	KBE	47.71	1.59	4.3
MktVectorsBiotech	BBH	58.83	1.31	10.0
MktVecGold	GDX	38.26	-2.02	-17.5
MktVectorsOilSvcs	OIH	42.93	1.90	11.1
MktVectorsPharm	PPH	42.76	1.06	7.6
MktVectorsRetail	RTH	46.50	1.29	6.1
MktVectorsSemi	SMH	35.16	1.56	8.8
PIMCOTRETF	BOND	109.55	-0.21	0.5
PwrShsDBComTr	DBC	27.25	-0.62	-1.9
PwrShr DBGoldDblLng	DGP	47.03	-2.24	-9.6
PwrShr DBGoldDblShrt	DZZ	4.91	2.08	9.8
PwrShrs QQQ	QQQ	67.24	1.02	3.2
PS SP500LoVolHiPrt	SPLV	29.69	1.06	7.3
ProShrUltra20	UBT	65.67	0.54	3.5
SPDRBarclaysHiYdBd	JNK	40.96	0.18	0.6
CnsDscrSel SPDR	XLY	50.68	1.52	6.8
ConStplSel SPDR	XLP	38.11	0.74	9.2
HlthcarSel SPDR	XLV	43.49	1.09	9.1
InduSelSctr SPDR	XLI	41.00	1.89	8.2
MatrlsSel SPDR	XLB	38.42	1.77	2.3
TechSelSctr SPDR	XLK	29.69	0.84	2.9
UtilsSelSctr SPDR	XLU	37.30	0.92	6.8
SPDR DJRIEst	RWX	41.81	1.89	1.1
SPDR DJIA Tr	DIA	140.60	1.31	7.7
SPDR EngySelSct	XLE	77.85	1.53	9.0
SPDR FnclSelSct	XLF	17.62	1.56	7.5
SPDR GldTr	GLD	154.57	-1.06	-4.6
SPDR S&PMdCpTr	MDY	201.00	1.45	8.2
SPDR S&P 500	SPY	151.91	1.26	6.7
SPDR S&P Div	SDY	63.32	1.13	8.9
VangdDivApp	VIG	63.96	1.22	7.4
VanguardFTSEEmgMkt	VWO	43.72	0.99	-1.8
VangdAllWldxUS	VEU	46.27	1.28	1.1
VangdGrowth	VUG	75.12	1.24	5.5
VangdHiDivYld	VYM	53.33	1.18	8.0
Vngdinter-Term	BIV	87.85	-0.02	-0.5
VangIntrCorpBd	VCIT	87.37	0.05	-0.3
VangdLgCap	VV	69.56	1.28	6.8
VanguardMSCIEAFE	VEA	36.18	1.26	2.7
VanguardMSCIEuro	VGK	49.46	1.50	1.3
VangdMdCap	VO	88.92	1.61	7.9
VangdReit	VNQ	69.16	0.73	5.1
VanguardS&P500	VOO	69.55	1.25	6.7
VangdShrtTrm	BSV	81.01	0.01	0.0
VangShrtCorpBd	VCSH	80.51	0.09	0.2
VangdSmCap	VB	87.09	1.28	7.7
VangdTtlBndMkt	BND	83.69	-0.02	-0.4
VangdTtlStock	VTI	78.31	1.23	6.9
VangdValue	VTV	63.54	1.32	8.1
WisdmTrEmrgMktEqty	DEM	55.75	0.74	-2.5

Venture capital funds tend to focus on technology firms, which have the potential for high returns but also exhibit a high level of risk. They receive numerous business proposals from businesses that need funding but invest in less than 1 percent of all the businesses that submit proposals. Sequoia Capital and Menlo Ventures are examples of popular VC funds.

VC fund managers typically have some experience in running a business. When a VC fund provides equity funding, it becomes a partial owner and may expect to have some control (such as a seat on the board of directors) over the business. Thus, VC fund managers may also be advisers to the business. Because VC funds commonly invest in new risky business ventures, a high percentage of their ventures fail. Even with a high failure rate, however, a fund can still perform well because some of its ventures may be major success stories. Many businesses that ultimately became famous, including Apple, Microsoft, and Oracle Corporation, were partially supported with venture capital in their earlier years.

A VC fund typically plans to exit from its original investment in a business within about four to seven years. If the business goes public, the fund commonly can sell its stake (shares) in the secondary market between 6 and 24 months after the initial public offering (IPO). More than half of businesses that go public are partially backed by VC funds before the IPO. Many businesses backed by venture capital never become large enough to go public. They are typically acquired by other firms, and the VC funds receive payment for their stake in the business.

23-4d Private Equity Funds

Private equity funds pool money provided by individual and institutional investors and buy majority (or entire) stakes in businesses. Such a fund is usually created as a limited liability partnership, and the general partners develop a business plan for investing in businesses and managing the businesses that they acquire. They promote their business plan to attract funds from outside investors, who become limited partners of the fund. Private equity funds appeal to institutional investors such as pension funds and insurance companies because they have the potential to earn very high returns. They also appeal to university endowments and individuals who can afford to invest $1 million or more.

A private equity fund is typically closed to outside investors once it has reached its funding goal. The fund may be opened again to obtain more funding if it develops new plans for investing additional money. The fund managers commonly distribute 80 percent of the profits from their investments to their investors and retain 20 percent for themselves.

When a private equity fund purchases a business, it assumes control and is able to restructure the business in a manner that will improve its performance. These funds usually purchase private businesses, but sometimes they acquire public companies. They commonly purchase businesses that are struggling and have potential to improve. Thus, a private equity fund may purchase a business at a low price, restructure its operations to improve it, and sell the business for a much higher price than it paid. Examples of businesses purchased by private equity funds include Dunkin' Donuts, Hertz, La Quinta, and Neiman Marcus.

Among the most popular private equity funds are Blackstone, Permira, Apollo Investment, Providence Equity, Carlyle Group, Kohlberg Kravis Roberts (KKR), and Texas Pacific Group. Each of these private equity funds has more than $10 billion in assets. Some major private equity funds are owned by commercial banks. Examples include Credit Suisse Private Equity and Barclays Private Equity. The United States has the

largest market for private equity, followed by the United Kingdom, but private equity investments are increasing rapidly throughout Europe and Asia.

The Market for Private Equity Businesses · The market for private businesses is not as efficient as the market for publicly traded stocks. Information about private businesses is very limited, so private equity fund managers may see opportunities to buy undervalued businesses. The potential to capitalize on inefficiencies in this market has attracted much more investment in private equity and has led to the creation of many new private equity funds.

Although private equity funds in aggregate raise more than $500 billion per year, these funds also commonly restructure the businesses they buy to rely on more debt financing. This enables them to use less equity per deal and to spread their investments across more deals. It also results in a higher degree of financial leverage for the businesses in which they invest. Thus, the funds can generate a higher rate of return on their equity investment from a given level of business profit, but the increased leverage increases the risk that the business will be unable to repay the debt.

A potential problem is that the large inflow of money into private equity funds could result in too much money chasing too few deals. The intense competition could cause some private equity funds to pay too much for some acquisitions in order to outbid competitors. This may result in a winner's curse, meaning that the winning bidders get the target firms but have paid too much money for them. It is more difficult for private equity firms to acquire undervalued firms when there is intense competition with other bidders.

WEB

www.sec.gov/answers/hedge.htm
Provides information on hedge funds.

23-4e Hedge Funds

Hedge funds sell shares to wealthy individuals and financial institutions and use the proceeds to invest in securities. They differ from open-end mutual funds in several ways. First, they require a much larger initial investment (such as $1 million), whereas mutual funds typically allow a minimum investment in the range of $250 to $2,500. Second, many hedge funds are not "open" in the sense that they may not always accept additional investments or accommodate redemption requests unless advance notice is provided. Some hedge funds permit investors to withdraw their investments but require advance notice of 30 days or more. Third, hedge funds have been subject to minimal regulation. They provide very limited information to prospective investors. Fourth, hedge funds invest in a wide variety of investments to achieve high returns. Consequently, they tend to take more risk than mutual funds. Although some hedge funds have performed well, many have failed.

Most hedge funds are organized as limited partnerships. There are at least 9,000 hedge funds, with a combined market value of about $2 trillion. The investment strategies used by hedge funds include investing in derivative securities and selling stocks short. In recent years, some hedge funds have purchased businesses that they manage, similar to private equity funds. They either oversee or replace managers to improve the performance of the business with the goal of ultimately selling the business for a much higher price than they paid. Some hedge funds purchase distressed assets of bankrupt firms, similar to a vulture fund.

Use of Financial Leverage Hedge funds commonly use borrowed funds to complement the equity that they receive and invest. This use of financial leverage allows them to make more investments with a given amount of equity and can magnify the returns.

EXAMPLE

Durham Hedge Fund uses $3 of borrowed funds for every $1 of equity that it invests. It can obtain $4 of assets for each $1 of equity that it invests. If its investment results in a positive 20 percent return on assets (ROA), this represents a return on its equity (ROE) investment of

$$\begin{aligned}\text{ROE} &= \text{ROA} \times (\text{Assets/Equity}) \\ &= 20\% \times 4 \\ &= 80\%\end{aligned}$$

If Durham Hedge Fund used only equity (no borrowed funds) to invest in assets, its return on equity would have been only 20 percent, the same as its return on assets. The financial leverage in this example allowed the hedge fund to magnify its returns to investors by four times the return on assets. ●

Financial leverage can also magnify negative returns (losses) and therefore increases the risk to investors.

EXAMPLE

Consider the previous example in which Durham Hedge Fund used $3 of borrowed funds for every $1 of equity that it invests. But now assume that its investment results in a negative 20 percent return on the assets. This represents a return on its equity investment of

$$\begin{aligned}\text{ROE} &= \text{ROA} \times (\text{Assets/Equity}) \\ &= -20\% \times 4 \\ &= -80\%\end{aligned}$$

If this hedge fund used only equity (no borrowed funds) to invest in assets, its loss would have been only 20 percent. ●

Hedge Fund Fees Hedge funds charge a management fee of between 1 and 2 percent of the investment per year. In addition, they charge an incentive fee that is based on the return of the fund. The typical incentive fee is 20 percent of the return.

EXAMPLE

Consider a hedge fund that charges a management fee of 2 percent and an incentive fee of 20 percent of the annual return. In the most recent year, the fund earned a return of 15 percent. The investors in this fund would have paid an incentive fee of 3 percent (computed as 20 percent of the 15 percent return) along with a 2 percent management fee, or a total fee of 5 percent of their total investment. Considering that some index mutual funds have a very small management fee and no incentive fee, this hedge fund would have been a better investment only if its performance exceeded that of index funds by about 5 percent in that year. ●

Financial Problems Experienced by LTCM One of the best-known hedge funds was Long-Term Capital Management (LTCM), which was created in 1994 and managed by a group of partners who had a very strong track record.

Long-Term Capital Management relied heavily on financial leverage to boost its returns. By 1998, LTCM had about $5 billion in equity and $125 billion in debt to support its $130 billion portfolio, a ratio of $25 of debt for every dollar of equity. Furthermore, some of its investments were in financial derivative positions that magnify returns beyond the level of the underlying securities. In August 1998, Russia defaulted on some of its bonds, which aroused general concern about bond credit risk throughout the world. At the time, LTCM had investments in relatively risky bonds and lost more than $2 billion, or about 40 percent of its total equity. After accounting for the loss, its existing debt of $125 billion was about 50 times its remaining equity. On September 23, 1998, the Federal Reserve Bank of New York organized a rescue of LTCM by 14 large commercial banks and securities firms. These firms provided a capital infusion of $3.6 billion, which gave them a 90 percent stake in LTCM. The rescue plan was intended to prevent

LTCM from defaulting on all of its derivative contract positions, which could have caused the counterparties of those positions to lose billions of dollars. Nevertheless, some critics suggest that LTCM was given preferential treatment because it was too big to fail.

Performance of Hedge Funds during the Credit Crisis Some hedge funds failed during the credit crisis in 2008 because they had invested heavily in mortgage-related securities just before subprime mortgage values collapsed. Their losses, which were magnified because of their use of financial leverage, wiped out all of their equity. Some hedge funds that used excessive borrowing received margin calls from their lenders when the values of their investments declined during the credit crisis. They had to sell some investments such as mortgage-backed securities and stocks in order to obtain cash to post more collateral. This caused additional downward pressure on the prices of these securities during the credit crisis.

Short Selling by Hedge Funds One reason for the success of some hedge funds is that they can take a very large short position (selling stocks that they do not own) on overvalued stocks. In some cases, firms have issued misleading financial statements, causing their stock prices to be higher than their actual earnings justified. Hedge funds thoroughly investigate such firms, because they can earn very large returns by shorting the stocks of these firms before other investors (and various regulators or credit agencies that attempt to detect financial fraud) recognize that the financial statements are misleading. For example, some hedge funds took large short positions in the stocks of Enron, WorldCom, and Krispy Kreme while their stocks were highly valued. Once the media reported that the financial statements of these firms were questionable, the prices of these stocks declined, and the hedge funds closed out their positions.

During the credit crisis in 2008, hedge funds were accused of making market conditions worse by taking short positions in some of the financial institutions that held subprime mortgages or other mortgage-related securities. The SEC imposed temporary restrictions on short sales of stocks of financial institutions that were highly exposed to subprime mortgages. The hedge funds would likely justify their short sale strategies by arguing that the financial institutions with subprime mortgages were overvalued because they had not been fully transparent about their exposure. To the extent that the short selling actions of the hedge funds lower the stock price toward its proper value, these actions make the market more efficient.

Madoff Fund Scandal Bernard Madoff managed a large and well-respected hedge fund that included various institutions, charities, and wealthy individuals among its investors. The fund reportedly earned favorable returns every year. When some investors wanted to cash out of their investments in December 2008, there was no money available for them. Madoff admitted that he had been periodically using money from new investors to pay off investors who wanted to cash out of the fund. The potential losses to investors were estimated to be as high as $50 billion, making this possibly the biggest financial scandal in U.S. history.

One major lesson from this scandal is that hedge funds deserve closer scrutiny from regulators than they have received in the past. The SEC was alerted several times over the previous nine years to possible irregularities in the Madoff fund, but it failed to detect the fraud.

Hedge Funds of Funds Since the minimum investment in some hedge funds may be $1 million or more, most small investors are unable to invest in them. However, some

"hedge funds of funds" have been created to pool smaller investments by individuals and invest in hedge funds. Thus, investors who invest in a hedge fund of funds are essentially owners of a diversified set of hedge funds. The typical minimum investment to invest in a hedge fund of funds is between $25,000 and $100,000. The sponsor of a fund of funds has a portfolio manager who decides how to allocate the money, and the costs incurred from that management are charged to investors. In addition, the investment in any particular hedge funds is subject to the normal fees charged by those funds. Thus, investors in a hedge fund of funds essentially pay for two layers of fees resulting from the management of their money.

Regulatory Reform of Hedge Funds In July 2010, the Financial Reform Act was implemented; it contained many provisions that were designed to stabilize the financial system. The act mandates that hedge funds managing more than $100 million are required to register with the Securities and Exchange Commission as investment advisors. These hedge funds must also disclose financial data that can be used by the Financial Stability Oversight Council (created by the Financial Reform Act) in order to assess systemic risk in the financial system. The act also prevents commercial banks from investing more than 3 percent of their capital in hedge fund institutions, private equity funds, or real estate funds.

23-4f Real Estate Investment Trusts

A real estate investment trust (REIT) (pronounced "reet") is a closed-end fund that invests in real estate or mortgages. Like other mutual funds, REITs allow small investors to participate with a low minimum investment. The funds are pooled to invest in mortgages and in commercial real estate. REITs generate income for shareholders by passing through rents on real estate or interest payments on mortgages. Most existing REITs can be sold on stock exchanges, so investors can sell them at any time. The composition of a REIT is determined by its portfolio manager, who is presumed to have expertise in real estate investments.

Real estate investment trusts can be classified as equity REITs, which invest directly in properties, or mortgage REITs, which invest in mortgage and construction loans. A third type of REIT, called a hybrid, invests in both properties and mortgages.

Equity REITs are sometimes purchased to hedge against inflation, as rents and property values tend to rise with inflation. Their performance varies according to the perceived future value of the real estate held in each portfolio. Real estate investment trusts that have concentrated in potential high-growth properties are expected to generate a higher return than those with a more nationally diversified portfolio. However, they are also susceptible to more risk if the specific locations experience slow growth.

Because mortgage REITs essentially represent a fixed-income portfolio, their market value will be influenced by interest rate movements. As interest rates rise, the market value of mortgages declines, and therefore the demand for mortgage REITs declines. If interest rates are expected to decrease, mortgage REITs become more attractive. Mortgage REITs are also influenced by credit risk since the mortgages are subject to possible default.

Impact of Credit Crisis on REITs During the credit crisis in the 2008–2009 period, many mortgages experienced late payments or default. Consequently, mortgage REITs experienced losses during that period. In particular, those REITs that invested heavily in subprime mortgages suffered severe losses.

SUMMARY

- Mutual funds accommodate financing needs of corporations, the Treasury, and municipal governments by purchasing newly issued stocks and bonds in the primary market. They also frequently purchase securities in the secondary market. They enable individual investors to diversify their investments with a limited amount of funds. The more common types of mutual funds include capital appreciation funds, growth and income funds, income funds, tax-free funds, high-yield funds, international funds, global funds, asset allocation funds, and specialty funds.
- The performance of stock mutual funds is highly influenced by stock market conditions, the prevailing conditions of the sectors in which the mutual fund invests, and the management abilities of their portfolio managers. The performance of bond mutual funds is relatively strong in periods when interest rates decline and when the credit risk premium on bonds declines.
- Money market funds (MMFs) invest in short-term securities, such as commercial paper, repurchase agreements, CDs, and Treasury bills. The expected returns on MMFs are relatively low, but the risk levels are also low.
- Closed-end funds are similar to mutual funds, except that they are closed to new investors and to redemptions and their shares are traded on a stock exchange. Exchange-traded funds (ETFs) are designed to mimic particular stock indexes and are traded on a stock exchange. Venture capital (VC) funds use money that they receive from wealthy individuals and some institutional investors to invest in young, growing firms that need equity funding but are not ready or willing to go public. Private equity funds pool money provided by individual and institutional investors and buy majority (or entire) stakes in businesses. Hedge funds sell shares to wealthy individuals and financial institutions and use the proceeds to invest in securities. They are subject to minimal regulation and commonly pursue investments that can achieve high returns but are also exposed to a high degree of risk. Real estate investment trusts (REITs) are closed-end funds that invest in real estate or mortgages.

POINT COUNTER-POINT

Should Mutual Funds Be Subject to More Regulation?

Point No. Mutual funds can be monitored by their shareholders (just like many firms), and the shareholders can enforce governance.

Counter-Point Yes. Mutual funds need to be governed by regulators because they are accountable for such a large amount of money. Without regulation, there could be massive withdrawals from mutual funds when unethical behavior by managers of mutual funds is publicized.

Who Is Correct? Use the Internet to learn more about this issue and then formulate your own opinion.

QUESTIONS AND APPLICATIONS

1. **Mutual Fund Services** Explain why mutual funds are attractive to small investors. How can mutual funds generate returns to their shareholders?
2. **Open- versus Closed-End Funds** How do open-end mutual funds differ from closed-end funds?
3. **Load versus No-Load Mutual Funds** Explain the difference between load and no-load mutual funds.
4. **Use of Funds** Like mutual funds, commercial banks and stock-owned savings institutions sell shares, but the proceeds received by mutual funds are used in a different way. Explain.
5. **Risk of Treasury Bond Funds** Support or refute the following statement: Investors can avoid all types of risk by purchasing a mutual fund that contains only Treasury bonds.

6. Fund Selection Describe the ideal mutual fund for investors who wish to generate tax-free income and also maintain a low degree of interest rate risk.

7. Exposure to Exchange Rate Movements Explain how changing foreign currency values can affect the performance of international mutual funds.

8. Reform of Hedge Funds Explain how the Financial Reform Act of 2010 applies to hedge funds.

9. Tax Effects on Mutual Funds Explain how the income generated by a mutual fund is taxed when the fund distributes at least 90 percent of its taxable income to shareholders.

10. Performance According to research, have mutual funds outperformed the market? Explain. Would mutual funds be attractive to some investors even if they are not expected to outperform the market? Explain.

11. Money Market Funds How do money market funds differ from other types of mutual funds in terms of how they use the money invested by shareholders? Which security do MMFs invest in most often? How can an MMF accommodate shareholders who wish to sell their shares when the amount of proceeds received from selling new shares is less than the amount needed?

12. Risk of Money Market Funds Explain the relative risk of the various types of securities in which a money market fund may invest.

13. Interest Rate Risk of Funds Is the value of a money market fund or a bond fund more susceptible to rising interest rates? Explain.

14. Diversification among Mutual Funds Explain why diversification across different types of mutual funds is highly recommended.

15. Impact of Credit Crisis on Hedge Funds Explain why some hedge funds failed as a result of the credit crisis.

16. REITs Explain the difference between equity REITs and mortgage REITs. Which type would likely be a better hedge against high inflation? Why?

Advanced Questions

17. Comparing Management of Open- versus Closed-End Funds Compare the management of a closed-end fund with that of an open-end fund. Given the differences in the funds' characteristics, explain why the management of liquidity is different in the open-end fund as compared with the closed-end fund. Assume that the funds are the same size and have the same goal to invest in stocks and to earn a very high return. Which portfolio manager do you think will achieve a larger increase in the fund's net asset value? Explain.

18. Selecting a Type of Mutual Fund Consider the prevailing conditions that could affect the demand for stocks, including inflation, the economy, the budget deficit, the Fed's monetary policy, political conditions, and the general mood of investors. Based on current conditions, recommend a specific type of stock mutual fund that you think would perform well. Offer some logic to support your recommendation.

19. Comparing Hedge Funds and Mutual Funds Explain why hedge funds may be able to achieve higher returns for their investors than mutual funds. Explain why hedge funds and mutual funds may have different risks. When the market is overvalued, why might hedge funds be better able to capitalize on the excessive market optimism than mutual funds?

20. How Private Equity Funds Can Improve Business Conditions Describe private equity funds. How can they improve business conditions? Money that individual and institutional investors previously invested in stocks is now being invested in private equity funds. Explain why this should result in improved business conditions.

21. Source of Mutual Fund versus Private Equity Fund Returns Equity mutual funds and private equity funds generate returns for their investors in different ways. Explain this difference. Which type of fund do you think would be better able to capitalize on a weak, publicly traded firm that has ignored all forms of shareholder activism?

22. Impact of Private Equity Funds on Market Efficiency In recent years, private equity funds have grown substantially. Will the creation of private equity funds increase the semistrong form of market efficiency in the stock market? Explain.

Interpreting Financial News

Interpret the following comments made by Wall Street analysts and portfolio managers.

a. "Just because a mutual fund earned a 20 percent return in one year, that does not mean that investors should rush into it. The fund's performance must be market adjusted."

b. "An international mutual fund's performance is subject to conditions beyond the fund manager's control."

c. "Small mutual funds will need to merge to compete with the major players in terms of efficiency."

Managing in Financial Markets

Investing in Mutual Funds As an individual investor, you are attempting to invest in a well-diversified portfolio of mutual funds so that you will be somewhat insulated from any type of economic shock that may occur.

a. An investment adviser recommends that you buy four different U.S. growth stock funds. Since these funds contain over 400 different U.S. stocks, the adviser says that you will be well insulated from any economic shocks. Do you agree? Explain.

b. A second investment adviser recommends that you invest in four different mutual funds that are focused on different countries in Europe. The adviser says that you will be completely insulated from U.S. economic conditions and that your portfolio will therefore have low risk. Do you agree? Explain.

c. A third investment adviser recommends that you avoid exposure to the stock markets by investing in four different U.S. bond funds. The adviser says that because bonds make fixed payments, these bond funds have very low risk. Do you agree? Explain.

Flow of Funds Exercise

How Mutual Funds Facilitate the Flow of Funds

Carson Company is considering a private placement of bonds with Venus Mutual Fund.

a. Explain the interaction between Carson and Venus. How would Venus serve Carson's needs, and how would Carson serve the needs of Venus?

b. Why does Carson interact with Venus Mutual Fund instead of trying to obtain the funds directly from individuals who invested in Venus Mutual Fund?

c. Would Venus Mutual Fund serve as a better monitor of Carson Company than the individuals who provided money to the mutual fund? Explain.

Internet/Excel Exercises

1. Assess today's mutual fund performance using the website www.bloomberg.com/markets. Under "Market Data," click on "Mutual Funds." What is the best-performing mutual fund today in terms of the yield-to-date (YTD)? What is the net asset value (NAV) of this fund, and what is its YTD? What is the five-year return on this fund, and what is its YTD this year? Do you think mutual fund rankings change frequently? Why or why not?

2. Go to screen.yahoo.com/funds.html. Describe the constraints that you would impose when selecting funds. Impose those constraints on the category, past performance, ratings, and other characteristics, and then allow the screener to screen the mutual funds for you. List one or more mutual funds that satisfied your criteria.

3. Go to finance.yahoo.com, enter the symbol MVC (for the closed-end fund MVC Capital that invests in U.S. stocks), and click on "Get Quotes." Click on "5y" just below the stock price trend to review the stock price movements over the last five years. Click on "Compare" just above the graph and then select "S&P500" in order to compare the trend of MVC's price with the movements in the S&P stock index. Does it appear that MVC's performance is influenced by general stock market movements?

4. Go to finance.yahoo.com, enter the symbol DNP (for the closed-end fund DNP Select Income Fund that invests in bonds), and click on "Get Quotes." Retrieve stock price data at the beginning of the last 20 quarters. Then go to http://research.stlouisfed.org/fred2 and retrieve interest rate data at the beginning of the last 20 quarters for the three-month T-bill. Record the data on an Excel spreadsheet. Derive the quarterly return of DNP. Derive the quarterly change in the interest rate. Apply regression analysis in which the quarterly return of DNP is the dependent variable and the quarterly

change in the interest rate is the independent variable (see Appendix B for more information about using regression analysis). Is there a positive or negative relationship between the interest rate movement and the stock return of DNP? Is the relationship significant? Offer an explanation for this relationship.

WSJ Exercise

Performance of Mutual Funds

Using an issue of the *Wall Street Journal*, summarize an article that discusses the recent performance of a specific mutual fund. Has this mutual fund's performance been better or worse than the norm? What reason is given for the particular level of performance?

Online Articles with Real-World Examples

Find a recent practical article available online that describes a real-world example regarding a specific financial institution or financial market that reinforces one or more concepts covered in this chapter.

If your class has an online component, your professor may ask you to post your summary of the article there and provide a link to the article so that other students can access it. If your class is live, your professor may ask you to summarize your application of the article in class. Your professor may assign specific students to complete this assignment or may allow any students to do the assignment on a volunteer basis.

For recent online articles and real-world examples related to this chapter, consider using the following search terms (be sure to include the prevailing year as a search term to ensure that the online articles are recent):

1. [name of a specific mutual fund] AND objective
2. [name of a specific mutual fund] AND expense ratio
3. [name of a specific mutual fund] AND risk
4. [name of a specific mutual fund] AND classification
5. [name of a specific mutual fund] AND management
6. [name of a specific mutual fund] AND performance
7. [name of a specific closed-end fund] AND performance
8. [name of a specific closed-end fund] AND risk
9. [name of a specific money market fund] AND performance
10. [name of a specific exchange-traded fund] AND performance

24 Securities Operations

CHAPTER OBJECTIVES

The specific objectives of this chapter are to:

- describe the key functions of securities firms,
- describe how securities firms are regulated,
- explain the exposure of securities firms to risk,
- identify the factors that affect the valuation of securities firms, and
- explain how the credit crisis affected securities firms.

WEB

finance.yahoo.com
Search engine for information about publicly traded stocks in the United States.

Securities firms serve as important intermediaries by helping governments and firms raise funds. They also facilitate the transactions between investors in the secondary market.

24-1 Functions of Securities Firms

Securities firms perform many different functions. They engage in investment banking services such as facilitating security offerings for corporations and government agencies, the securitization of mortgages, and advisory and financing services for corporations that want to restructure their operations. Securities firms that perform the investment banking functions just listed are sometimes referred to as *investment banks*. Some securities firms also provide brokerage services or engage in proprietary trading.

Some securities firms are independent, but many of them are part of a financial conglomerate. Recently, some securities firms have become part of a bank holding company structure. Nevertheless, their securities operations are distinctly different from commercial banking operations, which is why they deserve coverage as a separate chapter. The functions of securities firms are described next.

24-1a Facilitating Stock Offerings

A securities firm acts as an intermediary between a corporation issuing securities and investors by providing the following services:

- Origination
- Underwriting
- Distribution of stock
- Advising
- Private placement of stock

Origination When a corporation decides to issue stock publicly, it may contact a securities firm. The securities firm can recommend the appropriate amount of stock to issue because it can anticipate the amount of stock that the market can likely absorb without causing a reduction in the stock price. It evaluates the corporation's financial condition to determine the appropriate price for the newly issued stock. If the corporation has issued stock to the public before, the price should be similar to the market price on its outstanding stock.

In the case of an initial public offering (IPO), there is no prevailing market price for the shares to be sold. Thus the securities firm will compare the corporation's financial

characteristics with those of other similar firms in the same industry that have stock outstanding to help determine the proper valuation of the corporation and therefore the price at which the stock should be sold.

The issuing corporation registers with the Securities and Exchange Commission (SEC). All information relevant to the security, as well as the agreement between the issuer and the securities firm, must be provided in the **registration statement**, which is intended to ensure that accurate information is disclosed by the issuing corporation. Included in the required registration information is the **prospectus**, which discloses relevant financial data on the firm and provisions applicable to the security. The prospectus can be issued only after the registration is approved, which typically takes 20 to 40 days. SEC approval does not guarantee the quality or safety of the securities to be issued; it simply acknowledges that a firm is disclosing accurate information about itself.

www.sec.gov/edgar.shtml
Identifies upcoming IPOs and the securities firms that are involved in the underwriting process.

The securities firm along with the issuing firm may meet with institutional investors who may be interested in the offering. They engage in a road show in which they travel to various cities where they meet with institutional investors to discuss the issuing firm's plans for using the funds that will be obtained from the offering.

Underwriting The original securities firm may form an **underwriting syndicate** by asking other securities firms to underwrite a portion of the stock. Each participating securities firm shares in the underwriting fees charged to the issuer. Some of the more well-known securities firms for underwriting include Bank of America's Merrill Lynch division, Goldman Sachs, and Morgan Stanley.

The term *underwrite* is sometimes wrongly interpreted to mean that the underwriting syndicate guarantees the price at which shares will be sold. However, stock offerings are normally based on a **best-efforts agreement** whereby the securities firm does not guarantee a price to the issuing corporation. In such a case, the issuing corporation bears the risk because it does not receive a guaranteed price from the securities firm on the stock to be issued.

When securities firms facilitate initial public offerings (IPOs), they attempt to price the stock high enough to satisfy the issuing firm. The higher the average price at which the shares are issued, the greater the proceeds received by the issuing firm. If the securities firms price the stock too high, however, they will not be able to place the entire issue. The reputation of the underwriting syndicate is at stake when it attempts to place the stock of the issuing firm. It knows that other corporations that may issue stock in the future will monitor its ability to place the stock.

Securities firms must also attempt to satisfy the institutional investors that may invest in the IPO. The higher the price institutional investors pay for the stock being issued, the lower the return they earn on their investment when they sell the stock. Underwriting syndicates recognize that other institutional investors monitor stock prices after offerings to determine whether the initial offer price charged by the syndicate was appropriate. If the institutional investors do not earn reasonable returns on their investment, they may not invest in future IPOs. Since securities firms rely on institutional investors when placing shares of newly issued stock, they want to maintain a good relationship with them.

Research indicates that securities firms tend to underprice IPOs. That is, institutional investors that invest at the offer price earn high returns on average if they retain the investment for a short-term period, such as three months or less. Much of the return occurs within the first few days after the IPO. Consequently, the returns to investors who purchase the shares shortly after the IPO are generally poor.

Distribution of Stock Once all agreements between the issuing firm, the originating securities firm, and other participating securities firms are complete and the registration is

approved by the SEC, the stock may be sold. The prospectus is distributed to all potential purchasers of the stock, and the issue is advertised to the public. In some cases, the issue sells within hours. If the issue does not sell as expected, the underwriting syndicate will likely have to reduce the price to complete the sale. The demand for the stock is somewhat influenced by the sales force involved in selling the stock. Some securities firms participating in a syndicate have brokerage subsidiaries that can sell stock on a retail level. Others may specialize in underwriting but still utilize a group of brokerage firms to sell the newly issued stock. The brokers earn a commission on the amount they sell but do not guarantee a specific amount of sales.

When a corporation places stock publicly, it incurs two types of **flotation costs**, or costs of placing the securities. First, it must pay fees to the underwriters who place the stock with investors. Second, it incurs **issue costs** including printing, legal, registration, and accounting expenses. Because these issue costs are not significantly affected by the size of the issue, flotation costs as a percentage of the value of securities issued are lower for larger issues.

Advising The securities firm acts as an adviser throughout the **origination** stage. Even after the stock is issued, the securities firm may continue to provide advice on the timing, amount, and terms of future financing. Included with this advice are recommendations on the appropriate type of financing (bonds, stocks, or long-term commercial loans).

Private Placements of Stock Securities firms are also hired to facilitate private placements of stock. With a **private placement** (or direct placement), an entire stock offering may be placed with a small set of institutional investors and not offered to the general public. Under the SEC's Rule 144A, firms may engage in private placements of stock without filing the extensive registration statement that is required for public placements. Consequently, the issuing firm's costs of reporting are lower than with a public placement. In addition, the underwriting services are more manageable because an underwriting syndicate may not be necessary.

Institutional investors that are willing to hold the stock for a long period of time are prime candidates for participating in a private placement. Since all the stock is held by a small set of institutional investors, there will not be an established secondary market for the stock. Thus, institutional investors may expect a higher return on the stock to compensate for the lack of liquidity.

24-1b Facilitating Bond Offerings

A securities firm's role in placing bonds is somewhat similar to its role in placing stock. The five main services of a securities firm in placing bonds are explained in turn.

Origination The securities firm may suggest a maximum amount of bonds that should be issued based on the issuer's characteristics. If the issuer already has a high level of outstanding debt, the bonds may not be well received by the market because the issuer's ability to meet the debt payments will be questionable. Consequently, the bonds will need to offer a relatively high yield, which will increase the cost of borrowing to the issuer.

Next, the coupon rate, the maturity, and other provisions are decided based on the characteristics of the issuing firm. The asking price on the bonds is determined by evaluating market prices of existing bonds that are similar in their degree of risk, term to maturity, and other provisions.

Issuers of bonds must register with the SEC. The registration statement contains information about the bonds to be issued, states the agreement between the securities

firm and the issuer, and also includes a prospectus with financial information about the issuer.

Underwriting Bonds Some issuers of bonds, particularly public utilities, may solicit competitive bids on the price of bonds from various securities firms so that they can select the firm with the highest bid. Securities firms provide several services to the issuer, however, so price is not the only consideration. Corporations typically select a securities firm based on reputation rather than competitive bids.

Bonds can often be sold in large blocks to financial institutions. In contrast, a stock issue must be segmented into smaller pieces and is more difficult to sell. The main concern of institutional investors that purchase bonds is the credit risk of the issuer, which may be easier to assess than the risk of newly issued stock.

As with stocks, the securities firm may organize an underwriting syndicate of securities firms to participate in placing the bonds. Each securities firm assumes a portion of the risk. Of course, the potential income earned by the original securities firm is reduced, too. If the securities firm is uncomfortable guaranteeing a price to the issuer, it may offer only a best-efforts agreement.

Distribution of Bonds Upon SEC approval of the registration, a prospectus is distributed to all potential purchasers of the bonds and the issue is advertised to the public. The asking price on the bonds is normally set at a level that will ensure a sale of the entire issue. The flotation costs generally range from 0.5 to 3 percent of the value of the bonds issued, which can be significantly lower than the flotation costs of issuing common or preferred stock.

Advising As with a stock placement, a securities firm that places bonds for issuers may serve as an adviser to the issuer even after the placement is completed. Most issuers of bonds will need to raise long-term funds in the future and will consider the securities firm's advice on the type of securities to issue at that time.

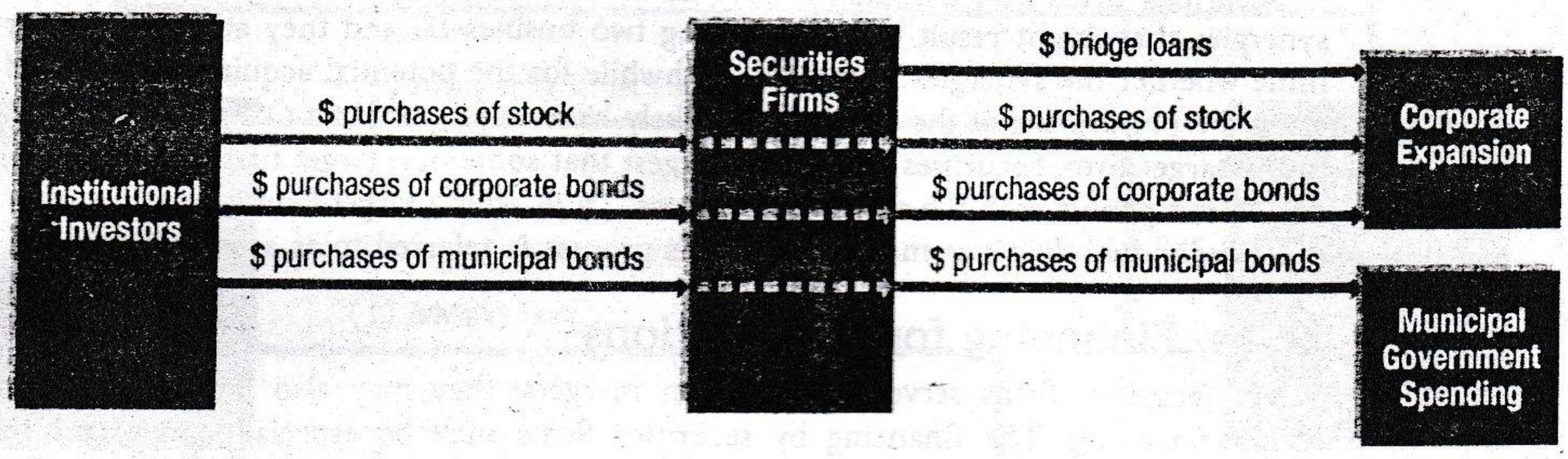
Private Placements of Bonds If an issuing corporation knows of a potential purchaser for its entire issue, it may be able to sell its securities directly without offering the bonds to the general public (or using the underwriting services of a securities firm). This private placement avoids the underwriting fee. Corporations have been increasingly using private placements. Potential purchasers of securities that are large enough to buy an entire issue include insurance companies, commercial banks, pension funds, and bond mutual funds. Securities can even be privately placed with two or more of these institutions. Private placements of bonds are more common than private placements of stocks.

The price paid for privately placed securities is determined by negotiations between the issuing corporation and the purchaser. Although the securities firm is not needed here for underwriting, it may advise the issuing corporation on the appropriate terms of the securities and identify potential purchasers.

Unlike the standardized provisions of a publicly placed issue, the provisions of a privately placed issue can be tailored to the desires of the purchaser. A possible disadvantage of a private placement is that the demand may not be as strong as for a publicly placed issue because only a fraction of the market is targeted. This could force a lower price for the bonds, resulting in a higher cost of financing for the issuing firm.

By facilitating bond offerings, securities firms serve as important financial intermediaries between corporations (and governments) and institutional investors. Exhibit 24.1 illustrates how they influence the flow of funds and help corporations and governments raise funds, thereby facilitating economic growth.

Exhibit 24.1 How Securities Firms Facilitate Economic Growth



24-1c Securitizing Mortgages

Some securities firms securitize individual mortgages by obtaining them from the financial institutions that originates them, bundling them into packages (in tranches) based on their risk level, hiring a credit rating agency to assign a rating to the packages, and selling the packages to institutional investors. This securitization process is beneficial to the mortgage originators that want to focus on origination or servicing of mortgages and not on financing them. Securitization facilitates the sale of smaller mortgage loans that could not be easily sold in the secondary market on an individual basis. It enables institutional investors such as mutual funds, pension funds, and insurance companies to invest in large bundles of mortgages that have already been assigned a risk rating. Securities firms earn a fee for serving as an intermediary between the mortgage originators and the institutional investors that purchase the packages of mortgages. They also commonly invest in some of the packages that they sold to institutional investors.

Securities firms may also package mortgages with other debt securities (such as automobile loans and credit card loans) when engaged in the securitization process. During the credit crisis, many mortgage loans and other types of loans defaulted, causing major losses to the institutional investors that purchased packages of debt securities. Some securities firms that invested in these packages of debt securities experienced large losses. Many securities firms were criticized for not understating the risk of the packages of securities that they sold. They countered that they relied on the credit rating agencies to assess the risk.

24-1d Advising Corporations

Securities firms often serve as advisers for corporations that wish to restructure their operations. They conduct a valuation of various existing and potential components of a corporation so that they can recommend how a corporation should restructure its operations.

Securities firms commonly suggest that the corporation could benefit from revising its ownership structure. It may recommend a **carve-out**, in which the corporation would sell one of its units to new shareholders through an IPO. The proceeds of the IPO go to the parent firm.

Alternatively, a securities firm may advise the corporation to spin off a unit by creating new shares representing the unit and distributing them to existing shareholders. Or a securities firm might recommend that a corporation engage in a divestiture, in which it

sells one or more of its existing divisions that suffered recent losses. In this case, the securities firm may receive a fee for advising and a separate fee for finding buyers of the divisions that are sold.

Securities firms also commonly serve as advisors on mergers. They assess potential synergies that might result from combining two businesses, and they attempt to determine whether the synergies would be worthwhile for the potential acquirer after considering the premium that the acquirer will likely have to pay to obtain controlling interest in the target firm. Securities firms may suggest that some of a target firm's divisions will not be compatible with the acquirer's business. Thus, after a target firm is acquired, some of its individual divisions may be sold. This process is referred to as **asset stripping**.

24-1e Financing for Corporations

When securities firms serve as advisor on mergers, they may also help the acquirer obtain financing. The financing by securities firms may be especially important for acquirers that pursue leveraged buyouts (LBOs). An acquirer may not be able to afford an LBO because of constraints on the amount of funds it can borrow. Securities firms can help the acquirers issue stock or bonds, as explained earlier. They may also provide a **bridge loan** that serves as temporary financing until the acquirer has access to other funds. Some securities firms may even provide equity financing, whereby they become part owner of the acquired firm.

Exhibit 24.2 illustrates how securities firms participate in an acquisition. Note how many different functions the securities firms may perform for the acquiring firms, all of which generate fees or interest.

24-1f Providing Brokerage Services

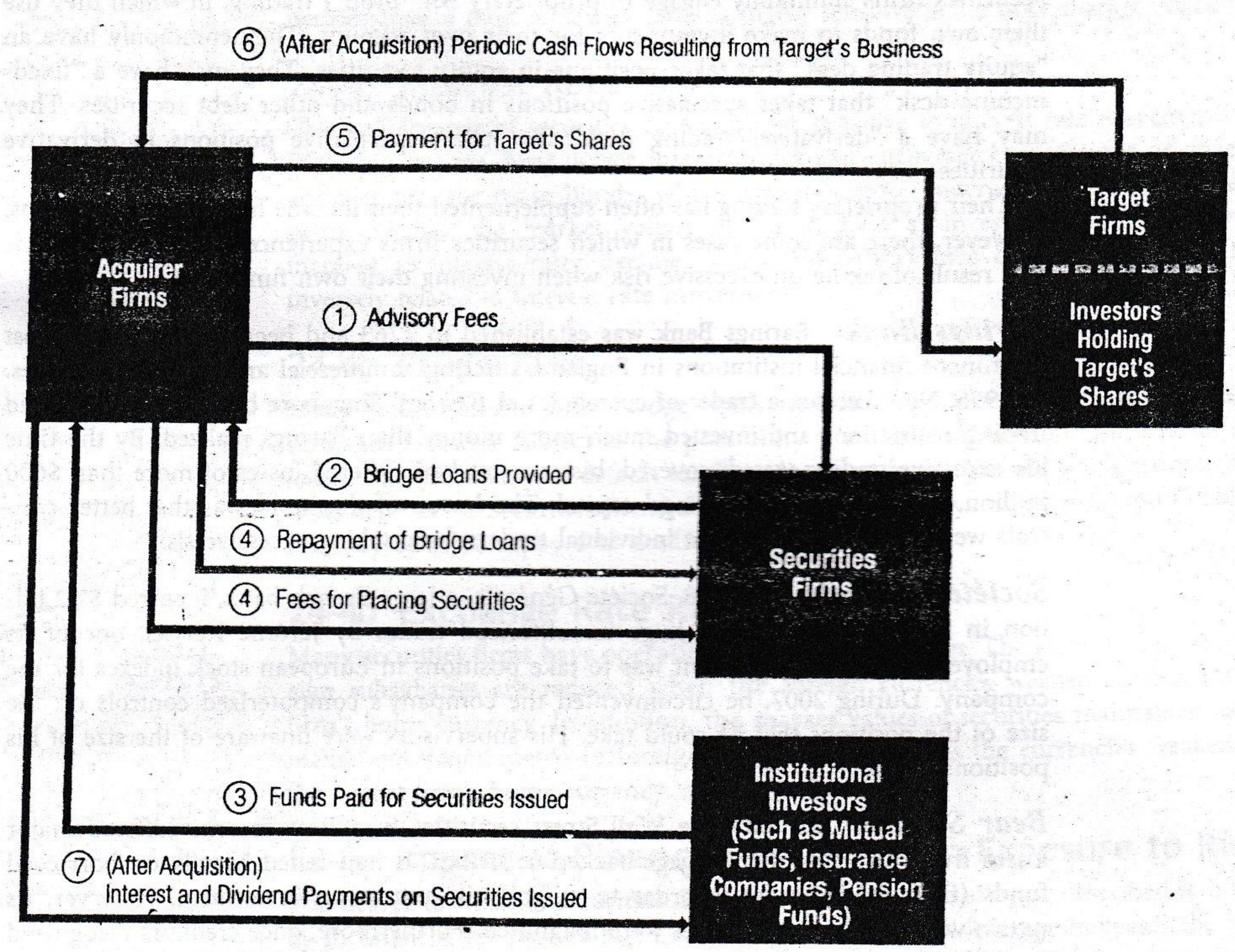
Securities firms commonly serve as brokers by executing buy or sell orders desired by their customers. They execute large orders placed by institutional investors, such as an order to purchase 100,000 shares of a specific stock. They also execute orders placed by individuals as well as short-sale transactions for their customers.

Full-Service versus Discount Brokerage Services Brokerage firms can be classified by the services they provide. **Full-service brokerage firms** provide information and personalized advice and execute orders. **Discount brokerage firms** execute orders only upon request and do not provide advice. They are often unable to maintain a long-term relationship with clients because they provide a service difficult to differentiate from competitors. Their required minimum opening balance is typically in the range of $1,000 to $3,000.

Although discount brokers still concentrate on executing stock transactions, they have expanded their services to include precious metals, options, and municipal bonds. Some also offer credit cards, cash management accounts, and website access to research on stocks for their clients.

Online Orders Many investors now place orders online rather than calling brokers. Brokerage firms have reduced their costs by implementing online order systems because the online format is less expensive than having brokers receive the orders by phone. Online trading has become very competitive, however, with numerous brokerage firms fighting for market share. Consequently, the prices charged for online orders are very low. The fee for an online order to trade 100 shares of stock is typically $20 or less for investors who have an established account with the brokerage firm.

Exhibit 24.2 Participation of Securities Firms in an Acquisition



Management of Customer Accounts Some securities firms not only execute transactions for customers but also manage the portfolios of securities owned by the customers. That is, the firm decides when to buy or sell securities owned by the customers. Securities firms commonly provide this type of service to manage the pension funds of companies, but the service may also be offered to individuals. The securities firm charges a management fee for its services, which may be expressed as an annual percentage (such as 1 percent) of the assets that are managed. The firm may also charge fees for any securities transactions that it executes on behalf of the customer.

24-1g Operating Mutual Funds

Some securities firms operate mutual funds. They may offer stock, bond, and money market funds. They may offer a family (collection) of funds, so that investors can move money between different types of funds in response to economic conditions. The securities firms hire portfolio managers to manage the mutual funds. The funds charge investors an annual fee, which covers expenses and provides income to the securities firms that operate the funds.

24-1h Proprietary Trading

Securities firms commonly engage in proprietary (or "prop") trading, in which they use their own funds to make investments for their own account. They commonly have an "equity trading desk" that takes positions in equity securities. They may have a "fixed-income desk" that takes speculative positions in bonds and other debt securities. They may have a "derivatives trading desk" that takes speculative positions in derivative securities.

Their proprietary trading has often supplemented their income from other operations. However, there are some cases in which securities firms experienced financial problems as a result of taking on excessive risk when investing their own funds.

Barings Bank Barings Bank was established in 1763 and became one of the most prominent financial institutions in England, offering commercial and securities services. In 1995, Nick Leeson, a trader of currencies at Barings' Singapore branch, circumvented trading restrictions and invested much more money than Barings realized. By the time his excessive trading was discovered, his account had suffered losses of more than $600 million, which wiped out Barings' capital. The lesson of this story was that better controls were necessary to prevent individual traders from taking excessive risk.

Société Générale In 2008, Société Générale, a large French bank, incurred $7.2 billion in trading losses due to huge unauthorized trades by Jérôme Kerviel, one of its employees. Kerviel's assignment was to take positions in European stock indexes for the company. During 2007, he circumvented the company's computerized controls on the size of the positions that he could take. His supervisors were unaware of the size of his positions.

Bear Stearns In 2008, the Wall Street securities firm Bear Stearns suffered major losses from investing in mortgage-backed securities. It had relied heavily on borrowed funds (financial leverage) in order to magnify its return on investment. However, its return was negative, so its losses were magnified. Furthermore, once creditors recognized its difficulties, they cut off their credit, and Bear Stearns suffered liquidity problems. It was ultimately saved from bankruptcy by the U.S. government, as explained later in this chapter.

Lehman Brothers Lehman Brothers, another Wall Street securities firm, also suffered financial problems due to bad investments in mortgage-backed securities and heavy reliance on borrowed funds. It filed for bankruptcy in September 2008, as explained later in this chapter.

www2.goldmansachs.com
Information on a securities firm's performance and services provided.

Underlying Cause of Investment Problems The underlying cause of the problems experienced by the four securities firms just described is the huge incentive to take risk. Many employees of securities firms have earned bonuses of more than a million dollars in one year as a result of generating high returns on investment for their securities firms. Thus they have a strong incentive to pursue investments that may offer high returns, even if the risks are high.

24-1i Summary of Services Provided

Exhibit 24.3 summarizes the services that are commonly provided by securities firms. The proportion of income derived from each type of service in any particular year varies among securities firms. Some securities firms emphasize investment banking functions such as underwriting and advising and therefore generate a higher proportion of income

Exhibit 24.3 Sources of Income for a Securities Firm

INVESTMENT BANKING SERVICES	
Underwriting	Fees from underwriting stock offerings by firms or underwriting bond offerings by firms and government agencies
Advising	Fees for providing advice to firms about: • Identifying potential targets • Valuing targets • Identifying potential acquirers • Protecting against takeovers
Restructuring	Fees for facilitating: • Mergers • Divestitures • Carve-outs • Spin-offs
BROKERAGE SERVICES	
Management fees	Fees for managing an individual's or a firm's securities portfolio
Trading commissions	Fees for executing securities trades requested by individuals or firms in the secondary market
Margin interest	Interest charged to investors who buy securities on margin
INVESTING ITS OWN FUNDS	
Investing	Profits from investing in securities

from underwriting and advising fees. Conversely, other securities firms emphasize brokerage services and therefore generate a higher proportion of their income from trading commissions.

Market conditions can also affect the proportion of income earned by a securities firm from particular services. When there are many IPOs, securities firms will generate more income from underwriting activities. When there is a high level of merger activity, securities firms generate more income from advisory services for corporate restructuring.

Some securities firms attempt to diversify their services so that they can capitalize on economies of scope and also possibly reduce their exposure if the demand for any particular service is weak. However, the demand is highly correlated across services. When market conditions are weak, the volume of IPOs, mergers, securitizations, and secondary market trades is usually low. Thus, securities firms will likely perform poorly under these conditions.

24-1j Interaction with Other Financial Institutions

When securities firms provide their financial services, they commonly interact with various types of financial institutions, as summarized in Exhibit 24.4. They offer investment advice and execute security transactions for financial institutions that maintain security portfolios. They also compete against those financial institutions that have brokerage subsidiaries. Furthermore, they compete with some commercial banks that underwrite securities and manage mutual funds. Because securities firms commonly offer some banking and insurance services and because many insurance companies and commercial banks offer securities services, it is sometimes difficult to distinguish among financial institutions.

Exhibit 24.4 Interaction between Securities Firms and Other Financial Institutions

TYPE OF FINANCIAL INSTITUTION	INTERACTION WITH SECURITIES FIRMS
Commercial banks and savings institutions	• Compete with securities firms that provide brokerage services. • Compete directly with securities firms to provide merger advisory services.
Mutual funds	• Rely on securities firms to execute trades. • Are sometimes owned by securities firms. • Purchase newly issued securities that are underwritten by securities firms.
Insurance companies	• Receive advice from securities firms on what securities to buy or sell. • Rely on securities firms to execute securities transactions. • Receive advice from securities firms on how to hedge against interest rate risk and market risk. • Purchase stocks and bonds that are underwritten by securities firms. • May compete directly with securities firms to sell mutual funds to investors. • May provide financing for LBOs to securities firms. • May acquire or merge with a securities firm in order to offer more diversified services.
Pension funds	• Receive advice from securities firms on what securities to buy or sell. • Rely on securities firms to execute securities transactions. • Receive advice from securities firms on how to hedge against interest rate risk and market risk. • Purchase newly issued securities that are underwritten by securities firms.

24-1k Participation in Financial Markets

When securities firms provide financial services, they participate in all types of financial markets, as summarized in Exhibit 24.5. They place newly issued securities and execute trades of existing securities for their clients in money markets, mortgage markets, bond markets, and stock markets. In addition, their proprietary trading activity exposes them to fluctuations in stock markets and bond markets.

24-1l Conflicts of Interest from Participation

When securities firms serve as brokers or as advisors on financial transactions, they are subject to some potential conflicts of interest. In the brokerage business, their fees are likely to be dependent on the amount of shares traded, which means they would benefit more from recommending that investors change their investments often rather than retain their investments over a long-term period. In the merger advisory business, they would benefit more from advising companies to engage in mergers than they would from advising companies to avoid mergers, because many of their fees will only be charged if a merger occurs.

Since securities firms tend to earn larger profits when they execute transactions for their clients, they commonly offer incentives to their employees that are based on (or influenced by) the volume of transactions executed. Consequently, employees have an incentive to generate a large number of transactions even if that does not serve the best interests of the client. There are some cases in which investor accounts managed by securities firms have an unusually large number of transactions. There are also cases in which securities firms have promoted specific securities to their clients while taking the opposite position (the counter-party) of those transactions. Some blatant cases of unethical behavior have been highly publicized, in which a securities firm was promoting a specific security while referring to that security as junk among employees and attempting to dump its holdings of that security.

Exhibit 24.5 Participation of Securities Firms in Financial Markets

TYPE OF FINANCIAL MARKET	PARTICIPATION BY SECURITIES FIRMS
Money markets	• Some securities firms have created money market mutual funds, which invest in money market securities. • Securities firms underwrite commercial paper and purchase short-term securities for their own investment portfolios.
Bond markets	• Securities firms underwrite bonds in the primary market, advise clients on bonds to purchase or sell, and serve as brokers for bond transactions in the secondary market. • Some bond mutual funds have been created by securities firms. • Securities firms facilitate mergers, acquisitions, and LBOs by placing bonds for their clients. • Securities firms purchase bonds for their own investment portfolios.
Mortgage markets	• Securities firms underwrite securities that are backed by mortgages for various financial institutions.
Stock markets	• Securities firms underwrite stocks in the primary market, advise clients on what stocks to purchase or sell, and serve as brokers for stock transactions in the secondary market. • Securities firms purchase stocks for their own investment portfolios.
Futures markets	• Securities firms advise large financial institutions on how to hedge their portfolios with financial futures contracts. • Securities firms serve as brokers for financial futures transactions.
Options markets	• Securities firms advise large financial institutions on how to hedge portfolios with options contracts. • Securities firms serve as brokers for options transactions.
Swap markets	• Some securities firms engage in interest rate swaps to reduce their exposure to interest rate risk. • Many securities firms serve as financial intermediaries in swap markets.

Cases like these are sometimes triggered by a few employees and do not necessarily reflect the culture of the securities firm. However, a securities firm can influence the behavior of its employees by the incentives it uses to set their compensation. Providing employees with a code of principles of ethical behavior is not sufficient for ensuring ethical conduct if the incentives to increase compensation are strictly based on maximizing the number of transactions that are executed. In most publicized cases of unethical behavior, the actions of the employees at securities firms are motivated by the compensation they received due to those actions.

Securities firms that compensate their employees based on criteria such as client assessment of their employee services might ensure that employees serve the client's needs instead of themselves. In the long run, the securities firms that satisfy the vast majority of their clients should be more capable of growing their reputation and their business.

24-1m Expanding Functions Internationally

GLOBAL ASPECTS

Most large securities firms have expanded their functions internationally, which offers several possible advantages. First, their international presence allows them to place securities in international markets for corporations or governments. Second, some corporations that are heavily involved with international mergers and acquisitions prefer advice from securities firms that have subsidiaries in all potential markets. Third, institutional

investors that invest in foreign securities prefer securities firms that can easily handle such transactions.

Growth in International Joint Ventures In recent years, securities firms have expanded their international business by engaging in joint ventures with foreign securities firms. In this way, they penetrate foreign markets but have a limited stake in each project. Many securities firms have also increased their global presence by facilitating privatizations of firms in foreign markets such as Latin America and Eastern Europe.

Growth in International Securities Transactions The growth in international securities transactions has created more business for the larger securities firms. For example, many stock offerings are now conducted across numerous countries as some corporations attempt to achieve global name recognition. In addition, an international stock offering can avoid the downward pressure on the stock's price that might occur if the entire issue is sold in the domestic country. Large securities firms facilitate international stock offerings by creating an international syndicate to place the securities in various countries. Those securities firms that have established a global presence receive most of the requests for international stock offerings.

www.seclaw.com/secrules.htm
Federal rules and regulations related to securities firms.

24-2 Regulation of Securities Firms

Securities firms are subject to a wide variety of regulations. The SEC plays a key role in regulation by enforcing financial disclosure laws that attempt to ensure that investors who buy or sell securities have access to financial information. These laws give the SEC the power to require publicly traded companies to provide sufficient financial information to existing or prospective investors. However, securities firms have generally been subject to very limited regulation in terms of how they use their funds.

24-2a Stock Exchange Regulations

Stock exchanges impose regulations on securities firms to prevent unfair or illegal practices, ensure orderly trading, and address customer complaints. Stock exchanges have regulatory divisions, and the Nasdaq market is regulated by the National Association of Securities Dealers (NASD). Both the exchanges and the NASD have surveillance departments that monitor trading patterns and behavior by market-makers and floor traders. They also have enforcement divisions that investigate possible violations and can take disciplinary action. They can take legal action as well and sometimes work with the SEC to correct cases of market trading abuse.

The SEC tends to establish general guidelines that can affect trading on security exchanges, but the day-to-day regulation of exchange trading is the responsibility of the exchange. Regulation of trading behavior is necessary to ensure that investors who place orders are properly accommodated. This can establish credibility within the systems used to execute securities transactions. In addition to the SEC, NASD, and exchanges, the Federal Reserve Board has some regulatory influence because it determines the credit limits (margin requirements) on securities purchased.

Insurance on Cash and Securities Deposited at Brokerage Firms The **Securities Investor Protection Corporation (SIPC)** offers insurance on cash and securities deposited at brokerage firms and can liquidate failing brokerage firms. The insurance limit is $500,000, including $100,000 against claims on cash. The SIPC uses premiums assessed on brokers that are registered with the SEC to maintain its insurance fund. In addition to its insurance fund, the SIPC has a $500 million revolving line of credit

with a group of banks and can borrow up to $1 billion from the SEC. Because the SIPC boosts investor confidence in the securities industry, economic efficiency is increased, so market concerns are less likely to cause a run on deposits of cash and securities at securities firms.

24-2b Regulatory Events That Affected Securities Firms

Several regulatory events that were mentioned in previous chapters had a direct or indirect effect on securities firms. Here is a summary of recent regulatory events that are related to securities firms.

Financial Services Modernization Act In the 1990s, financial institutions focusing on different types of financial services found numerous loopholes in regulations. To clarify the situation, Congress enacted the Financial Services Modernization Act of 1999, which allowed banking, securities activities, and insurance to be consolidated. As a result, financial institutions no longer need to search for loopholes. Specifically, the act provides for a special holding company structure that enables a financial holding company to own subsidiaries that focus on various financial services. Firms that adopt this structure are regulated by the Federal Reserve. Capital requirements for the bank subsidiaries are imposed by bank regulators. Capital requirements for the insurance subsidiaries are subject to state insurance regulators.

The Financial Services Modernization Act resulted in the creation of more financial conglomerates that include securities firms. One of the key benefits to securities firms in a financial conglomerate is cross-listing. When individuals use brokerage services of a securities firm, that firm may steer them to do their banking with the affiliated commercial bank or to obtain a mortgage with the affiliated savings institution. When firms use investment banking services of a securities firm, that firm may steer them to do their banking with the affiliated commercial bank. The other types of financial institutions that form the conglomerate can reciprocate by steering their customers toward the securities firm. Thus, the bundling of financial services can generate more business for each type of financial institution that is part of the financial conglomerate. However, just as a financial conglomerate can increase market share by pulling business away from other financial institutions, it may lose market share when other financial conglomerates use their bundling of financial services to attract customers.

The Financial Services Modernization Act of 1999 created a more competitive environment for securities firms by allowing commercial banks, securities firms, and insurance companies to merge. It removed limitations on the degree to which banks could offer securities services, which resulted in more intense competition from the banks. Some banks acquired securities firms so that they could provide a wide range of securities services to their existing customer base.

Regulation FD In October 2000, the SEC enacted Regulation Fair Disclosure (FD), which requires firms to disclose any significant information simultaneously to all market participants. This rule was partially intended to prevent firms from leaking information to analysts who work for securities firms. Before Regulation FD, a firm's chief financial officer could have legally leaked information to an analyst about the firm's earnings or other relevant financial details before announcing this information to the public. Some analysts capitalized on the information by disclosing it to their key clients. Small investors were left out of the loop and were at a competitive disadvantage.

As a result of Regulation FD, firms more frequently provide their information in the form of news releases or conference calls rather than leaking it to a few analysts. Those

analysts who relied on inside information when providing their insight to clients have lost their competitive advantage, while analysts who relied on their own analysis rather than information leaks have gained a competitive edge.

Regulation of Analyst Ratings In the 2001–2002 period, the process by which analysts rated stocks was widely criticized. Firms recognize that the demand for their stock may be partially dictated by the rating assigned by an analyst. When they need underwriting or advisory services from a securities firm, they are more likely to hire a firm whose analysts rate their stock highly. Securities firms also recognize that they are more likely to attract business from a firm if they give its stock a high rating, regardless of their real opinion of the stock. In fact, some analysts were spending much of their time generating new business, and their compensation was sometimes aligned with the business they brought to the securities firm. Consequently, analysts were tempted to inflate the ratings they assigned to stocks, and the investors who relied on the ratings to make investment decisions were misled.

www.sec.gov
How the SEC monitors securities trading activity and enforces securities laws.

In 2002, in an attempt to prevent the obvious conflict of interest, the SEC implemented new rules, as summarized here.

- If a securities firm underwrites an IPO, its analysts cannot promote the stock for the first 40 days after the IPO. Thus, the price of the stock should be driven by factors other than hype provided by the underwriter's analysts in the first 40 days.
- An analyst's compensation cannot be directly aligned with the amount of business that the analyst brings to the securities firm. Analysts cannot be supervised by the investment banking department within the securities firm. This rule is intended to prevent investment bankers from pressuring analysts to provide high rankings of firms in order to attract more underwriting business from those firms.
- An analyst's rating must also divulge any recent investment banking business provided by the securities firm that assigned the rating.

Regulation of the IPO Market In the 2001–2003 period, various abuses in the IPO market were highly publicized.

- Some securities firms that served as underwriters on IPOs allocated shares to corporate executives who were considering an IPO for their own firm. Some critics viewed this process, referred to as *spinning*, as an implicit bribe to obtain the future business of the firm.
- Some securities firms that served as underwriters of IPOs encouraged institutional investors to place bids above the offer price on the first day that the shares traded as a condition for being allowed to participate in the next IPO. They also charged excessive commissions to investors in some cases when the demand for the IPO shares was well in excess of the supply.

The SEC investigated cases of abuse and imposed fines on some securities firms. In addition, it enacted rules to prevent such abuses from occurring in the future.

24-3 Valuation of a Securities Firm

Securities firms (or securities operating units that are part of a financial conglomerate) are commonly valued by their managers to monitor progress over time or by other financial institutions that are considering an acquisition. The value of a securities firm can be modeled as the present value of its future cash flows. Thus, the value of a securities firm should

change in response to changes in its expected cash flows in the future and to changes in the required rate of return by investors:

$$\Delta V = f[\underbrace{\Delta E(CF)}_{+}, \underbrace{\Delta k}_{-}]$$

24-3a Factors That Affect Cash Flows

The change in a securities firm's expected cash flows may be modeled as

$$\Delta E(CF) = f(\underbrace{\Delta \text{ECON}}_{+}, \underbrace{\Delta R_f}_{-}, \underbrace{\Delta \text{INDUS}}_{?}, \underbrace{\Delta \text{MANAB}}_{+})$$

where ECON represents economic growth, R_f represents the risk-free interest rate, INDUS represents industry conditions, and MANAB represents the abilities of the securities firm's management.

Change in Economic Growth Economic growth can enhance a securities firm's cash flows because it increases the level of income of firms and households and can increase the demand for the firm's services. Specifically, the volume of brokerage activity tends to increase when households have more income, and corporations are more likely to hire securities firms to help them raise funds for expansion when economic conditions are favorable.

Change in the Risk-Free Interest Rate A securities firm's holdings of debt securities (such as bonds) are affected by interest rate movements. If interest rates rise, the valuation of the debt holdings declines, which reduces the valuation of the security firm.

Change in Industry Conditions Securities firms can be affected by industry conditions, including regulations, technology, and competition. For example, regulatory constraints can restrict firms from offering specific banking services or set the margin limits for investors. In general, securities firms tend to prefer limited regulation so that they can pursue ventures that offer the potential for high returns. However, some securities firms such as Lehman Brothers took excessive risks, which led to failure.

Change in Management Abilities A securities firm has control over the composition of its managers and its organizational structure. Its managers can attempt to make internal decisions that will capitalize on the external forces (economic growth, interest rates, regulatory constraints) that the firm cannot control. It needs skillful management to create new financial services that may complement the brokerage services offered to individuals. Skillful management is also needed to create new products (such as specialized derivative instruments) that will be used by firms.

24-3b Factors That Affect the Required Rate of Return

The required rate of return by investors who invest in a securities firm can be modeled as

$$\Delta k = f(\underbrace{\Delta R_f}_{+}, \underbrace{\Delta RP}_{+})$$

where ΔR_f represents a change in the risk-free interest rate and ΔRP represents a change in the risk premium. The risk-free interest rate is normally expected to be positively related to inflation, economic growth, and the budget deficit level but inversely related to money supply growth (assuming such growth does not cause inflation). The risk

premium on a securities firm is inversely related to economic growth and the company's management skills. The management of some securities firms use compensation incentives that are focused on increasing return on investment without much emphasis on controlling risk.

Exhibit 24.6 provides a framework for valuing a securities firm based on the preceding discussion. In general, the value of a securities firm is favorably affected by strong economic growth, a reduction in interest rates, and strong management capabilities.

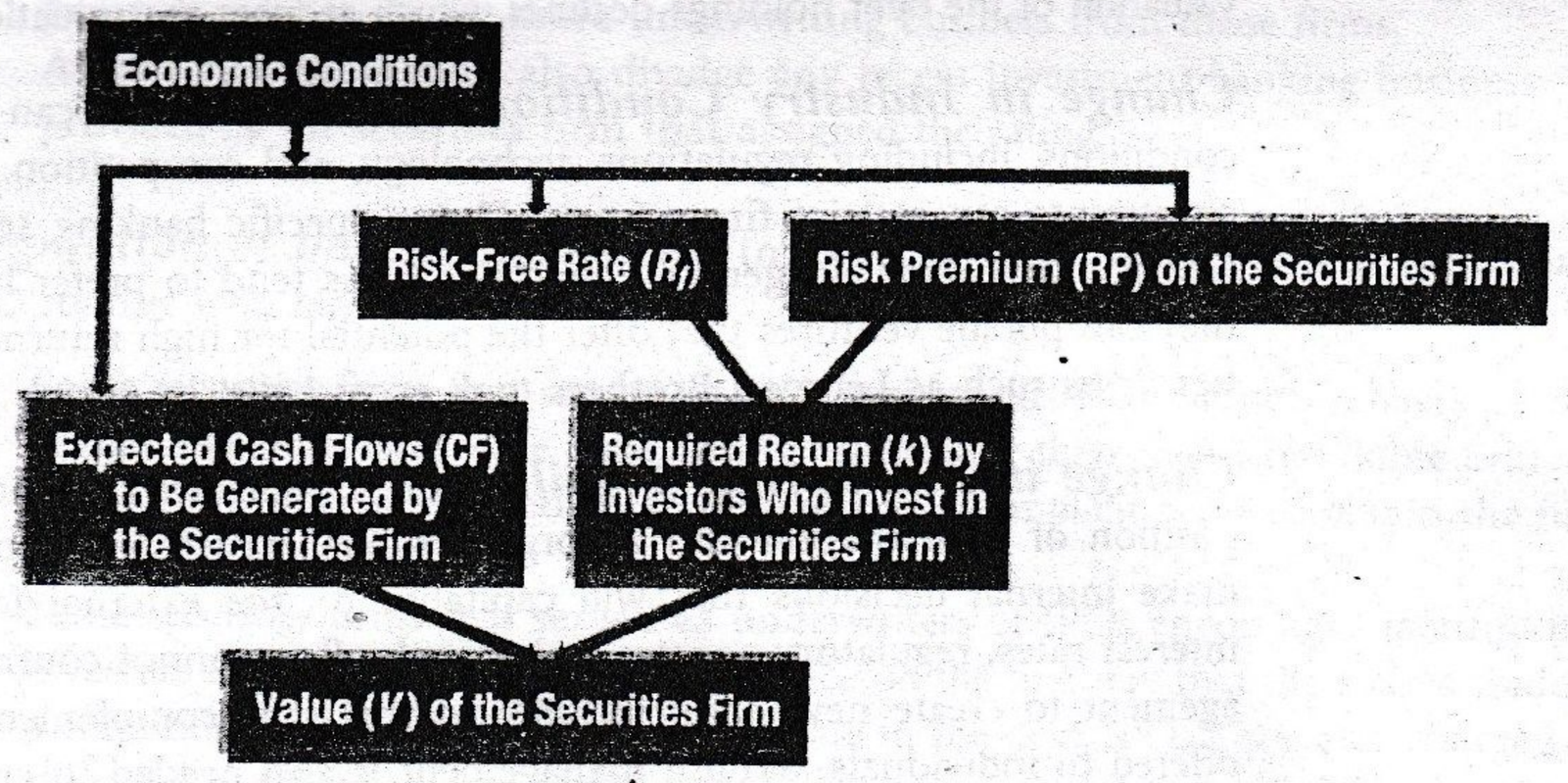
24-4 Exposure of Securities Firms to Risk

The operations conducted by securities firms create exposure to market risk, interest rate risk, credit risk, and exchange rate risk, as explained next.

24-4a Market Risk

Securities firms offer many services that are linked to stock market conditions. When stock prices are rising, there is normally a greater volume of stock offerings and secondary market transactions. Because securities firms typically are needed to facilitate these transactions, they benefit from a bullish stock market. Those securities firms that manage mutual funds typically benefit from the large investment in mutual funds during a bullish market.

Exhibit 24.6 Framework for Valuing a Securities Firm



- A stronger economy leads to more securities transactions (brokerage fee income), an increase in security offerings and other services provided by the securities firm, and therefore better cash flows.
- A lower risk-free rate enhances the valuations of bonds held by securities firms. It also may encourage some corporations to pursue bond offerings while interest rates are low and therefore may create more business for the securities firm.
- The valuation is also influenced by industry conditions and the securities firm's management (not shown in the diagram). These factors affect the risk premium (and therefore the required return by investors) and the expected cash flows to be generated by the securities firm. In particular, regulations that affect the degree of competition for securities services affect the risk premium and cash flows generated by the securities firm.

When the stock market is depressed, stock transactions tend to decline, causing a reduction in business for securities firms. Although securities firms have diversified into different services, the demand for many of these services is tied to stock market conditions. Thus, the performance of most securities firms is highly sensitive to the stock market cycles.

24-4b Interest Rate Risk

The performance of securities firms can be sensitive to interest rate movements for the following reasons. First, lower interest rates can encourage corporations or government agencies to issue more bonds, which requires more underwriting activity by securities firms. Second, the market values of bonds held as investments by securities firms increase as interest rates decline. Thus the performance of some securities firms is inversely related to interest rate movements.

24-4c Credit Risk

Many securities firms offer bridge loans and other types of credit to corporations. The securities firms are subject to the possibility that these corporations will default on their loans. The probability of default tends to increase during periods when economic conditions deteriorate. Securities firms that invest in mortgages and other types of debt securities may be more exposed to credit risk.

24-4d Exchange Rate Risk

GLOBAL ASPECTS

Many securities firms have operations in foreign countries. The earnings remitted by foreign subsidiaries are reduced when the foreign currencies weaken against the parent firm's home currency. In addition, the market values of securities maintained as investments and denominated in foreign currencies decline as the currencies weaken against the parent firm's home currency.

24-4e Impact of Financial Leverage on Exposure to Risk

The degree to which a securities firm is exposed to the risks just described is influenced by its financial leverage. While a high degree of financial leverage increases the potential return on investment, it also increases the exposure of the securities firm to major losses.

EXAMPLE

Optima Securities Co. has $1 billion in assets and estimates its net income for next year to be $10 million, which represents a return on assets of $10 million ÷ $1 billion = 1%. It considers supporting its assets with equity (a source of capital) in the range between $80 million (8 percent of its assets) and $40 million (4 percent of its assets), and the remainder of the financing will be with debt or other liabilities. It considers five different equity levels; for each level, the estimated return on equity (ROE) is shown in Exhibit 24.7. It can determine its ROE as

$$\text{ROE} = \frac{\text{Income}}{\text{Equity}} = \frac{\text{Income}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$
$$= \text{ROA} \times \text{Equity Multiplier}$$

This equation shows how return on equity (ROE) for next year is influenced by the security firm's return on assets (income/equity) and its degree of financial leverage (as measured by the equity multiplier). Notice that if it maintains a level of equity that represents 8 percent of its assets, its estimated ROE for next year will be 12.5 percent. Yet if it considers lower levels of equity to support its assets (and therefore uses more debt to finance its assets), it will achieve a higher ROE.

To illustrate how financial leverage can affect the risk of Optima Securities Co., consider how its ROA and ROE would be affected if it incurred a loss of $10 million this year instead of positive net income of $10 million. Its ROA in Column 3 of Exhibit 24.7 would now be −1% instead of 1%.

Exhibit 24.7 Illustration of How Level of Equity Affects Return on Equity

POSSIBLE LEVEL OF EQUITY	EQUITY AS % OF ITS $1 BILLION IN ASSETS	ASSUMED ROA	EQUITY MULTIPLIER (INVERSE OF CAPITAL/ ASSET RATIO)	ROE = ROA × EQUITY MULTIPLIER
$80 million	8%	1%	1/8% = 12.5	12.5%
$70 million	7%	1%	1/7% = 14.28	14.28%
$60 million	6%	1%	1/6% = 16.67	16.67%
$50 million	5%	1%	1/5% = 20	20%
$40 million	4%	1%	1/4% = 25	25%

In addition, the ROE levels in Column 5 of the exhibit would now have a negative sign. That is, if the firm used $80 million of equity financing and incurred a loss of $10 million, its loss would represent 12.5 percent of its equity. At the other extreme, if it used only $40 million of equity financing and incurred a loss on $10 million, its loss would represent 25 percent of its equity. Thus, just as a higher degree of financial leverage (lower proportion of equity financing) can enhance return on equity, it also results in more risk. ●

www.bloomberg.com
Insert the ticker symbol for any securities firm and click on "News" to review news about specific securities firms and the industry overall.

To appreciate the effect on risk, consider a new example in which Optima Securities Co. experienced losses on some of its investments in assets such as mortgage-backed securities and had to write down the value of its assets by $50 million (5 percent of their original value) to reflect their prevailing market value. If it maintained a level of equity of less than $50 million, it would not have sufficient equity to absorb the loss. Therefore, the value of its liabilities would now exceed the value of its assets, and its creditors may force the firm to file for bankruptcy.

24-5 Impact of the Credit Crisis on Securities Firms

During the credit crisis in 2008, some large securities firms experienced serious financial problems. Various types of debt securities such as mortgages that they had purchased defaulted. As the credit crisis intensified, institutional investors that commonly purchased debt securities were less willing to participate after noticing the higher default rates on credit. Thus some credit markets became inactive, the volume of services provided by securities firms declined, and the fees earned by securities firms declined. Stock prices plummeted, so firms did not want to issue stock at the prevailing stock prices, and the fees earned by securities firms for facilitating stock offerings also declined. Merger volume declined as well, and therefore so did the fees earned by securities firms for facilitating merger transactions. In general, the crisis caused a major reduction in underwriting income, merger fee income, and brokerage income earned by securities firms. In addition, the value of mortgage holdings of some securities firms declined substantially.

24-5a Government Assistance to Bear Stearns

Bear Stearns was a financial intermediary of mortgage-backed securities linked to low-quality (subprime) mortgages, and it also invested in many mortgage-backed securities. As the credit crisis intensified, the value of its mortgage-backed securities declined. In fact, Bear owned two hedge funds that collapsed because of their heavy investment in subprime mortgage securities. From March 2007 until March 2008, it wrote down

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$3 billion of its assets so that their valuation would be more closely in line with the true market value.

Bear's Liquidity Problems By March 2008, Bear Stearns was suffering from liquidity problems. Some of the financial institutions that were providing loans to Bear were no longer willing to provide funding because they were doubtful that Bear would be able to repay the loans. Bear was not in a position to raise funds with an equity offering because its stock price was slipping and would have fallen further if the company had signaled its need for funding with a secondary stock offering.

On Thursday, March 13, Bear Stearns secretly notified the Federal Reserve that it was experiencing liquidity problems and would have to file for bankruptcy the next day if it could not obtain funds.

Fed Intervention The next morning, the Fed's Board of Governors met to discuss the situation. The Board of Governors recognized that the bankruptcy of Bear Stearns could be contagious and create chaos in the financial markets. Since Bear facilitated various financial transactions for many people and firms, its bankruptcy could cause liquidity problems for all the people and firms that were relying on it to complete financial transactions in its intermediary role.

On Friday, March 14, 2008, it was announced that JPMorgan Chase (a commercial bank) was going to offer a loan to Bear Stearns. Rather than calming the markets, however, the announcement validated the suspicion that Bear Stearns lacked adequate liquidity, and its stock price immediately declined from about $57 to $30.

During the weekend, Fed officials met with executives from Bear Stearns and JPMorgan Chase. Before the financial markets opened on Monday, March 17, 2008, the Fed extended a $30 billion credit line to JPMorgan Chase to help it acquire Bear Stearns. The Fed's role was critical because it would allow JPMorgan Chase to obtain more permanent financing for the acquisition over time. JPMorgan Chase agreed to pay $10 per share, which was about 90 percent less than Bear's stock price one year earlier.

The Fed also allowed JPMorgan Chase an 18-month exemption on the capital requirements that are imposed on commercial banks. This was to allow JPMorgan Chase time to absorb Bear's assets and to sell off high-risk assets that could require a higher capital level.

On Monday, March 17, the Fed also announced that it was willing to provide emergency loans to about 20 primary dealers that serve as key financial intermediaries for the large Treasury securities transactions in the secondary market. It also committed to loans of up to $200 billion of Treasury securities to primary dealers for a term of 28 days (rather than overnight) in exchange for other types of securities. These provisions were also intended to calm the financial markets.

The Fed's assistance to Bear Stearns offered only limited help to its stockholders. Most of the stockholders that had invested in Bear before its liquidity problems surfaced lost most of their investment. Instead, the major beneficiaries of the Fed's intervention were the creditors that had provided credit to Bear Stearns; if Bear had failed and been liquidated, they would probably have received only a small fraction of the credit that they had provided.

Potential Systemic Risk Due to the Bear Stearns Problems The Fed's assistance to Bear Stearns led to questions about whether there should be a consistent policy for dealing with financial institutions that are deemed too big to fail. In general, the typical strategy would be to allow the equity value of the failing firm to be dictated by market forces, meaning that equity investors would lose their entire investment. Creditors

would have rights to the remaining value of the firm, but in liquidation they would receive only a portion of the funds they had loaned to the firm. But the Fed's intervention protected the creditors holding debt securities that were issued by Bear Stearns.

The Fed's justification for its intervention was the high exposure to systemic risk, whereby the failure of Bear Stearns could have spread adverse effects throughout financial markets. Since Bear Stearns was a major provider of clearing operations for many types of financial transactions, its failure might have frozen or delayed many financial transactions, which could have resulted in a liquidity crisis for many individuals and firms that were to receive cash as a result of the transactions. Bear Stearns also served as a counterparty to various types of financial agreements. If Bear had defaulted on all of its counterparty positions, this could have caused problems for the financial institutions on the other side of those agreements, which could have created chaos in financial markets. That is, Bear Stearns may have been viewed as "too entangled" (in financial transactions) to fail.

Criticism of the Fed's Assistance to Bear Stearns Some critics (including Paul Volcker, a previous chair of the Board of Governors of the Fed) have questioned the Fed's role in aiding Bear Stearns, since Bear was a securities firm, not a commercial bank. They suggest that providing assistance to a firm other than a commercial bank should be the responsibility of Congress and not the Fed.

In addition, a rescue can cause a moral hazard problem, meaning that financial institutions may pursue high-risk opportunities in order to achieve high returns with the assumption that they will be bailed out if their strategies fail. Managers who pursue such strategies may be able to keep their jobs if the firm is rescued before it fails. The Fed's actions also raise the question of what other types of firms might be aided by the Fed rather than Congress. Some people, though, might counter that the Fed is in a better position to intervene when a potential bankruptcy could undermine the financial system.

24-5b Failure of Lehman Brothers

Lehman Brothers specialized in the underwriting of fixed-income securities such as bonds and in asset management for companies and wealthy individuals. In 2006, it was ranked number one in the *Barron's* annual survey of corporate performance for large companies. In 2007, it was ranked at the top of *Fortune* magazine's list of "Most Admired Securities Firms." By 2008, it had grown to become the fourth largest securities firm in the United States. However, Lehman had considerable exposure to mortgage-backed securities, which led to financial problems in 2008. It had a relatively low level of cash, and its high degree of financial leverage created more pressure. For every dollar of equity, it had about $30 of debt. Furthermore, some of its debt was short term and therefore could be cut off (not renewed) if creditors sensed that Lehman was experiencing financial problems.

Lehman Brothers was using an accounting method that allowed its capital position to look stronger because capital was measured in proportion to total assets (which were reduced by the accounting treatment). Thus, Lehman's degree of financial leverage was even higher than what was reported on its balance sheet.

Lehman's Liquidity Problems From March 2008 to September 2008, its stock price declined by about 85 percent, and it was unable to raise sufficient funds through a stock offering. In addition, concerns about its creditworthiness prevented it from obtaining credit at a reasonable cost. The growing concerns about Lehman led some clients to cut their business ties, which further reduced its cash inflows. On September 15, 2008, it filed for bankruptcy.

Lehman's financial problems created a very difficult dilemma for the U.S. government, because it had become so large and played a very important role as a financial intermediary. If the U.S. government did not rescue Lehman, it would cause financial problems for many other firms (such as creditors and counterparties on swap agreements) that would not receive payments owed to them if Lehman failed. Lehman was not a commercial bank and therefore was not subject to bank regulations. This allowed it to have some competitive advantages and also allowed it to engage in some risky operations (that potentially offer high returns) that were not allowed for banks. Yet, as Lehman experienced financial problems as a result of its risky operations, it apparently expected that it would be treated like a large commercial bank and be rescued by bank regulators. It may have been able to rescue itself if it was willing to find a suitable financial institution to acquire it several months before its bankruptcy filing.

24-5c Impact of the Crisis on Regulatory Reform

The Federal Reserve's assistance to Bear Stearns and offer of temporary financing to other securities firms provided a rationale for the Fed to require that securities firms meet specified regulations such as capital requirements just like commercial banks. Historically, securities firms were subject to looser regulations than those imposed on commercial banks. In particular, securities firms were not subject to the capital requirements imposed on banks and therefore could use more debt to support their operations. They used a higher degree of financial leverage, which magnified their positive returns, but also magnified their losses. The problems of Bear Stearns and Lehman Brothers illustrated how the high degree of financial leverage used by securities firms could create excessive risk to the firms and to the financial system.

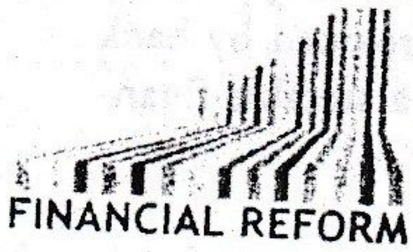
The momentum for regulatory reform of financial services continued when Merrill Lynch was acquired by Bank of America. Like Bear Stearns and Lehman, Merrill Lynch experienced major losses from its mortgage-backed securities. Its stock price had been declining, and its access to new capital was limited because of investor concerns about its financial condition. While the Federal Reserve was the primary regulator of Bank of America's operations, the SEC was the primary regulator of Merrill Lynch's operations. But when Merrill Lynch was acquired by Bank of America, it became subject to oversight by the Federal Reserve.

Conversion of Securities Firms to BHCs During the credit crisis, some securities firms were unable to access funds by issuing securities. They did not want to issue stock while stock prices were weak. In addition, they were unable to issue debt securities because investors were concerned about their financial condition. The lack of funding deepened the financial problems of Bear Stearns and Merrill Lynch before they were acquired and of Lehman Brothers before it went bankrupt. As a result of the consolidation during the credit crisis, Goldman Sachs and Morgan Stanley were the only two large securities firms remaining. They applied to become bank holding companies (BHCs), and the Fed approved the requests in September 2008. This new structure gave the firms more flexibility to obtain financing. Securities firms were allowed to borrow short-term funds from the Federal Reserve during the credit crisis, but their conversion to a BHC structure would give them permanent access to Federal Reserve funding.

A BHC can have commercial banking and securities subsidiaries. The commercial banking subsidiary can accept deposits and perform the functions of commercial banks, such as lending to businesses. It can create some stability for the company overall because it has steady access to deposits that are insured up to a limit. The securities

subsidiary performs the traditional securities functions such as advising and underwriting securities for client firms.

Overall, the BHC structure results in a greater degree of regulatory oversight by the Federal Reserve. The companies will need to satisfy capital requirements established by the Fed. These requirements are higher than the capital normally maintained by securities firms. Consequently, the securities firms may be viewed as safer as a result of their conversion to BHCs.



Financial Reform Act of 2010 The Financial Reform Act of 2010 was implemented to stabilize the financial system. Those provisions that have a direct impact on securities firms are briefly summarized here.

First, the Financial Reform Act mandated that financial institutions granting mortgages verify the income, job status, and credit history of mortgage applicants before approving mortgage applications. Thus, when securities firms serve as intermediaries in the securitization process, the mortgage backing the securities that they sell should be less risky.

Second, the Financial Reform Act requires that securities firms and other financial institutions that sell securities through the securitization process retain 5 percent of the portfolio unless the portfolio meets specific standards that reflect low risk. This provision encourages firms to ensure that the mortgages backing the securities they sell are less risky.

Third, the act created the Financial Stability Oversight Council, which is responsible for identifying risks to financial stability in the United States and makes regulatory recommendations to regulators that could reduce any risks to the financial system. The council can recommend methods to ensure that securities firms and other financial institutions do not rely on regulatory bailouts.

Fourth, the act assigned specific regulators with the authority to determine that any particular securities firm or other financial institution should be liquidated. This expedites the liquidation process and can limit the losses incurred by a failing financial institution.

Fifth, the act requires that derivative securities be traded through a clearinghouse or exchange rather than over the counter. This should allow for a more standardized structure regarding margins and collateral and more transparency of derivative security prices. Consequently, securities firms that trade these derivative securities should be less susceptible to risk that the counterparty posted insufficient collateral.

SUMMARY

- Securities firms facilitate new issues of stock by advising how much stock the firm can issue, determining the appropriate price for the stock, underwriting the stock, and distributing the stock. They facilitate new issues of bonds in a somewhat similar manner. They also provide advice and financing to corporations pursuing mergers, provide brokerage services, operate mutual funds, and engage in proprietary trading.
- Many regulations have been imposed on securities firms that attempt to ensure that transactions in financial markets do not allow any particular investors an unfair advantage. Stock exchanges impose regulations on securities firms to prevent unfair or illegal practices, ensure orderly trading, and address customer complaints. Several regulatory events have allowed more competition between securities firms and other financial institutions. Regulations require that corporations disclose any information to the public, which prevents them from leaking information to analysts of securities firms. Rules have been implemented to prevent or discourage analysts from assigning inflated ratings to stocks and to prevent analysts from being compensated by investment bank divisions that seek business from corporate clients.

- Securities firms are exposed to market risk because their volume of business is larger when stock market conditions are stronger. They are subject to interest rate risk because their underwriting business is sensitive to interest rate movements. They also hold some long-term financial assets whose values decline in response to higher interest rates. Securities firms are also subject to credit risk, since they commonly purchase debt securities and provide loans to some of their business clients. The potential damage due to these types of risk is more pronounced for securities firms that use a very high degree of financial leverage.
- As a result of the credit crisis, several major securities firms experienced financial problems, which were partially due to their high exposure to credit risk and their high degree of financial leverage. The acquisitions of securities firms by commercial banks and conversion of other securities firms into bank holding companies led to more oversight of security firm operations by the Federal Reserve.

Point Counter-Point

Should Analysts Be Separated from Securities Firms to Prevent Conflicts of Interest?

Point No. Securities firms are known for their ability to analyze companies and value them. Investors may be more comfortable when analysts work within a securities firm because they have access to substantial information.

Counter-Point Yes. Analysts have a conflict of interest because they may be unwilling to offer negative views about a company that is a client of their securities firm.

Who Is Correct? Use the Internet to learn more about this issue and then formulate your own opinion.

Questions and Applications

1. **Regulation of Securities Activities** Explain the role of the SEC, the NASD, and the stock exchanges in regulating the securities industry.
2. **SIPC** What is the purpose of the SIPC?
3. **Investment Banking Services** How do securities firms facilitate leveraged buyouts? Why are securities firms that are better able to raise funds in the capital markets preferred by corporations that need advice on proposed acquisitions?
4. **Origination Process** Describe the origination process for corporations that are about to issue new stock.
5. **Underwriting Function** Describe the underwriting functin of a securities firm.
6. **Best-Efforts Agreement** What is a best-efforts agreement?
7. **Failure of Lehman Brothers** Why did Lehman Brothers experince financial problems during the credit crisis?
8. **Direct Placement** Describe a direct placement of bonds. What is an advantage of a private placement? What is a disadvantage?
9. **International Expansion** Explain why securities firms from the United States have expanded into foreign markets.
10. **Proprietary Trading** Explain the process of proprietary trading by securities firms.
11. **Asset Stripping** What is asset stripping?
12. **Securities Firms' Use of Leverage** Explain why securities firms have used a high level of financial leverage in the past. Explain how the leverage affects their expected return and their risk.
13. **Systemic Risk** Why was the Federal Reserve concerned about systemic risk due to the financial problems of Bear Stearns?
14. **Access to Inside Information** Why do securities firms typically have some inside information that could affect future stock prices of other firms?

15. Sensitivity to Stock Market Conditions Most securities firms experience poor profit performance during periods in which the stock market performs poorly. Given what you know about securities firms, offer some possible reasons for these reduced profits.

16. Conversion to BHC Structure Explain how the credit crisis encouraged some securities firms to convert to a bank holding company (BHC) structure. Why might the expected return on equity be lower for securities firms that convert to a BHC structure?

17. Financial Services Modernization Act How did the Financial Services Modernization Act affect securities firms?

18. Regulation FD What impact has the SEC's Regulation Fair Disclosure (FD) had on securities firms?

Interpreting Financial News

Interpret the following comments made by Wall Street analysts and portfolio managers.

a. "The stock prices of most securities firms took a hit because of the recent increase in interest rates."

b. "Now that commercial banks are allowed more freedom to offer securities services, there may be a shakeout in the underwriting arena."

c. "Chaos in the securities markets can be good for some securities firms."

Managing in Financial Markets

Assessing the Operations of Securities Firms As a consultant, you are assessing the operations of a securities firm.

a. The securities firm relies heavily on full-service brokerage commissions. Do you think the firm's heavy reliance on these commissions is risky? Explain.

b. If this firm attempts to enter the underwriting business, would it be an easy transition?

c. In recent years, the stock market volume has increased substantially, and this securities firm has performed very well. In the future, however, many institutional and individual investors may invest in indexes rather than in individual stocks. How would this affect the securities firm?

Flow of Funds Exercise

How Securities Firms Facilitate the Flow of Funds

Recall that Carson Company has periodically borrowed funds but contemplates a stock or bond offering so that it can expand by acquiring some other businesses. It has contacted Kelly Investment Company, a securities firm.

a. Explain how Kelly Investment Company can serve Carson and how it will serve other clients as well when it serves Carson. Also explain how Carson Company can serve Kelly Investment Company.

b. In a securities offering, Kelly Investment Company would like to do a good job for its clients, which include both the issuer and institutional investors. Explain Kelly's dilemma.

c. The issuing firm in an IPO hopes that there will be strong demand for its shares at the offer price, which will ensure that it receives a reasonable amount of proceeds from its offering. In some previous IPOs, the share price by the end of the first day was more than 80 percent above the offer price at the beginning of the day. This reflects a very strong demand relative to the price at the end of the day. In fact, it probably suggests that the IPO was fully subscribed at the offer price and that some institutional investors who purchased the stock at the offer price flipped their shares near the end of the first day to individual investors who were willing to pay the market price. Do you think that the issuing firm would be pleased that its stock price increased by more than 80 percent on the first day? Explain. Who really benefits from the increase in price on the first day?

d. Continuing the previous question, assume that the stock price drifts back down to near the original offer price over the next three weeks (even though the general stock market conditions were stable over this period) and then moves in tandem with the market over the next several years. Based on this information, do you think the offer price was appropriate? If so, how can you explain the unusually high one-day return on the stock? Who benefited from this stock price behavior, and who was adversely affected?

INTERNET/EXCEL EXERCISES

1. Go to www2.goldmansachs.com. Using this website, describe the different types of financial services offered by Goldman Sachs. Summarize its main business. Is Goldman Sachs focused on brokerage, investment banking, or a combination of these? Describe its performance over the last year. Explain why its performance was higher or lower than normal. Was the change in its performance due to the economy, recent interest rate movements, the stock market's performance, or changes in the amount of stock-trading or merger activity?

2. Retrieve information about Morgan Stanley (ticker symbol is MS) or another publicly traded securities firm of your choice. Go to the firm's website and retrieve its most recent annual report or access information from finance.yahoo.com by entering the ticker symbol and clicking on "Get Quotes." Then click on "SEC Filings" to retrieve income statement information. Review the security firm's recent performance. Has its income as a percentage of assets increased since the year before? Explain what caused this change over the last year. How have the firm's operating expenses changed over the last year? Discuss how the firm's recent strategy and economic conditions may explain the changes in these components of its income statement.

3. Go to finance.yahoo.com, enter the symbol MS (Morgan Stanley), and click on "Get Quotes." Click on "5y" just below the stock price trend to review the stock price movements over the last five years. Check the "Compare" box just above the graph and then select "S&P 500" in order to compare the trend of Morgan Stanley's stock price with the movements in the S&P stock index. Has Morgan Stanley performed better or worse than the index? Offer an explanation for its performance.

4. Go to finance.yahoo.com, enter the symbol MS (Morgan Stanley), and retrieve stock price data at the beginning of the last 20 quarters. Then go to http://research.stlouisfed.org/fred2/ and retrieve interest rate data at the beginning of the last 20 quarters for the three-month Treasury bill. Record the data on an Excel spreadsheet. Derive the quarterly return of Morgan Stanley. Derive the quarterly change in the interest rate. Apply regression analysis in which the quarterly return of Morgan Stanley is the dependent variable and the quarterly change in the interest rate is the independent variable (see Appendix B for more information about using regression analysis). Is there a positive or negative relationship between the interest rate movement and the stock return of Morgan Stanley? Is the relationship significant? Offer an explanation for this relationship.

WSJ EXERCISE

Performance of Securities Firms

Using a recent issue of the *Wall Street Journal*, summarize an article that discusses the recent performance of a particular securities firm. Does the article suggest that the securities firm's performance was better or worse than the norm? What reason is given for the particular level of performance?

ONLINE ARTICLES WITH REAL-WORLD EXAMPLES

Find a recent practical article available online that describes a real-world example regarding a specific financial institution or financial market that reinforces one or more concepts covered in this chapter.

If your class has an online component, your professor may ask you to post your summary of the article there and provide a link to the article so that other students can access it. If your class is live, your professor may ask you to summarize your application of the article in class. Your professor may assign specific students to complete this assignment or may allow any students to do the assignment on a volunteer basis.

For recent online articles and real-world examples related to this chapter, consider using the following search terms (be sure to include the prevailing year as

a search term to ensure that the online articles are recent):

1. [name of a specific securities firm] AND income
2. [name of a specific securities firm] AND operations
3. [name of a specific securities firm] AND risk
4. [name of a specific securities firm] AND earnings
5. securities firm AND underwriting
6. securities firm AND earnings
7. securities firm AND risk
8. securities firm AND regulation
9. securities firm AND operations
10. securities firm AND credit

25
Insurance and Pension Fund Operations

CHAPTER OBJECTIVES

The specific objectives of this chapter are to:

- describe the main operations of insurance companies,
- explain the exposure of insurance companies to various forms of risk,
- identify the factors that affect the value of insurance companies,
- describe the common types of private pension plans,
- explain how pension funds are managed, and
- explain the key factors that influence the performance of pension portfolios.

Insurance companies and pension funds were created to provide insurance and retirement funding for individuals, firms, and government agencies. They serve financial markets by supplying funds to a variety of financial and nonfinancial corporations as well as government agencies. Some insurance and pension operations are independent companies, whereas others are units (or subsidiaries) of financial conglomerates.

25-1 BACKGROUND

Insurance companies provide various forms of insurance and investment services to individuals and charge a fee (called a premium) for this financial service. In general, the insurance provides a payment to the insured (or a named beneficiary) under conditions specified by the insurance policy contract. These conditions typically result in expenses or lost income, so the insurance is a means of financial protection. It reduces the potential financial damage incurred by individuals or firms due to specified conditions.

Common types of insurance offered by insurance companies include life insurance, property and casualty insurance, health insurance, and business insurance. Many insurance companies offer multiple types of insurance.

An individual's decision to purchase insurance may be influenced by the likelihood of the conditions that would result in receiving an insurance payment. Individuals who are more exposed to specific conditions that cause financial damage will purchase insurance against those conditions. Consequently, the insurance industry faces an **adverse selection** problem, meaning that those who are most likely to need insurance are most likely to purchase it. Furthermore, insurance can cause the insured to take more risks because they are protected. This is known as the **moral hazard problem** in the insurance industry.

Insurance companies employ underwriters to calculate the risk of specific insurance policies. The companies decide what types of policies to offer based on the potential level of claims to be paid on those policies and the premiums that they can charge.

25-1a Determinants of Insurance Premiums

The premium charged by an insurance company for each insurance policy is based on the probability of the condition under which the company will have to provide a payment to the insured (or the insured's beneficiary) and the potential size of the payment. The premium may also be influenced by the degree of competition within the industry for the specific type of insurance offered. Insurance companies can estimate the present

WEB

www.insure.com
Information about more than 200 insurance companies.

value of a payment that they will have to make for a specific insurance policy. The premium charged for that insurance is influenced by the present value of the expected payment. The premium will also contain a markup to cover overhead expenses and to provide a profit beyond expenses.

The insurance premium is higher when there is more uncertainty about the size of the payment that may ultimately have to be made. Insurance companies recognize that the timing of the payout of any particular policy may be difficult to predict, but they are more concerned with the total flow of payments in any particular period. That is, if an insurance company has 20,000 policies, it may not know which policies will require payment this month but it may be able to predict the typical amount of payments per month.

Insurance companies tend to charge lower premiums when they provide services to all employees of a corporation through group plans. The lower premium represents a form of quantity discount in return for being selected to provide a particular type of insurance to all employees.

Dilemma When Setting Insurance Premiums When insurance companies assess the probability of a condition that will result in a payment to the insured (or the insured's beneficiary), they rely on statistics about the general population. Individuals, however, have private information about themselves that is not available to the insurance company. This results in the adverse selection problem mentioned earlier. Those who have private information that makes them more likely to need insurance will buy it, whereas those who have private information that makes them less likely to need insurance will not buy it. For the insurance industry, the adverse selection problem means that people who have insurance are more likely to suffer losses (and therefore to file claims) than people who do not have insurance.

EXAMPLE

An insurance company representative arrives on a college campus and asks all students whether they want to purchase insurance in case any of the property (such as stereo equipment) in their dorm rooms is stolen. Beth declines the offer because she always locks the door when she leaves her dorm room. Conversely, Randy decides to buy the insurance because he never locks his dorm room and realizes that he may need the insurance. Even though Randy is a higher risk to the insurance company, he pays the same premium for the insurance as other students because the insurance company does not have the private information about his behavior.

Assume the insurance company sets the premium based on historical police reports showing that 3 percent of all students on campus have property stolen from their dorm rooms. Now consider that many careless students like Randy buy the insurance while many careful students like Beth do not. Since the students who purchase the insurance often forget to lock their dorm rooms, they are more likely to have property stolen than the norm. Conversely, the students who do not purchase the insurance generally lock their dorm rooms and thus are less likely to have property stolen than the norm. In general, this adverse selection problem means that the insurance company will likely experience more stolen property claims than it anticipated. If the company does not consider the adverse selection problem when setting its premiums, the premiums may be too low. ●

A related problem is the moral hazard problem, which, as mentioned earlier, means that some people take more risks once they are insured. This problem can also cause insurance companies to set their premiums too low if they do not take this tendency into account.

EXAMPLE

Refer back to the previous example in which the insurance company offers insurance to students in case property is stolen from their dorm rooms. Assume that Mina purchases this insurance even though she is normally very careful about locking her dorm room. Once she has insurance, she decides that she does not need to worry about locking her room because she is protected if her property

is stolen. At the time Mina purchased the insurance, she was less likely to have property stolen than other students who were more careless than she was. But once she had insurance, she became a high risk because she changed her behavior as a result of having insurance. ●

As a result of the adverse selection and moral hazard problems, insurance companies need to assess the probability of a loss incurred by the people who obtain insurance rather than by the population in general. By doing this, the companies can charge premiums that more closely fit the likelihood that those who have insurance will file claims to cover their losses.

25-1b Investments by Insurance Companies

Insurance companies invest the insurance premiums and fees received from other services until the funds are needed to pay insurance claims. In some cases, the claims occur several years after the premiums are received. Thus, the performance of insurance companies is partially dependent on the return on the invested funds. Their investment decisions balance the goals of return, liquidity, and risk. They want to generate a high rate of return while maintaining risk at a tolerable level. They need to maintain sufficient liquidity so that they can easily access funds to accommodate claims by policyholders. Those insurance companies whose claims are less predictable need to maintain more liquidity.

WEB

www.naic.org
Links to information about insurance regulations.

25-1c Regulation of Insurance Companies

The insurance industry is highly regulated by state agencies (called commissions in some states), although the degree of regulation varies among states. Each state attempts to make sure that insurance companies are providing adequate services, and the state also approves the rates insurers may charge. Insurance company agents must be licensed. In addition, the forms used for policies must be approved by the state to ensure that they do not contain misleading wording.

State regulators also evaluate the asset portfolios of insurance companies to ensure that investments are reasonably safe and that adequate reserves are maintained to protect policyholders. For example, some states have limited an insurance company's investment in junk bonds to no more than 20 percent of total assets.

The **National Association of Insurance Commissioners (NAIC)** facilitates cooperation among the various state agencies whenever an insurance issue is a national concern. It attempts to maintain a degree of uniformity in common reporting issues. It also conducts research on insurance issues and participates in legislative discussions.

The Insurance Regulatory Information System (IRIS) has been developed by a committee of state insurance agencies to assist in each state's regulatory duties. The IRIS compiles financial statements, lists of insurers, and other relevant information pertaining to the insurance industry. In addition, it assesses the companies' respective financial statements by calculating 11 ratios that are then evaluated by NAIC regulators to monitor the financial health of a company. The NAIC provides all state insurance departments with IRIS assessment results that can be used as a basis for comparison when evaluating the financial health of any company. The regulatory duties of state agencies often require a comparison of the financial ratios of a particular insurance company to the industry norm. Use of the industry norm facilitates the evaluation.

Assessment System The regulatory system is designed to detect any problems in time to search for a remedy before the company deteriorates further. The more

commonly used financial ratios assess a variety of relevant characteristics, including the following:

- The ability of the company to absorb either losses or a decline in the market value of its investments
- Return on investment
- Relative size of operating expenses
- Liquidity of the asset portfolio

Regulators monitor these characteristics to ensure that insurance companies do not become overly exposed to credit risk, interest rate risk, or liquidity risk.

Regulation of Capital Insurance companies are required to report a risk-based capital ratio to insurance regulators. The ratio was created by the NAIC and is intended to force those insurance companies with a higher exposure to insurance claims, potential losses on assets, and interest rate risk to hold a higher level of capital. The application of risk-based capital ratios not only discourages insurance companies from excessive exposure to risk, it also forces companies that take high risks to back their business with a large amount of capital. Consequently, there is less likelihood of failures in the insurance industry.

Regulation of Failed Insurance Companies If an insurance company files for bankruptcy, the insurance commissioner proposes a plan within the court system on how the assets should be distributed to the creditors. If the company is to be liquidated, property insurance policies are canceled and state guaranty funds, which are funded by solvent insurers, are used to cover claims based on limits set by state laws. The limits can vary among states. The state insurance department will typically assume management of the failed insurance company to preserve the remaining assets and ensure that policyholders' rights are maintained. Owners of life insurance, health insurance, or annuities can have their policies assumed by other insurance companies.

Regulation of Financial Services Offered Before 1999, insurance operations were mostly separated from other types of financial services. In 1998, Citicorp merged with Traveler's Insurance Company, resulting in the financial conglomerate named Citigroup. This merger forced Congress to deal with the issue of whether insurance operations can be offered along with all other types of financial services. In 1999, Congress passed the Financial Services Modernization Act, which allowed insurance companies to merge with commercial banks and securities firms. Some banks acquired insurance companies, which then marketed their insurance services under the bank's brand name to the bank's existing customer base.

Federal Insurance Office In July 2010, the Financial Reform Act was implemented. This act contained several provisions intended to enhance the safety of the financial system. Although most provisions were directed at the banking industry, mortgage market, and derivative security markets, one provision called for creation of the Federal Insurance Office to be housed within the Treasury Department. This office is responsible for monitoring the insurance industry and providing recommendations to Congress about insurance regulations.

GLOBAL ASPECTS

International Insurance Regulations Some life insurance companies based in the United States have expanded their business internationally to areas where insurance services have been very limited. These companies must comply with foreign regulations regarding services offered in the respective countries. The differences in regulations among countries increase the information costs of entering foreign markets.

25-2 Life Insurance Operations

Because life insurance companies are a dominant force in the insurance industry, they receive more attention in this chapter. In aggregate, they generate more than $100 billion in premiums each year and serve as key financial intermediaries by investing their funds in financial markets.

Life insurance companies compensate (provide benefits to) the beneficiary of a policy upon the policyholder's death. They charge policyholders a premium that should reflect the probability of making a payment to the beneficiary as well as the size and timing of the payment. Despite the difficulty of forecasting the life expectancy of a given individual, life insurance companies have historically forecast with reasonable accuracy the benefits they will have to provide beneficiaries. Because they hold a large portfolio of policies, these companies use actuarial tables and mortality figures to forecast the percentage of policies that will require compensation over a given period based on characteristics such as the age distribution of policyholders.

Life insurance companies also commonly offer employees of a corporation a **group life policy**. This service has become quite popular and has generated a large volume of business in recent years. Group policies can be provided at a low cost because of the high volume. Group life coverage now makes up about 40 percent of total life insurance coverage, up from only 26 percent in 1974.

25-2a Ownership

There are about 900 life insurance companies classified as having stock ownership, while about 100 companies have mutual ownership. A stock-owned company is owned by its shareholders, whereas a mutual life insurance company is owned by its policyholders. In recent years, some mutual life insurance companies have converted to become stock owned. As in the savings institutions industry, a primary reason for the conversions is to gain access to capital by issuing stock.

WEB

www.insurance.com
Provides quotes on any type of insurance.

25-2b Types of Life Insurance

Some of the more common types of life insurance policies are described here.

Whole Life Insurance **Whole life insurance** protects policyholders until death or as long as the premiums are promptly paid. In addition, a whole life policy provides a form of savings to the policyholder. It builds a cash value that the policyholder is entitled to even if the policy is canceled.

From the perspective of the life insurance company, whole life policies generate periodic (typically, quarterly or semiannual) premiums that can be invested until the policyholder's death, when benefits are paid to the beneficiary. The amount of benefits is typically fixed.

Term Insurance **Term insurance** is temporary, providing insurance only over a specified term, and does not build a cash value for policyholders. The premiums paid represent only insurance, not savings. Term insurance, however, is significantly less expensive than whole life insurance. Policyholders must compare the cash value of whole life insurance to the additional costs to determine whether it is preferable to term insurance. Those who prefer to invest their savings themselves will likely opt for term insurance.

People who need more insurance now than later may choose decreasing term insurance, in which the benefits paid to the beneficiary decrease over time. Families with mortgages commonly select this form of insurance. As time passes, the mortgage balance

decreases and the family is more capable of surviving without the breadwinner's earnings. Thus, less compensation is needed in later years.

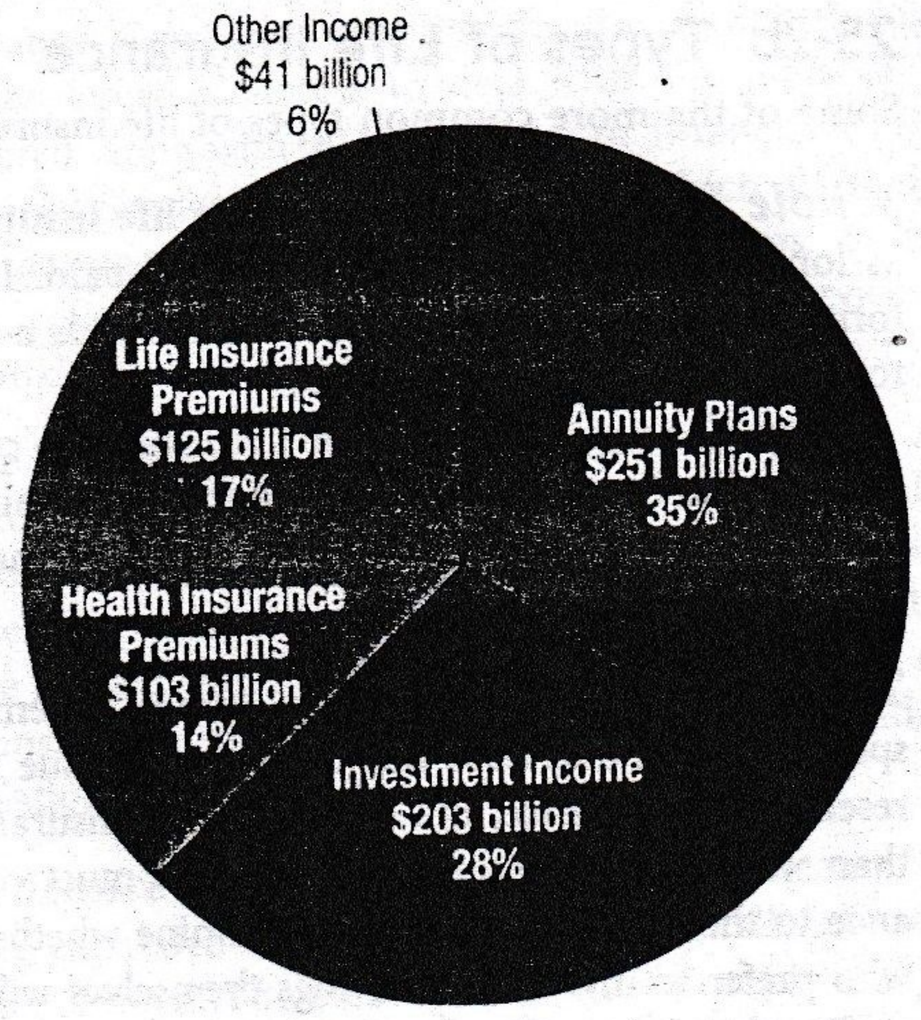
Variable Life Insurance Under **variable life insurance**, the benefits awarded by the life insurance company to a beneficiary vary with the assets backing the policy. Flexible-premium variable life insurance policies are available, allowing flexibility on the size and timing of payments.

Universal Life Insurance **Universal life insurance** combines the features of term and whole life insurance. It specifies a period of time over which the policy will exist but also builds a cash value for the policyholder over time. Interest is accumulated from the cash value until the policyholder uses those funds. Universal life insurance allows flexibility regarding the size and timing of the premiums, too. The growth in a policy's cash value is dependent on the pace of the premiums. The premium payment is divided into two portions. The first is used to pay the death benefit identified in the policy and to cover any administrative expenses. The second is used for investments and reflects savings for the policyholder. The Internal Revenue Service prohibits the value of these savings from exceeding the policy's death benefits.

25-2c Sources of Funds

Life insurance companies obtain much of their funds from premiums, as shown in Exhibit 25.1. Total premiums (life plus health insurance) represent about 31 percent of total income. The largest single source of funds, however, is the provision of **annuity plans**, which offer a predetermined amount of retirement income to individuals. Annuity plans have become very popular and now generate proportionately more income to

Exhibit 25.1 Distribution of U.S. Life Insurance Company Income



Source: *Life Insurance Fact Book, 2012.*

insurance companies than in previous years. More information about the annuities provided by numerous life insurance companies can be found at www.annuity.com. The third largest source of funds is investment income, which results from the investment of funds received from premium payments.

25-2d Capital

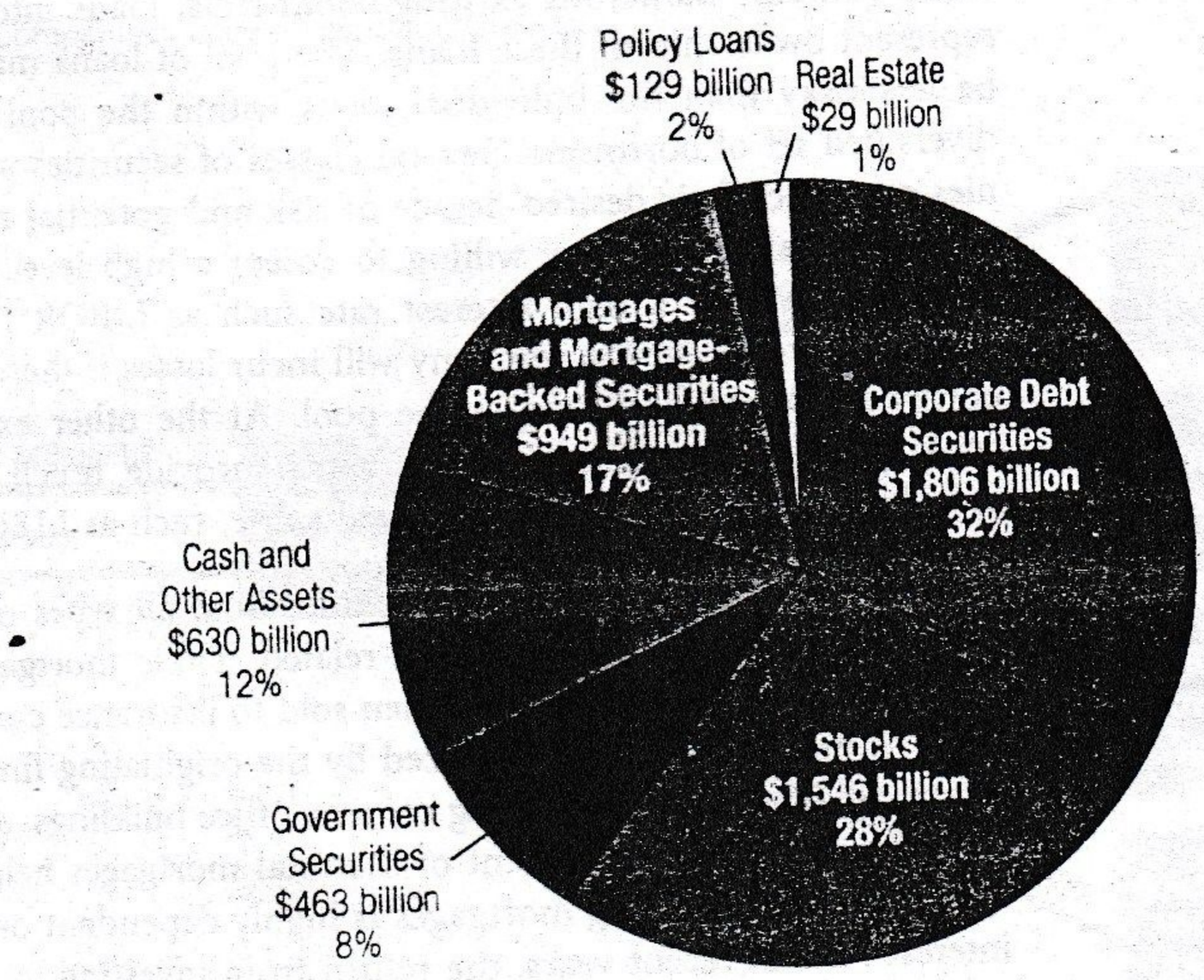
Insurance companies build capital by retaining earnings or issuing new stock. They use capital as a means of financing investment in fixed assets, such as buildings, and as a cushion against operating losses. Since a relatively large amount of capital can enhance safety, insurance companies are required to maintain adequate capital. Insurance companies are required to maintain a larger amount of capital when they are exposed to a higher degree of risk. Their risk can be measured by assessing the risk of their assets (as some assets are more exposed to losses than others) and their exposure stemming from the types of hazards against which they provide insurance.

Insurance companies maintain an adequate capital level not only to cushion potential losses but also to reassure their customers. When customers purchase insurance, the benefits are received at a future point in time. The customers are more comfortable purchasing insurance from an insurance company that has an adequate capital level and is therefore likely to be in existence at the time the benefits are to be provided.

25-2e Uses of Funds

The uses of funds by life insurance companies strongly influence their performance. Life insurance companies are major institutional investors. Exhibit 25.2, which shows the

Exhibit 25.2 Assets of U.S. Life Insurance Companies



Source: *Life Insurance Fact Book, 2012.*

assets of life insurance companies, indicates how funds have been used. The main assets are described in the following subsections.

Government Securities Life insurance companies invest in U.S. Treasury securities, state and local government bonds, and foreign bonds. They maintain investments in U.S. Treasury securities because of their safety and liquidity, but they also invest in bonds issued by foreign governments in an attempt to enhance profits.

In recent years, long-term interest rates have been very low. Consequently, returns from investing in U.S. government securities have been low. Under these conditions, insurance companies that desire safe investments must accept very low returns.

Corporate Securities Corporate bonds are the most popular asset of life insurance companies. Companies usually hold a mix of medium- and long-term bonds for cash management and liquidity needs. Although corporate bonds provide a higher yield than government securities, they have a higher degree of credit (default) risk. Some insurance companies focus on high-grade corporate bonds, while others invest a portion of their funds in junk bonds.

Because life insurance companies expect to maintain a portion of their long-term securities until maturity, this portion can be somewhat illiquid. Thus they have the flexibility to obtain some high-yielding, directly placed securities when they can directly negotiate the provisions. Because such nonstandard securities are less liquid, life insurance companies balance their asset portfolios with other, more liquid securities. A minor portion of corporate securities are foreign. The foreign holdings typically represent industrialized countries and are therefore considered to have low credit risk. Of course, the market values of these foreign bonds are still susceptible to interest rate and currency fluctuations.

In addition to buying individual corporate bonds, insurance companies invest in packages of corporate bonds, called collateralized loan obligations (CLOs). Commercial banks combine numerous existing commercial loans into a pool and sell securities that represent ownership of these loans. The pool of loans making up a CLO is perceived to be less risky than the individual loans within the pool because the loans represent a diversified set of borrowers. Several classes of securities are issued, so insurance companies can select their desired degree of risk and potential return.

An insurance company willing to accept a high level of risk might choose BB-rated notes, which offer a high interest rate such as LIBOR (London Interbank Offer Rate) plus 3.5 percent. But the company will incur losses if there are loan defaults by corporate borrowers whose loans are in the pool. At the other extreme, an insurance company could purchase AAA-rated notes, which provide much more protection against loan defaults but offer a much lower interest rate, such as LIBOR plus 0.25 percent.

Mortgages Life insurance companies hold all types of mortgages, including family, multifamily, commercial, and farm-related. These mortgages are typically originated by another financial institution and then sold to insurance companies in the secondary market. The mortgages are still serviced by the originating financial institution. Commercial mortgages that finance shopping centers, office buildings, and other commercial property make up more than 90 percent of the total mortgages held by life insurance companies. The return from holding mortgages is highly dependent on interest rates. Because of low interest rates in recent years, the return from investing in mortgages is very limited.

Real Estate Although life insurance companies finance real estate by purchasing mortgages, their return is limited to the mortgage payments because they are simply

acting as a creditor. In an attempt to achieve higher returns, they sometimes purchase real estate and lease it for commercial purposes. The ownership of real estate offers them the opportunity to generate very high returns but also exposes them to greater risk. Real estate values can be volatile over time and can have a significant effect on the market value of a life insurance company's asset portfolio.

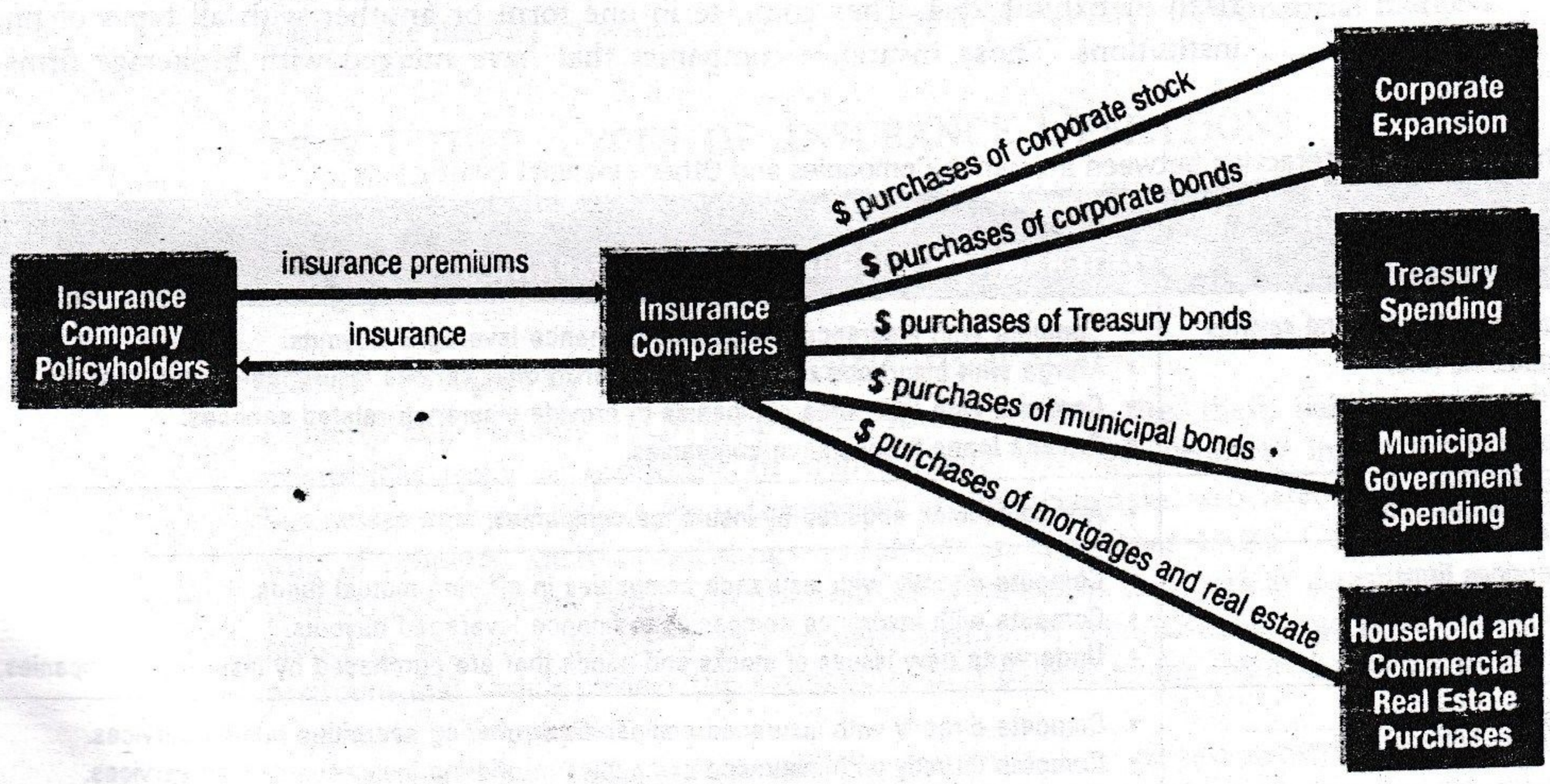
Policy Loans Life insurance companies lend a small portion of their funds to whole life policyholders (called *policy loans*). Whole life policyholders can borrow up to their policy's cash value (or a specified proportion of the cash value). The rate of interest is sometimes guaranteed over a specified period of time, as stated in the policy. Other sources of funds for individuals typically do not guarantee an interest rate at which they can borrow. For this reason, policyholders tend to borrow more from life insurance companies during periods of rising interest rates, when alternative forms of borrowing would be more expensive.

Summary of Uses of Funds Exhibit 25.3 summarizes the uses of funds by illustrating how insurance companies finance economic growth. They channel funds received from insurance premiums to purchase stocks and bonds issued by corporations. They purchase bonds issued by the Treasury and municipalities and thereby finance government spending. They also use some of their funds to purchase household and commercial real estate.

25-2f Asset Management of Life Insurance Companies

Because life insurance companies tend to receive premiums from policyholders for several years before paying out benefits to a beneficiary, their performance can be significantly affected by their asset portfolio management. Like other financial institutions, they adjust their asset portfolios to counter changes in the factors that affect their risk. If they expect a downturn in the economy, they may reduce their holdings of corporate

Exhibit 25.3 How Insurance Companies Finance Economic Growth



stocks and real estate. If they expect higher interest rates, they may reduce their holdings of fixed-rate bonds and mortgages.

To cope with the existing forms of risk, life insurance companies attempt to balance their portfolios so that any adverse movements in the market value of some assets will be offset by favorable movements in others. For example, assuming that interest rates will move in tandem with inflation, life insurance companies can use real estate holdings to partially offset the potential adverse effect of inflation on bonds. When higher inflation causes higher interest rates, the market value of existing bonds decreases, whereas the market value of real estate holdings tends to increase. Conversely, an environment of low or decreasing inflation may cause real estate values to stagnate but have a favorable impact on the market value of bonds and mortgages (because interest rates would likely decline). Although such a strategy may be useful, it is much easier to implement on paper than in practice. Because real estate values can fluctuate to a great degree, life insurance companies allocate only a limited amount of funds to real estate. In addition, real estate is less liquid than most other assets.

Many insurance companies are diversifying into other businesses by offering a wide variety of financial products. Such a strategy not only provides diversification but also enables these companies to offer packages of products to policyholders who desire to cover all these needs at once.

Overall, life insurance companies want to earn a reasonable return while maintaining their risk at a tolerable level. The degree to which they avoid or accept the various forms of risk depends on their degree of risk aversion. Companies that accept a greater amount of risk in their asset portfolios are likely to generate a higher return. If market conditions move in an unexpected manner, however, they will be more severely damaged than companies that employed a more conservative approach.

25-2g Interaction with Other Financial Institutions

Life insurance companies interact with financial institutions in several ways, as summarized in Exhibit 25.4. They compete in one form or another with all types of financial institutions. Those insurance companies that have merged with brokerage firms offer

Exhibit 25.4 Interaction between Insurance Companies and Other Financial Institutions

TYPE OF FINANCIAL INSTITUTION	INTERACTION WITH INSURANCE COMPANIES
Commercial banks and savings institutions (SIs)	• Compete with insurance companies to finance leveraged buyouts. • Merge with insurance companies in order to offer various insurance-related services. • Compete with insurance companies to provide insurance-related services. • Provide loans to insurance companies.
Finance companies	• Are sometimes acquired by insurance companies.
Securities firms	• Compete directly with insurance companies in offering mutual funds. • Compete with insurance companies to finance leveraged buyouts. • Underwrite new issues of stocks and bonds that are purchased by insurance companies.
Brokerage firms	• Compete directly with insurance companies in offering securities-related services. • Compete directly with insurance companies in offering insurance-related services. • Serve as brokers for insurance companies that buy stocks or bonds in the secondary market.
Pension funds	• Are sometimes managed by insurance companies.

Exhibit 25.5 Participation of Insurance Companies in Financial Markets

FINANCIAL MARKET	HOW INSURANCE COMPANIES PARTICIPATE IN THIS MARKET
Money markets	• Maintain a portion of their funds in money market securities, such as Treasury bills and commercial paper, to maintain adequate liquidity.
Bond markets	• Purchase bonds for their portfolios.
Mortgage markets	• Purchase mortgages and mortgage-backed securities for their portfolios.
Stock markets	• Purchase stocks for their portfolios.
Futures markets	• May sell futures contracts on bonds or a bond market index to hedge their bond and mortgage portfolios against interest rate risk. • May take positions in stock market index futures to hedge their stock portfolios against market risk.
Options markets	• Purchase call options on particular stocks that they plan to purchase in the near future. • Purchase put options or write call options on stocks they own that may experience a temporary decline in price.
Swap markets	• Engage in interest rate swaps to hedge the exposure of their bond and mortgage portfolios to interest rate risk.

a wide variety of securities-related services. Several insurance companies offer mutual funds to investors. Some state insurance regulators have allowed commercial banks to underwrite and sell insurance, which will result in more intense competition in the insurance industry.

Participation in Financial Markets The manner in which life insurance companies use their funds indicates their form of participation in the various financial markets. Insurance companies are common participants in the stock, bond, and mortgage markets because their asset portfolios are concentrated in these securities. They also use the money markets to purchase short-term securities for liquidity purposes. However, their participation in money markets is less than in capital markets. Exhibit 25.5 summarizes the manner in which insurance companies participate in financial markets.

25-3 Other Types of Insurance Operations

In addition to life insurance, other common types of insurance operations include property and casualty insurance, health insurance, business insurance, bond insurance, and mortgage insurance. Each of these types of insurance is described in turn.

25-3a Property and Casualty Insurance

Property and casualty (PC) insurance protects against fire, theft, liability, and other events that result in economic or noneconomic damage. Property insurance protects businesses and individuals from the impact of financial risks associated with the ownership of property, such as buildings, automobiles, and other assets. Casualty insurance protects policyholders from potential liabilities for harm to others as a result of product failure or accidents. Property and casualty insurance companies charge policyholders a premium that should reflect the probability of a payout to the insured and the potential magnitude of the payout.

There are about 3,800 individual PC companies. The largest providers of PC insurance are State Farm Insurance Group, Allstate Insurance Group, Farmers Insurance

Group, and Nationwide Insurance Enterprise. No single company controls more than 10 percent of the PC insurance market. Although there are more PC companies than life insurance companies, the PC insurance business in aggregate is only about one-fourth as large as the life insurance business in aggregate (based on assets held). Nevertheless, the PC insurance business generates about the same amount of insurance premiums as the life insurance business. Many insurance companies now diversify their business, offering both life and PC insurance.

Life insurance and PC insurance have very different characteristics. First, PC policies often last one year or less, as opposed to the long-term or even permanent life insurance policies. Second, PC insurance encompasses a wide variety of activities, ranging from auto insurance to business liability insurance. Life insurance is more focused. Third, forecasting the amount of future compensation to be paid is more difficult for PC insurance than for life insurance. Property and casualty compensation depends on a variety of factors, including inflation, hurricanes, trends in terrorism, and the generosity of courts in lawsuits. Because of the greater uncertainty, PC insurance companies need to maintain more liquid asset portfolios. Earnings can be quite volatile over time, as the premiums charged may be based on highly overestimated or underestimated compensation.

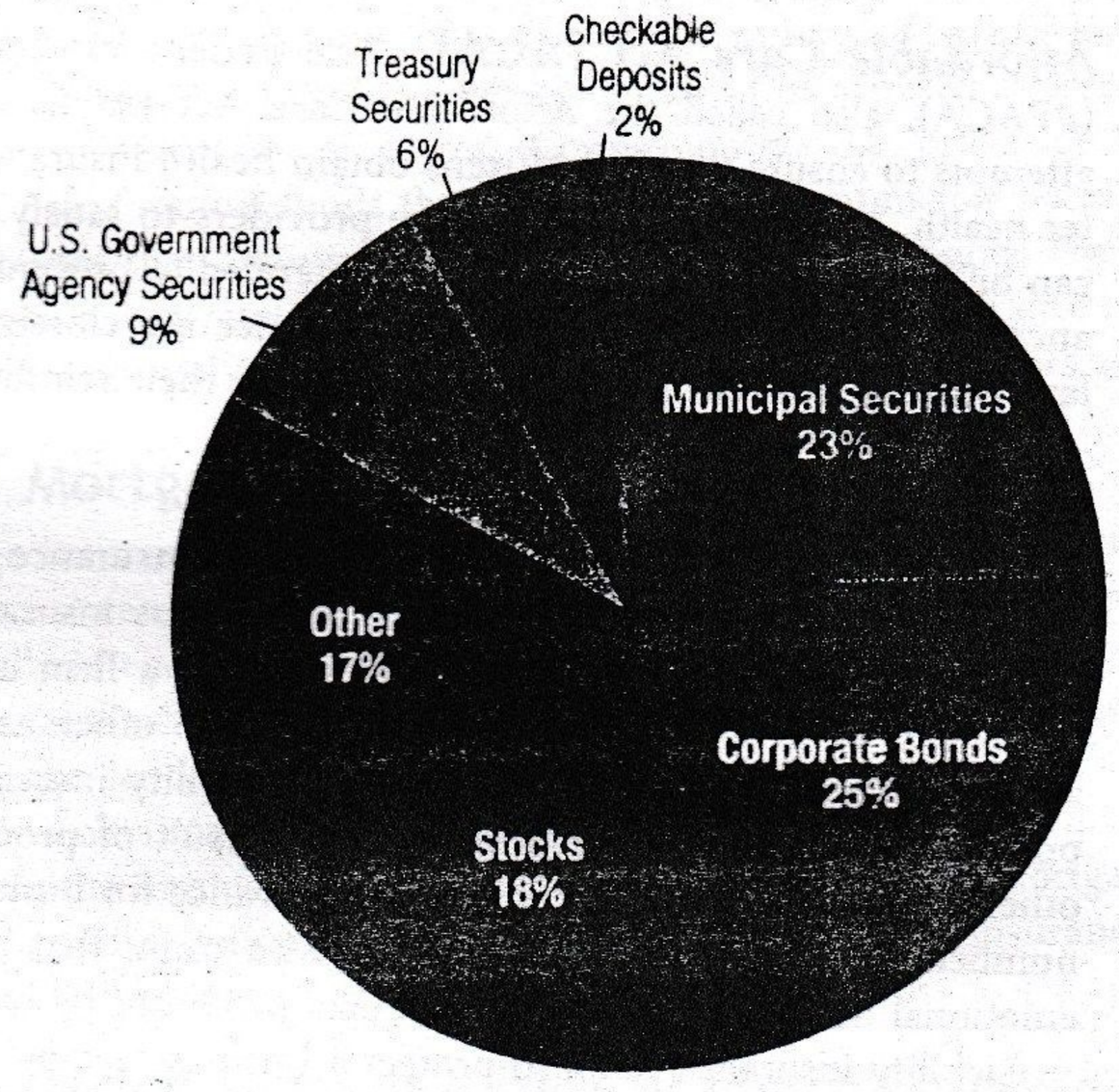
Cash Flow Underwriting A unique aspect of the PC insurance industry is its cyclical nature. As interest rates rise, companies tend to lower their rates so as to write more policies and acquire more premium dollars to invest. They are hoping losses will hold off long enough to make the cheaper premiums profitable through increased investment income. As interest rates decline, the price of insurance rises to offset decreased investment income. This method of adapting prices to interest rates is called **cash flow underwriting**. It can backfire for companies that focus on what they can earn in the short run and ignore what they will pay out later. A company that does not accurately predict the timing of the cycle can experience inadequate reserves and a drain on cash.

Uses of Funds The primary uses of funds for PC insurance companies are illustrated in Exhibit 25.6. Municipal securities and corporate bonds dominate, followed by common stock. The amount of common stock holdings has been more volatile than that of the other components. The most obvious difference in the asset structure of PC companies relative to life insurance companies is the much higher concentration of government (municipal, Treasury, and government agency) securities.

Property and Casualty Reinsurance PC companies commonly obtain reinsurance, which effectively allocates a portion of their return and risk to other insurance companies. It is similar to a commercial bank acting as the lending agent by allowing other banks to participate in the loan. A particular PC insurance company may agree to insure a corporation but spread the risk by inviting other insurance companies to participate. Reinsurance allows a company to write larger policies because a portion of the risk involved will be assumed by other companies.

The number of companies willing to offer reinsurance has declined significantly because of generous court awards and the difficulty of assessing the amount of potential claims. Reinsurance policies are often described in the insurance industry as "having long tails," which means that the probability distribution of possible returns on reinsurance is widely dispersed. Although many companies still offer reinsurance, their premiums have increased substantially in recent years. If the desire to offer reinsurance continues to decline, the primary insurers will be less able to "sell off " a portion of the risk they assume when writing policies. Consequently, they will be under pressure to more closely evaluate the risk of the policies they write.

Exhibit 25.6 Assets of Property and Casualty Insurance Companies



Source: *Federal Reserve.*

25-3b Health Care Insurance

Insurance companies provide various types of health care insurance, including coverage for hospital stays, visits to physicians, and surgical procedures. They serve as intermediaries between health care providers and the recipients of health care. Since the cost of health care is so high, individuals seek health care insurance as a form of protection against conditions that cause them to incur large health care expenses.

Types of Health Care Plans Insurance companies offer two types of health care plans: managed health care plans and indemnity plans. The primary difference between the two types of plans is that individuals who are insured by a managed care plan may choose only specified health care providers (hospitals and physicians) who participate in the plan. Individuals who are insured under an indemnity plan can usually choose any provider of health care services. The payment systems of the two types of plans are also distinctly different. The premiums for managed health care plans are generally lower, and payment is typically made directly to the provider. In contrast, indemnity plans reimburse insured individuals for the health care expenses they incur.

Managed health care plans can be classified as **health maintenance organizations** (HMOs) or preferred provider organizations (PPOs). Health maintenance organizations usually require individuals to choose a primary care physician (PCP). The PCP is the "gatekeeper" for that individual's health care. Before patients insured under an HMO can see a specialist, they must first see a PCP to obtain a referral for the specialist. This helps to keep costs for the HMO down, since patients will not see high-cost specialists unless their PCP sees them first and determines whether a referral to a specialist is

necessary. Preferred provider organizations usually allow insured individuals to see any physician without a referral. As a result, PPO insurance premiums are typically higher than HMO insurance premiums.

Affordable Care Act (ACA) The Patient Protection and Affordable Care Act (PPACA), also called the Affordable Care Act (ACA) was passed in 2010. This act attempts to ensure that U.S. citizens obtain health insurance, and therefore maintain better health. It also requires health care providers to satisfy various conditions before they can bill insurance companies, which is intended to prevent health insurance fraud. Insurance companies that provide health insurance are closely monitoring the effects of this law, because it could have a major impact on their reimbursement expenses.

25-3c Business Insurance

Insurance companies provide a wide variety of insurance policies that protect businesses from many types of risk. Some forms of business insurance overlap with property and casualty insurance. Property insurance protects a firm against the risk associated with ownership of property, such as buildings and other assets. It can provide insurance against property damage by fire or theft. Liability insurance can protect a firm against potential liability for harm to others as a result of product failure or a wide range of other conditions. This is a key type of insurance for businesses because of the increasing number of lawsuits filed by customers who claim that they suffered physical injury or emotional distress as a result of products produced by businesses.

Liability insurance can also protect a business against potential liability for claims by its employees. For example, a business may be subject to a lawsuit by an employee who is hurt on the job. Employment liability insurance also covers claims of wrongful termination and sexual harassment.

Some other forms of business insurance are separate from property and casualty insurance. Key employee insurance provides a financial payout if specified employees of a business become disabled or die. The insurance is intended to enable the business to replace the skills of the key employees so that the business can continue. Business interruption insurance protects against losses due to a temporary closing of the business. Credit line insurance covers debt payments owed to a creditor if a borrower dies. Fidelity bond insurance covers losses due to dishonest employees. Marine insurance covers losses due to damage during transport. Malpractice insurance protects business professionals from losses due to lawsuits by dissatisfied customers. Surety bond insurance covers losses due to a contract not being fulfilled. Umbrella liability insurance provides additional coverage beyond that provided by the other existing insurance policies.

25-3d Bond Insurance

Bond insurance protects the investors that purchase bonds in the event that the bond issuers default on their bonds. Many municipal bonds are backed by insurance. Some municipalities are willing to pay for the insurance because it allows them to more easily sell their bonds at lower prices; thus the insurance reduces their cost of borrowing. The risk of default may be minimized when an insurance company insures the bonds. Many insurance companies, including Ambac Financial Group and MBIA, Inc., provide bond insurance.

The insurance on bonds is only as good as the insurance company's ability to cover claims, however. It is possible that both a bond issuer and the insurer backing the bond issuer might not satisfy their obligations, which could cause major losses to institutional investors holding these bonds. A downgrade in the credit rating of a bond insurer is a signal that there is a greater likelihood that the insurance company could not cover a

claim in the event that the bond defaults. Thus, bonds insured by this company will need to offer higher yields in order to compensate for the higher risk. Existing bonds insured by this insurer will experience a decline in price to reflect the higher risk of loss from holding these bonds.

During the credit crisis in 2008, the credit ratings of several large insurance companies were assessed for possible downgrade, and this aroused concerns that many insured bonds might suffer major losses. Consequently, the prices of these insured bonds declined. Some mutual funds that invest heavily in municipal bonds may only be willing to hold bonds that are insured by a company that is assigned the highest credit rating. This situation illustrates the importance of creditworthy insurance companies in facilitating the flow of funds from bond issuers to institutional investors such as mutual funds.

25-3e Mortgage Insurance

Mortgage insurance protects the lender that provides mortgage loans in the event that homeowners cannot cover their payments and default on their mortgages. The insurance is normally intended to cover the lender's losses when the lender is forced to foreclose on the home and sells it for less than the prevailing mortgage amount.

Mortgage lenders commonly require homeowners to obtain mortgage insurance. Sometimes, obtaining the insurance may allow a homeowner to qualify for a lower interest rate on the mortgage. The insurance companies that sell mortgage insurance typically receive periodic insurance premiums for providing this insurance. In the event of a mortgage default, they cover the damages to the creditor.

Credit Default Swaps as a Form of Mortgage Insurance Some insurance companies provide insurance on mortgages by taking a position in credit default swaps, which are privately negotiated contracts that protect investors against the risk of default on particular debt securities. An institutional investor that previously purchased mortgage securities may become concerned that these securities could perform poorly. Therefore, it may be willing to engage in a credit default swap in which it will make monthly or quarterly payments to the counterparty.

Insurance companies commonly serve as the counterparty and have to make payments only if there is a default on the securities covered by the swap. In this event, the insurance companies have to pay the face value of the securities covered by the swap in exchange for those securities. When there are no defaults on the debt securities, the insurance companies benefit from their swap positions because they are not required to make payments. When there are defaults, however, the insurance companies can incur large expenses to cover the payments.

Insurance companies reduce their exposure to various types of insurance through diversification. They have numerous policyholders, and an adverse event that causes an insurance claim from one policyholder is unlikely to happen to many other policyholders at the same time. However, credit defaults on mortgage-backed securities can occur across financial institutions at the same time if mortgage qualification standards are low and the economy is weak. Consequently, diversification among credit default swaps on mortgage-backed securities does not effectively reduce risk. Insurance companies that sold credit default swaps were highly exposed to mortgage conditions during the credit crisis.

25-4 Exposure of Insurance Companies to Risk

The major types of risk faced by insurance companies are interest rate risk, credit risk, market risk, and liquidity risk.

25-4a Interest Rate Risk

Because insurance companies carry a large amount of fixed-rate, long-term debt securities, the market value of their asset portfolios can be very sensitive to interest rate fluctuations. Some insurance companies have reduced their average maturity on securities, which reduces their exposure to interest rate risk.

Since long-term interest rates have been very low in recent years, there is much room for long-term interest rates to rise over time. Because insurance companies invest a large proportion of their funds in long-term debt securities, they are highly exposed to interest rate risk.

25-4b Credit Risk

The corporate bonds, mortgages, and state and local government securities in insurance companies' asset portfolios are subject to credit risk. To deal with this risk, some insurance companies typically invest only in securities assigned a high credit rating. They also diversify among securities issuers so that the repayment problems experienced by any single issuer will have only a minor impact on the overall portfolio.

Because long-term interest rates have been so low in recent years, some insurance companies have shifted more funds out of Treasury bonds and into corporate bonds (including junk bonds) that offer higher yields. However, by striving for higher returns, they are exposed to a much higher degree of credit risk.

25-4c Market Risk

Because insurance companies invest in stock, they are exposed to possible losses on their stock portfolios during weak stock market conditions. When stock prices declined substantially during the credit crisis in 2008, those insurance companies with a large proportion of their investments in stock suffered from their high exposure to market risk. However, many insurance companies that heavily invested in stocks during the 2010–2012 period when market conditions improved generated large gains.

25-4d Liquidity Risk

An additional risk to insurance companies is liquidity risk. A high frequency of claims at a single point in time could force a company to liquidate assets at a time when the market value is low, thereby depressing its performance. Claims due to death are not likely to occur simultaneously, however. Life insurance companies can therefore reduce their exposure to this risk by diversifying the age distribution of their customer base. If the customer base becomes unbalanced and is heavily concentrated in the older age group, life insurance companies should increase their proportion of liquid assets to prepare for a higher frequency of claims.

25-4e Exposure to Risk during the Credit Crisis

As the credit crisis intensified in 2008, many insurance companies experienced losses. Many insurance companies that had invested some of their funds in mortgage-backed securities or in junk bonds experienced losses on their investments. Some insurance companies sold private mortgage insurance to offer protection on mortgages and had to cover insurance claims filed by creditors when homeowners defaulted on their mortgage payments. Other insurance companies incurred losses from their credit default swaps. Furthermore, most insurance companies suffered losses on their stock holdings during the credit crisis.

25-4f Government Rescue of AIG

American International Group (AIG) is the largest insurance company in the world, with annual revenue of more than $100 billion and operations in more than 130 countries. The company had sold credit default swaps that were intended to cover against default for about $440 billion in debt securities, many of which represented subprime mortgages. In 2008, AIG experienced severe financial problems because many of these debt securities defaulted.

If AIG failed, all of the financial institutions that had purchased credit default swaps from AIG to protect against default on their mortgage-backed securities might have failed or suffered severe losses. Because the failure of AIG could have a devastating effect on the insurance industry and the rest of the financial sector, the Federal Reserve bailed out AIG in September 2008 with support from the U.S. Treasury. The Fed may have viewed AIG as too big and too entangled with other financial institutions to fail. The bailout allowed AIG to borrow up to $85 billion from the Federal Reserve over a two-year period, and the government received an equity stake of about 80 percent of AIG. As part of the agreement, AIG was required to sell off some of its businesses in order to increase its liquidity.

The Fed's rescue of AIG occurred one day after it allowed Lehman Brothers to fail. Perhaps one reason for rescuing AIG and not rescuing Lehman Brothers was that AIG had various subsidiaries that were financially sound at the time. The assets in these subsidiaries served as collateral for the loans extended by the federal government to rescue AIG. Thus, the risk of a loss to taxpayers due to the AIG rescue was perceived by the federal government to be low. Conversely, Lehman Brothers did not have adequate collateral available, and so a large loan from the U.S. government could have been costly to U.S. taxpayers.

finance.yahoo.com/insurance
Information about individual insurance companies and updates on the industry.

25-5 Valuation of an Insurance Company

Insurance companies (or insurance company units that are part of a financial conglomerate) are commonly valued by their managers to monitor progress over time or by other financial institutions that are considering an acquisition. The value of an insurance company can be modeled as the present value of its future cash flows. Thus the value of an insurance company should change in response to changes in its expected cash flows (CF) in the future and to changes in the required rate of return (k) by investors:

$$\Delta V = f[\underbrace{\Delta E(CF)}_{+}, \underbrace{\Delta k}_{-}]$$

25-5a Factors That Affect Cash Flows

The change in an insurance company's expected cash flows may be modeled as

$$\Delta E(CF) = f(\underbrace{\Delta \text{PAYOUT}}_{-}, \underbrace{\Delta \text{ECON}}_{+}, \underbrace{\Delta R_f}_{-}, \underbrace{\Delta \text{INDUS}}_{?}, \underbrace{\Delta \text{MANAB}}_{+})$$

where PAYOUT represents insurance payouts to beneficiaries, ECON represents economic growth, R_f represents the risk-free interest rate, INDUS represents industry conditions, and MANAB represents the abilities of the insurance company's management.

Change in Payouts The payouts on insurance claims are somewhat stable for most life insurance companies with a diversified set of customers. In contrast, the payouts on property and casualty claims can be volatile for PC companies.

Change in Economic Conditions Economic growth can enhance an insurance company's cash flows because it increases the level of income of firms and households and can increase the demand for the company's services. During periods of strong economic growth, debt securities maintained by insurance companies are less likely to default. In addition, equity securities maintained by insurance companies should perform well because the firms represented by these securities should perform well.

Change in the Risk-Free Interest Rate Some of an insurance company's assets (such as bonds) are adversely affected by rising interest rates. Thus the valuation of an insurance company may be inversely related to interest rate movements.

Change in Industry Conditions Insurance companies are subject to industry conditions, including regulatory constraints, technology, and competition within the industry. For example, they now compete against various financial institutions when offering some services. As regulators have reduced barriers, competition within the insurance industry has become more intense.

Change in Management Abilities An insurance company has control over the composition of its managers and its organizational structure. Its managers can attempt to make internal decisions that will capitalize on the external forces (economic growth, interest rates, regulatory constraints) that the company cannot control. Thus, the management skills of an insurance company can influence its expected cash flows. In particular, skillful management is needed to determine the likelihood of events that could cause massive payouts to policyholders.

25-5b Factors That Affect the Required Rate of Return by Investors

The required rate of return by investors who invest in an insurance company can be modeled as

$$\Delta k = f(\underbrace{\Delta R_f}_{+}, \underbrace{\Delta RP}_{-})$$

where R_f represents the risk-free interest rate and RP represents the risk premium.

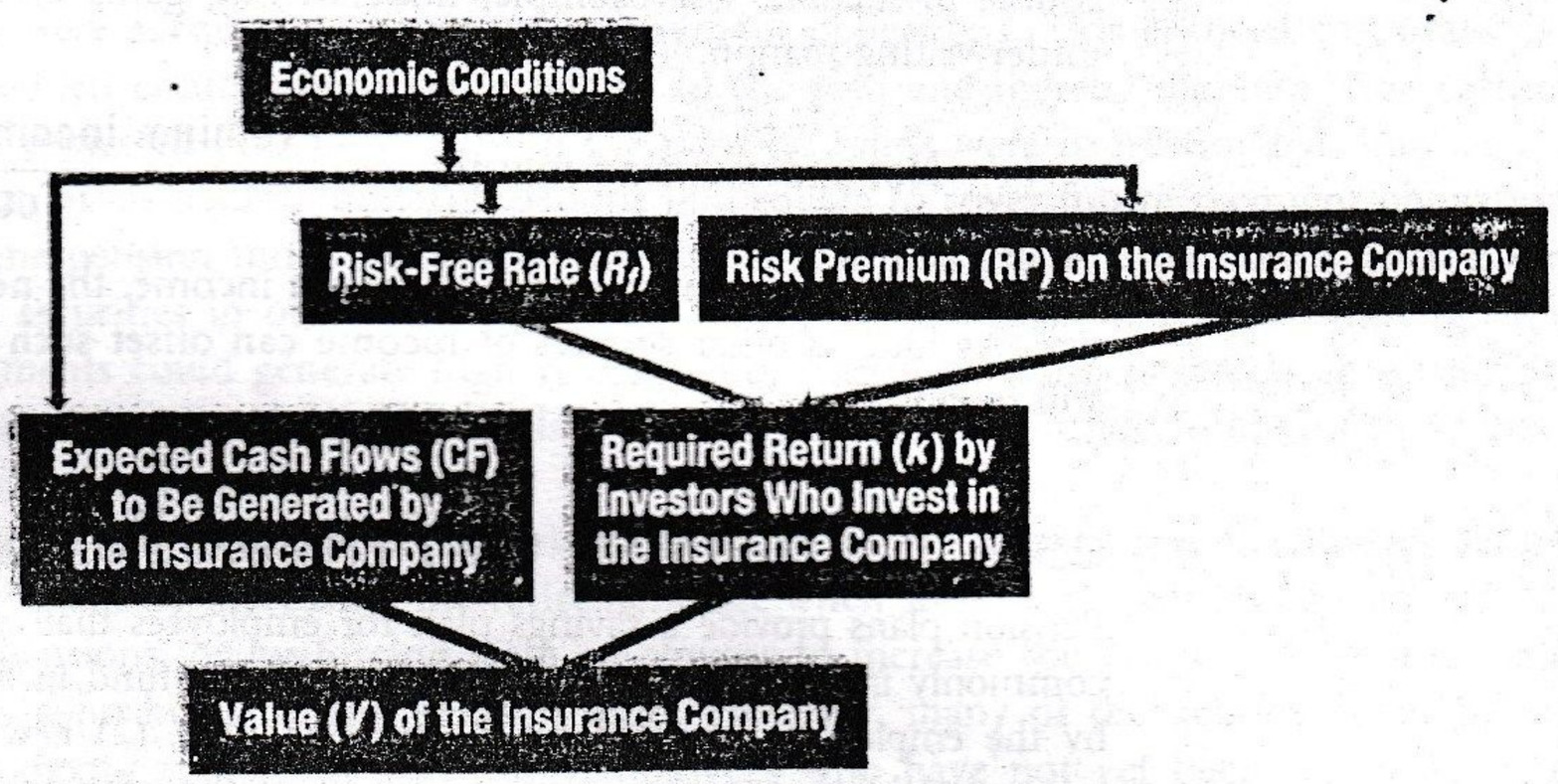
The risk-free interest rate is normally expected to be positively related to inflation, economic growth, and the budget deficit level but inversely related to money supply growth (assuming it does not cause inflation). The risk premium on an insurance company is inversely related to economic growth. It can also be affected by industry conditions (such as regulations) and management abilities.

Exhibit 25.7 provides a framework for valuing an insurance company based on the preceding discussion. In general, the value of an insurance company is favorably affected by strong economic growth, a reduction in interest rates, and strong management capabilities.

25-5c Indicators of Value and Performance

Some of the more common indicators of an insurance company's value and performance are available in investment service publications such as *Value Line*. A time-series assessment of the dollar amount of life insurance and/or PC insurance premiums indicates the growth in the company's insurance business. A time-series analysis of investment income can be used to assess the performance of the company's portfolio managers. However, the dollar amount of investment income is affected by several factors that are not under the control of portfolio managers, such as the amount of funds received as

Exhibit 25.7 A Framework for Valuing an Insurance Company



- A stronger economy leads to more services being provided by insurance companies and better cash flows. It may also enhance stock valuations and therefore can enhance the valuations of stocks held by the insurance company.
- A lower risk-free rate results in more favorable valuations of the bonds held by the insurance company.
- The valuation of an insurance company is also influenced by industry conditions and the firm's management (not shown in the diagram). These factors affect the risk premium (and therefore the required return by investors) and the expected cash flows to be generated by the insurance company. In particular, property and casualty companies are exposed to court rulings that result in large damages awards paid by insurance, and health insurance companies are exposed to regulations regarding reimbursement for health care services.

premiums that can be invested in securities and market interest rates. In addition, a relatively low level of investment income may result from a high concentration in stocks that pay low or no dividends rather than from poor performance.

Indicator of Liquidity Because insurance companies have unique characteristics, the financial ratios of other financial institutions are generally not applicable. An insurance company's liquidity can be measured using the following ratio:

$$\text{Liquidity ratio} = \frac{\text{Invested assets}}{\text{Loss reserves and unearned premium reserves}}$$

The higher the ratio, the more liquid the company. This ratio can be evaluated by comparing it to the industry average.

Indicators of Profitability The profitability of insurance companies is often assessed using the return on net worth (or policyholders' surplus) as a ratio, as follows:

$$\text{Return on net worth} = \frac{\text{Net profit}}{\text{Policyholders' surplus}}$$

Net profit consists of underwriting profits, investment income, and realized capital gains. Changes in this ratio over time should be compared to changes in the industry norms, as

the norm is quite volatile over time. The return on net worth tends to be quite volatile for PC insurance companies because of the volatility in their claims.

Although the net profit reflects all income sources and therefore provides only a general measure of profitability, various financial ratios can be used to focus on a specific source of income. For example, underwriting gains or losses are measured by the net underwriting margin:

$$\text{Net underwriting margin} = \frac{\text{Premium income} - \text{Policy expenses}}{\text{Total assets}}$$

When policy expenses exceed premium income, the net underwriting margin is negative. As long as other sources of income can offset such a loss, however, net profit will still be positive.

25-6 Background on Pension Funds

Pension plans provide a savings plan for employees that can be used for retirement. They commonly increase the amount of money in the fund in four ways: (1) new contributions by the employee sponsored by the pension plan, (2) new contributions by the employer sponsored by the pension plan on behalf of the employee, and (3) dividends or interest earned by the fund that is due to its investment in equity or debt securities, and (4) appreciation in the values (capital gains) of the securities in which the fund has invested. In aggregate, most of the contributions come from the employer. Pension funds are major investors in stocks, bonds, and various types of loan packages such as mortgage-backed securities.

25-6a Public versus Private Pension Funds

Pension funds can be categorized as public or private pension funds.

Public Pension Funds Public pension funds can be either state, local, or federal. The best-known government pension fund is Social Security. In addition to that system, all government employees and almost half of all nongovernment employees participate in other pension funds.

Many public pension plans are funded on a pay-as-you-go basis. Thus, existing employee and employer contributors are essentially supporting previous employees. At some point, this strategy could cause the future benefits owed to outweigh contributions to such an extent that the pension fund would be unable to fulfill its promises or would have to obtain more contributions to do so.

Private Pension Plans Private pension plans are created by private agencies, including industrial, labor, service, nonprofit, charitable, and educational organizations. Some pension funds are so large that they are major investors in corporate securities.

25-6b Defined-Benefit versus Defined-Contribution Plans

Pension funds are commonly categorized as defined-benefit or defined-contribution plans depending on how contributions are made and on the level of benefits provided.

Defined-Benefit Plans With a **defined-benefit plan**, contributions are dictated by the benefits that will eventually be provided. The future pension obligations of a defined-benefit plan are uncertain because the obligations are stated in terms of fixed payments to retirees. These payments are dependent on salary levels, retirement ages, and life expectancies. Even if future payment obligations can be accurately predicted, the amount

the plan needs today will be uncertain because of the uncertain rate of return on today's investments. The higher the future return on the plan's investments, the lower the level of funds that must be invested today to satisfy future payments.

Many defined-benefit plans used optimistic projections of the rate of return to be earned on their investments, which created the appearance that their existing investments were adequate to cover future payment obligations. This allowed corporations to reduce their contributions (an expense) to the plan and thereby increase their earnings. When projected rates of return on the pension funds were overestimated, however, the pension funds became underfunded, or inadequate to cover future payment obligations.

Some pension funds make risky investments in real estate, junk bonds, and international securities in order to justify their high projected rates of return. Although these investments could generate high returns, they might instead generate large losses. Thus it is possible that some pension plans could be substantially underfunded if these investments perform poorly.

Some state government agencies attempted to resolve their underfunded defined-benefit plans by increasing the retirement age when state employees could start receiving their pensions, or by forcing state employees to increase the proportion of their salary that is contributed to the pension fund. However, many of the actions taken by state governments apply only to future employees who have not yet been hired. Thus, the actions taken by state government agencies will not provide a quick cure to the underfunded pensions. Consequently, some states face a very real risk that their pension fund will run out of money. The concerns are well publicized, but pension reform has generally been lacking because pension plans do not want to take actions that reduce benefits to existing state employees.

The state of California is a prime example of problems associated with pension funding. In 1999, it set high defined benefits for its state employees. It did not raise the required contributions by employees because it presumed that its return on the invested funds would be sufficient to cover future obligations. It substantially overestimated its returns on investment, as it only earned about 75 percent of what it projected. Consequently, the value of its pension fund contributions did not grow over time as much as was necessary to cover the future pension fund obligations. This resulted in a pension fund deficiency of about $2 billion per year over the 2000–2012 period.

The state has to make up the difference between its pension obligations to state employees and the contribution funds received from employees. It has cut expenditures in many ways to offset its excessive pension expenses, such as allocating smaller amounts of funds for state education. In essence, the state education system has been penalized because of unrealistic pension promises made about the expected return to be earned on pensions many years ago.

These types of problems with government pensions are common. The large budget deficits due to large pensions were not anticipated because of overly optimistic projections about the return on pension fund investments. The retirees who were promised large pensions want what they were promised. Some governments are changing their pension plan structure, which reduces the pension benefits for new employees. However, this does not solve the deficiency in the existing budgets to cover pension obligations.

Defined-Contribution Plans A **defined-contribution plan** provides benefits that are determined by the accumulated contributions and the fund's investment performance. Some firms match a portion of the contribution made by their employees. With this type of plan, a firm knows with certainty the amount of funds to contribute, whereas that amount is undetermined in a defined-benefit plan. With a defined-contribution

plan, however, the benefits to the participants are uncertain. Firms commonly hire an investment company to manage the pension portfolios of employees.

Defined-contribution plans outnumber defined-benefit plans, but defined-benefit plans have more participants and a greater aggregate value of assets. New plans allow employees more flexibility to choose what they want. In recent years, defined-benefit plans have commonly been replaced by defined-contribution plans. Employees can often decide the pace of their contributions and how their contributions will be invested. Common investment alternatives include stocks, investment-grade bonds, real estate, and money market securities. Communications from the benefits coordinator to the employees have become much more important because employees now have more influence on their pension plan contributions and the investment approach used to invest the premiums.

25-6c Pension Fund Participation in Financial Markets

To set up a pension fund, a sponsor corporation establishes a trust pension fund through a commercial bank's trust department or an insured pension fund through an insurance company. The financial institution that is delegated the task of managing the pension fund then receives periodic contributions and invests them. Many of the transactions by pension funds in the financial markets finance economic growth, as illustrated in Exhibit 25.8. Pension funds are major participants in stock and bond offerings and thereby finance corporate expansion. They are also major participants in bond offerings by the Treasury and municipalities and thereby finance government spending.

Many of pension funds' investments in the stock, bond, and mortgage markets require the brokerage services of securities firms. Managers of pension funds instruct securities firms on the type and amount of investment instruments to purchase. Exhibit 25.9 summarizes the interaction between pension funds and other financial institutions.

Exhibit 25.10 summarizes how pension fund managers participate in various financial markets. Because pension fund portfolios are normally dominated by stocks and bonds, the participation of pension fund managers in the stock and bond markets is obvious. Pension fund managers also participate in money and mortgage markets to fill out the remainder of their portfolios. They sometimes utilize the futures and options markets as well in order to partially insulate their portfolio performance from interest rate and/or stock market movements.

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www.eric.org
Information about pension guidelines.

Exhibit 25.8 How Pension Funds Finance Economic Growth

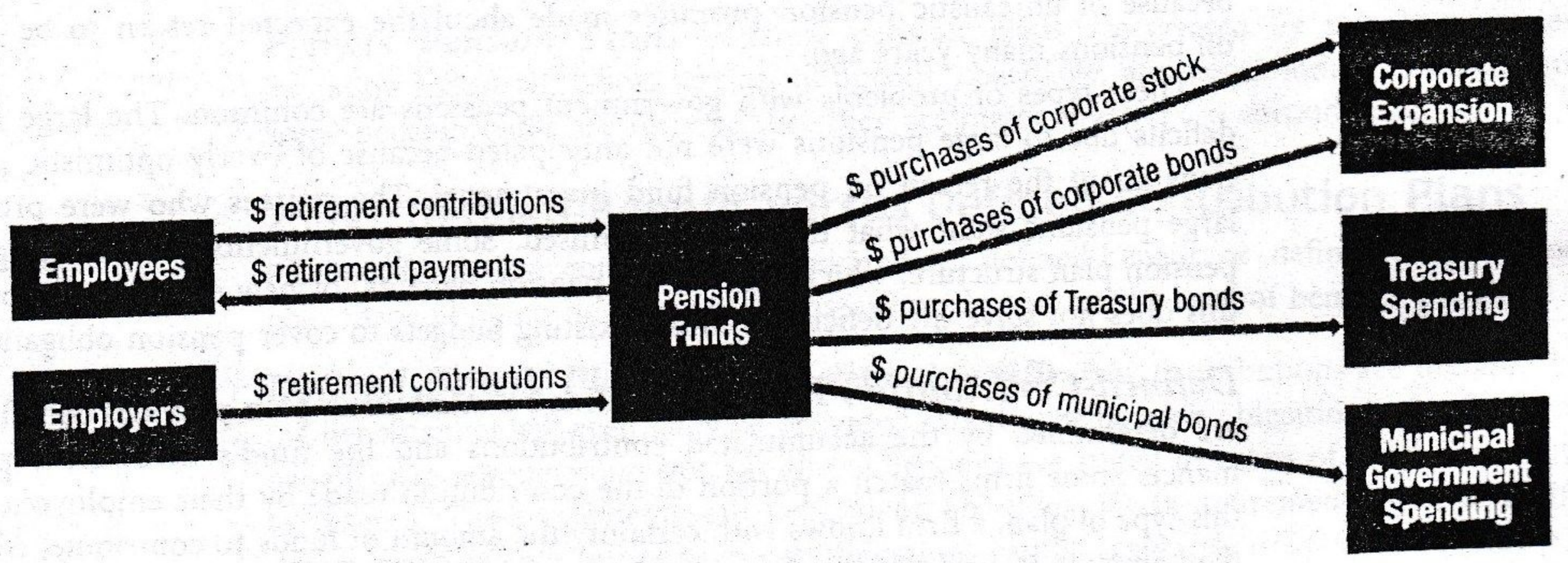


Exhibit 25.9 Interaction between Pension Funds and Other Financial Institutions

TYPE OF FINANCIAL INSTITUTION	INTERACTION WITH PENSION FUNDS
Commercial banks	• Sometimes manage pension funds. • Sell commercial loans to pension funds in the secondary market.
Insurance companies	• Create annuities for pension funds.
Mutual funds	• Serve as investments for some pension funds.
Securities firms	• Execute securities transactions for pension funds. • Offer investment advice to pension portfolio managers. • Underwrite newly issued stocks and bonds that are purchased by pension funds.

Exhibit 25.10 Participation of Pension Funds in Financial Markets

FINANCIAL MARKET	HOW PENSION FUNDS PARTICIPATE IN THIS MARKET
Money markets	• Pension fund managers maintain a small proportion of liquid money market securities that can be liquidated when they wish to increase investment in stocks, bonds, or other alternatives.
Bond markets	• At least 25 percent of a pension fund portfolio is typically allocated to bonds. Portfolios of defined-benefit plans usually have a higher concentration of bonds than defined-contribution plans. Pension fund managers frequently conduct transactions in the bond market.
Mortgage markets	• Pension portfolios frequently contain some mortgages, although the relative proportion is low compared with bonds and stocks.
Stock markets	• At least 30 percent of a pension fund portfolio is typically allocated to stocks. In general, defined-contribution plans usually have a higher concentration of stocks than defined-benefit plans.
Futures markets	• Some pension funds use futures contracts on debt securities and on bond indexes to hedge the exposure of their bond holdings to interest rate risk. In addition, some pension funds use futures on stock indexes to hedge against market risk. Other pension funds use futures contracts for speculative purposes.
Options markets	• Some pension funds use stock options to hedge against movements of particular stocks. They may also use options on futures contracts to secure downside protection against bond price movements.
Swap markets	• Pension funds commonly engage in interest rate swaps to hedge the exposure of their bond and mortgage portfolios to interest rate risk.

25-6d Pension Regulations

The regulation of pension funds varies with the type of plan. All plans must comply with the set of Internal Revenue Service tax rules that apply to pension fund income. For defined-contribution plans, the sponsoring firm's main responsibility is its contributions to the fund.

ERISA Defined-contribution plans are also subject to guidelines specified by the **Employee Retirement Income Security Act** (ERISA) of 1974 (also called the Pension Reform Act) and its 1989 revisions. This act requires a pension fund to choose one of

two vesting schedule options, which determine when an employee has a legal right to the contributed funds:

1. 100 percent vesting after five years of service
2. Graded vesting, with 20 percent vesting in the third year, 40 percent in the fourth, 60 percent in the fifth, 80 percent in the sixth, and 100 percent in the seventh year

The act also requires that any contributions be invested in a prudent manner, meaning that pension funds should concentrate their investments in high-grade securities. Although this was implicitly expected before, ERISA made this so-called fiduciary responsibility (monitored by the U.S. Department of Labor) explicit to encourage portfolio managers to serve the interests of the employees rather than themselves. Pension plans can face legal ramifications if they do not comply.

In addition, ERISA allows employees changing employers to transfer any vested amount into the pension plan of their new employer or to invest it in an Individual Retirement Account (IRA). With either alternative, taxes on the vested amount are still deferred until retirement when the funds become available.

The Pension Benefit Guaranty Corporation ERISA established the **Pension Benefit Guaranty Corporation (PBGC)** to provide insurance on pension plans. This federally chartered agency guarantees that participants of defined-benefit pension plans will receive their benefits upon retirement. If the pension fund is incapable of fully providing the benefits promised, the PBGC will make up the difference. The PBGC does not receive government support. It is financed by annual premiums, income from assets acquired from terminated pension plans, and income generated by investments. It also receives employer-liability payments when an employer terminates its pension plan.

About 44 million Americans, or one-third of the workforce, have pension plans insured by the PBGC. As a wholly owned independent government agency, it differs from other federal regulatory agencies in that it has no regulatory powers.

The PBGC monitors pension plans periodically to determine whether they can adequately provide the benefits they have guaranteed. If a plan is judged inadequate, it is terminated and the PBGC (or a PBGC appointee) takes control as the fund manager. The PBGC has a claim on part of a firm's net worth if it is needed to support the underfunded pension assets.

The PBGC's funding requirements depend on all the pension funds it monitors. Because the market values of these funds are similarly susceptible to economic conditions, funding requirements are volatile over time. A poor economic environment will depress stock prices and simultaneously reduce the asset values of most pension funds.

Pension Protection Act of 2006 If a company's defined-benefit pension plan is underfunded, the Pension Protection Act of 2006 requires the company to increase its contributions to the pension plan so that it will be fully funded within seven years. Prior to the act, some corporations' pension plans were underfunded by more than $1 billion. During the credit crisis in 2008, many large companies experienced losses on their pension portfolios because of their investments in mortgage-backed securities and stocks. Thus, the gap between what they needed to pay their retired employees versus the amount of funds available in their pension plans increased. Consequently, some companies had to revise their operating plans for 2009 in order to contribute more cash to their pension plans. When companies use more of their cash to boost underfunded pension plans, they have less cash to use for other purposes. Thus, their operating performance may suffer when they have to increase contributions to their pension plans.

WEB

www.pensionfunds.com
News related to pension funds.

B.F.M.I-11th - 46 B

25-7 Pension Fund Management

Regardless of the manner in which funds are contributed to a pension plan, the funds received must be managed (invested) until needed to pay benefits. Private pension portfolios are dominated by common stock. Public pension portfolios are somewhat evenly invested in corporate bonds, stock, and other credit instruments.

Pension fund management can be classified according to the strategy used to manage the portfolio. With a **matched funding** strategy, investment decisions are made with the objective of generating cash flows that match planned outflow payments. An alternative strategy is **projective funding**, which offers managers more flexibility in constructing a pension portfolio that can benefit from expected market and interest rate movements. Some pension funds segment their portfolios, with part used for matched funding and the rest for projective funding.

An informal method of matched funding is to invest in long-term bonds to fund long-term liabilities and in intermediate bonds to fund intermediate liabilities. The appeal of matching is the assurance that future liabilities are covered regardless of market movements. Matching limits the manager's discretion, however, because it allows only investments that match future payouts. For example, portfolio managers required to use matched funding would need to avoid callable bonds, because these bonds could potentially be retired before maturity. This requirement precludes consideration of many high-yield bonds. In addition, each liability payout may require a separate investment to which it can be perfectly matched; this would require several small investments and increase the pension fund's transaction costs.

Pension funds that are willing to accept market returns on bonds can purchase bond index portfolios that have been created by investment companies. The bond index portfolio may include investment-grade corporate bonds, Treasury bonds, and U.S. government agency bonds. It does not include the entire set of these bonds but includes enough of them to mirror market performance. Investing in a market portfolio is a passive approach that does not require any analysis of individual bonds. Some pension funds are not willing to accept a totally passive approach, so they compromise by using only a portion of their funds to purchase a bond market portfolio.

Equity portfolio indexes that mirror the stock market are also available for passive portfolio managers. These index funds have become popular over time because they avoid the transaction costs associated with frequent purchases and sales of individual stocks.

25-7a Management of Insured versus Trust Portfolios

Some pension plans are managed by life insurance companies. Contributions to such plans, called insured plans, are often used to purchase annuity policies so that the life insurance companies can provide benefits to employees upon retirement.

As an alternative, some pension funds are managed by the trust departments of financial institutions, such as commercial banks. The trust department invests the contributions and pays benefits to employees upon retirement. Although the day-to-day investment decisions of the trust department are controlled by the managing institution, the corporation owning the pension normally specifies general guidelines that the institution should follow. These guidelines might include:

- The percentage of the portfolio that should be used for stocks or bonds
- A desired minimum rate of return on the overall portfolio
- The maximum amount to be invested in real estate
- The minimum acceptable quality ratings for bonds

- The maximum amount to be invested in any one industry
- The average maturity of bonds held in the portfolio
- The maximum amount to be invested in options
- The minimum size of companies in which to invest

There is a significant difference between the asset composition of pension portfolios managed by life insurance companies and those managed by trust departments. Assets managed by insurance companies are designed to create annuities, whereas the assets managed by a trust department still belong to the corporation. The insurance company becomes the legal owner of the assets and is allowed to maintain only a small portion of its assets as equities. Therefore insurance companies concentrate on bonds and mortgages. Conversely, the pension portfolios managed by trusts concentrate on stocks.

Pension portfolios managed by trusts offer potentially higher returns than insured plans and also have a higher degree of risk. The average return of trust plans is much more volatile over time.

25-7b Management of Portfolio Risk

Pension fund managers commonly struggle with the decision of whether to pursue investments with high expected return that have high risk. If they can achieve higher returns on their existing funds, they can more easily meet the obligations they have to the participants in the plan. However, the strategy of attempting to earn a return of a few percentage points higher can backfire and cause a loss of 20 percent or more. For example, some pension funds invest in private equity funds, which invest in companies and often manage them with the goal of increasing their value, and then selling the companies (as explained in Chapter 10). This type of investment by a pension fund could earn a very large return. However, it could also result in a very large loss.

The degree of risk taken by pension fund managers is partially influenced by their compensation incentives. In some cases, the managers may be rewarded if the portfolio performs very well yet not be penalized if the portfolio performs poorly. Under these conditions, the portfolio managers have an incentive to take more risk than what is appropriate.

Many pension fund managers pursued risky investments prior to the credit crisis, which resulted in major losses during the credit crisis. Since then, some state governments have imposed restrictions on the types of investments that their pension fund managers can pursue. The restrictions will result in safer investments, but these investments will likely generate relatively low returns. The restrictions tend to be imposed after a period in which there are many losses but eliminated after a period in which other pensions achieve comparatively higher returns by pursuing riskier investments.

Hedging Risk Pension fund portfolio managers are very concerned about interest rate risk. If they hold long-term, fixed-rate bonds, the market value of their portfolio will decrease during periods when interest rates increase. They may periodically hedge against interest rate movements by selling bond futures contracts.

Many portfolio managers periodically sell futures contracts on stock indexes to hedge against market downturns. Portfolio managers of pension funds can obtain various types of insurance to limit the risk of the portfolio. For example, a policy could insure beyond a specified decline (such as 10 percent) in the asset value of a pension fund. This insurance allows managers to use more aggressive investment strategies. The cost of the insurance depends on the provisions of the contract and the length of time the portfolio is to be insured.

The pension funds of some companies, such as Lockheed Martin, simply concentrate investment in stocks and bonds and do not employ immunization techniques (to hedge

the portfolio against risk). Lockheed Martin has generally focused on highly liquid investments so that the proportion of stocks and bonds within the portfolio can be revised in response to market conditions.

www.bloomberg.com Links to corporate directory search (database with over 10,000 U.S. companies, links to financial data, quotes, company news, etc.).

25-7c Corporate Control by Pension Funds

Pension funds in aggregate hold a substantial portion of the common stock outstanding in the United States. These funds are increasingly using their ownership as a means of influencing policies of the corporations whose stock they own. In particular, the California Public Employees Retirement System (CALPERS) and the New York State Government Retirement Fund have taken active roles in questioning specific policies and suggesting changes to the board of directors at some corporations. Corporate managers consider the requests of pension funds because of the large stake the pension funds have in the corporations. As pension funds exert some corporate control to ensure that the managers and board members serve the best interests of shareholders, they can benefit because of their position as large shareholders.

25-8 Performance of Pension Funds

Pension funds commonly maintain a portfolio of stocks and a portfolio of bonds. Because pension funds focus on investing pension contributions until payments are provided, the performance of the investments is critical to the pension fund's success.

25-8a Pension Fund's Stock Portfolio Performance

The change in the value of a pension fund's portfolio focusing on stocks can be modeled as

$$\Delta V = f(\Delta MKT, \Delta MANAB)$$

where MKT represents general stock market conditions and MANAB represents the abilities of the pension fund's management.

Change in Market Conditions The stock portfolio's performance is usually closely related to market conditions. Most pension funds' stock portfolios performed well during the 2003–2007 period when market conditions were strong, poorly during the credit crisis in 2008–2009, and well when the market rebounded in the 2010–2012 period.

Change in Management Abilities Stock portfolio performance can vary among pension funds in a particular time period because of differences in management abilities. The composition of the stocks in a pension fund's portfolio is determined by the fund's portfolio managers. In addition, a pension fund's operating efficiency affects the expenses the fund incurs and therefore affects its performance. A fund that is managed efficiently so that its expenses are low may be able to achieve higher returns even if its portfolio performance is about the same as the performance of other pension funds' portfolios.

25-8b Pension Fund's Bond Portfolio Performance

The change in the value of a pension fund's bond portfolio (including mortgages or mortgage-backed securities) can be modeled as

$$\Delta V = f(\Delta R_f, \Delta RP, \Delta MANAB)$$

where R_f represents the risk-free rate, RP represents the risk premium, and MANAB represents the abilities of the portfolio managers.

Impact of Change in the Risk-Free Rate The prices of bonds tend to be inversely related to changes in the risk-free interest rate. In periods when the risk-free interest rate declines substantially, the required rate of return by bondholders declines and most bond portfolios managed by pension funds perform well.

Recently, long-term interest rates have been very low. Consequently, the future return that can be earned by pension funds on low-risk long-term bonds is very low if the bonds are held until maturity. If the bonds are not held to maturity, there is not much potential for the prices of these bonds to increase, because the required rates of return cannot go much lower. However, there is significant interest rate risk because long-term rates could rise from their prevailing levels over time, which would cause the prices to decline.

Impact of Change in the Risk Premium When economic conditions deteriorate, the risk premium required by bondholders usually increases, which results in a higher required rate of return (assuming no change in the risk-free rate) and lower prices on risky bonds. In periods when risk premiums increase, bond portfolios of pension funds that contain a high proportion of risky bonds perform poorly.

Impact of Management Abilities The performance levels of bond portfolios can vary as a result of differences in management abilities. If a pension fund's portfolio managers can effectively adjust the bond portfolio in response to accurate forecasts of changes in interest rates or shifts in bond risk premiums, that fund's bond portfolio should experience relatively high performance. In addition, a pension fund's operating efficiency affects the expenses it incurs. If a bond portfolio is managed efficiently so that its expenses are low, it may be able to achieve relatively high returns even if its investments perform the same as those of other pension funds.

As time passes, portfolio managers might change the composition of a pension portfolio, which can alter the portfolio's potential return and its risk. Because long-term interest rates have been so low recently, there may be a natural tendency for portfolio managers to switch out of low-risk bonds into high-yield bonds. That is, they attempt to offset the low long-term risk-free rate with a high-risk premium on the bonds. However, this strategy exposes the portfolio to higher risk, as the high-yield bonds are more likely to default on their payments. Alternatively, portfolio managers seeking to achieve better returns than what is available on low-risk bonds might invest more of their funds in stocks (assuming that there are no restrictions on the portfolio that could prevent such a strategy). This strategy also exposes the portfolio to higher risk, as the stocks may suffer significant declines in value when stock market conditions are weak.

25-8c Performance Evaluation

If a manager has the flexibility to adjust the relative proportion of stocks versus bonds, the portfolio performance should be compared to a benchmark representing a passive strategy. For example, assume that the general long-run plan is a balance of 60 percent bonds and 40 percent stocks. Also assume that management has decided to create a more bond-intensive portfolio in anticipation of lower interest rates. The risk-adjusted returns on this actively managed portfolio could be compared to a benchmark portfolio composed of 60 percent bond index and 40 percent stock index.

Any difference between the performance of the pension portfolio and the benchmark portfolio would result from (1) the manager's shift in the relative proportion of bonds versus stocks and (2) the composition of bonds and stocks within the respective

portfolios. A pension portfolio could conceivably have stocks that outperform the stock index and bonds that outperform the bond index yet be outperformed by the benchmark portfolio when the shift in the relative bond/stock proportion backfires. In this example, a period of rising interest rates could cause the pension portfolio to be outperformed by the benchmark portfolio.

In many cases, the performances of stocks and bonds in a pension fund are evaluated separately. Stock portfolio risk is usually measured by the portfolio's beta, or the sensitivity to movements in a stock index (such as the S&P 500). Bond portfolio risk can be measured by the bond portfolio's sensitivity to a bond index or to a particular proxy for interest rates.

25-8d Performance of Pension Portfolio Managers

Many pension funds hire several portfolio managers to manage the assets. The general objective of portfolio managers is to make investments that will earn a large enough return to adequately meet future payment obligations. Some research has found that managed pension portfolios perform no better than market indexes. During the credit crisis, some pension portfolios performed much worse than market indexes because their managers invested heavily in risky mortgages and mortgage-backed securities. For example, the state of Washington lost $90 million on its investment in securities issued by Lehman Brothers (which filed for bankruptcy after experiencing severe losses in mortgage-related securities), and the state of New York lost hundreds of millions of dollars on its investment in similar securities.

Pension funds could consider using a passive management strategy such as investing in indexed mutual funds, which would perform as well as the market without requiring the pension plan to incur expenses for portfolio management. In this way, they could ensure that the investment strategy serves the needs of the pension fund participants.

Summary

- Insurance companies offer insurance on life, property, health, business, bonds, and mortgages. Insurance companies commonly use their funds to invest in government securities, corporate securities, mortgages, and real estate.
- Insurance companies are exposed to interest rate risk because they tend to maintain large bond portfolios whose values decline when interest rates rise. They are also exposed to credit risk and market risk as a result of their investments in corporate debt securities, mortgages, stocks, and real estate.
- The value of an insurance company is based on its expected cash flows and the required rate of return by investors. The payouts of claims (cash outflows) are somewhat predictable for life insurance firms, so they tend to have stable cash flows. In contrast, the payouts of claims for property and casualty insurance and other types of insurance services are subject to much uncertainty.
- Pension funds provide a savings plan for retirement. For defined-benefit pension plans, the contributions are dictated by the benefits that are specified. For defined-contribution pension plans, the benefits are determined by the accumulated contributions and the returns on the pension fund investments.
- Pension funds can use a matched funding strategy, in which investment decisions are made with the objective of generating cash flows that match planned outflow payments. Alternatively, pension funds can use a projective funding strategy, which attempts to capitalize on expected market or interest rate movements.
- The valuation and performance of pension fund portfolios is highly influenced by market conditions. However, the valuation of some pension portfolios are more exposed to risk than others. Those pension portfolios that contained risky mortgages and mortgage-backed securities experienced major losses during the credit crisis.

POINT COUNTER-POINT

Should Pension Fund Managers Be More Involved with Corporate Governance?

Point No. Pension fund managers should focus on assessing stock valuations and determining which stocks are undervalued or overvalued. If pension funds own stocks of firms that perform poorly, the pension fund managers can penalize those firms by dumping those stocks and investing their money in other stocks. If pension funds focus too much on corporate governance, they will lose sight of their goal of serving the pension recipients.

Counter-Point Yes. To the extent that pension funds can use governance to improve the performance of the firms in which they invest, they can improve the funds' performance. In this way, they also improve the returns to the pension recipients.

Who Is Correct? Use the Internet to learn more about this issue and then formulate your own opinion.

QUESTIONS AND APPLICATIONS

1. Life Insurance How is whole life insurance a form of savings to policyholders?

2. Whole Life versus Term Insurance How do whole life and term insurance differ from the perspective of insurance companies? From the perspective of the policyholders?

3. Universal Life Insurance Identify the characteristics of universal life insurance.

4. Group Plan Explain group plan life insurance.

5. Assets of Life Insurance Companies What are the main assets of life insurance companies? Identify the main categories. What is the main use of funds by life insurance companies?

6. Financing the Real Estate Market How do insurance companies finance the real estate market?

7. Policy Loans What is a policy loan? When are policy loans popular? Why?

8. Government Rescue of AIG Why did the government rescue AIG?

9. Managing Credit Risk and Liquidity Risk How do insurance companies manage credit risk and liquidity risk?

10. Liquidity Risk Discuss the liquidity risk experienced by life insurance companies and by property and casualty (PC) insurance companies.

11. PC Insurance What purpose do property and casualty insurance companies serve? Explain how the characteristics of PC insurance and life insurance differ.

12. Cash Flow Underwriting Explain the concept of cash flow underwriting.

13. Impact of Inflation on Assets Explain how a life insurance company's asset portfolio may be affected by inflation.

14. Reinsurance What is reinsurance?

15. NAIC What is the NAIC, and what is its purpose?

16. PBGC What is the main purpose of the Pension Benefit Guaranty Corporation (PBGC)?

17. Defined-Benefit versus Defined-Contribution Plan Describe a defined-benefit pension plan. Describe a defined-contribution plan, and explain how it differs from a defined-benefit plan.

18. Guidelines for a Trust What type of general guidelines may be specified for a trust that is managing a pension fund?

19. Management of Pension Portfolios Explain the general difference in the composition of pension portfolios managed by trusts versus those managed by insurance companies. Explain why this difference occurs.

20. Private versus Public Pension Funds Explain the general difference between private pension funds and public pension funds.

21. Exposure to Interest Rate Risk How can pension funds reduce their exposure to interest rate risk?

22. Pension Agency Problems The objective of the pension fund manager for McCanna, Inc., is not the

same as the objective of McCanna's employees participating in the pension plan. Why?

23. ERISA Explain how ERISA affects employees who change employers.

24. Adverse Selection and Moral Hazard Problems in Insurance Explain the adverse selection and moral hazard problems in insurance. Gorton Insurance Company wants to properly price its auto insurance, which protects against losses due to auto accidents. If Gorton wants to avoid the adverse selection and moral hazard problems, should it assess the behavior of insured people, uninsured people, or both groups? Explain.

Interpreting Financial News

Interpret the following comments made by Wall Street analysts and portfolio managers.

a. "Insurance company stocks may benefit from the recent decline in interest rates."

b. "Insurance company portfolio managers may serve as shareholder activists to implicitly control a corporation's actions."

c. "If a life insurance company wants a portfolio manager to generate sufficient cash to meet expected payments to beneficiaries, it cannot expect the manager to achieve relatively high returns for the portfolio."

Managing in Financial Markets

Assessing Insurance Company Operations As a consultant to an insurance company, you have been asked to assess the asset composition of the company.

a. The insurance company has recently sold a large amount of bonds and invested the proceeds in real estate. Its logic was that this would reduce the exposure of its assets to interest rate risk. Do you agree? Explain.

b. This insurance company currently has a small amount of stock. The company expects that it will need to liquidate some of its assets soon to make payments to beneficiaries. Should it shift its bond holdings (with short terms remaining until maturity) into stock in order to strive for a higher rate of return before it needs to liquidate this investment?

c. The insurance company maintains a higher proportion of junk bonds than most other insurance companies. In recent years, junk bonds have performed very well during a period of strong economic growth, as the yields paid by junk bonds have been well above those of high-quality corporate bonds. There have been very few defaults over this period. Consequently, the insurance company has proposed that it invest more heavily in junk bonds, as it believes that the concerns about junk bonds are unjustified. Do you agree? Explain.

Flow of Funds Exercise

How Insurance Companies Facilitate the Flow of Funds

Carson Company is considering a private placement of equity with Secura Insurance Company.

a. Explain the interaction between Carson Company and Secura. How will Secura serve Carson's needs, and how will Carson serve Secura's needs?

b. Why does Carson interact with Secura Insurance Company instead of trying to obtain the funds directly from individuals who pay premiums to Secura?

c. If Secura's investment performs well, who benefits? Is it worthwhile for Secura to closely monitor Carson Company's management? Explain.

Internet/Excel Exercises

1. Obtain a life insurance quotation online using the website www.eterm.com. Fill in information about you (or a family member or friend) and obtain a quotation for a $1 million life insurance policy. What are the monthly and annual premiums for the various term lengths? Next, leaving all other information unchanged, change your gender. Are the premiums the same or different? Do you think insurance premiums are higher or lower for insurance companies operating entirely through the Internet?

2. Select a publicly traded insurance company of your choice. Go to its website and retrieve its most recent annual report. Summarize the company's main business. Is it focused on life insurance, auto insurance, health insurance, or a combination of these? Describe its performance over the last year. Explain why its performance was higher or lower than normal. Was the change in its performance due to the economy, the impact of recent interest rate movements on its asset portfolio, the stock market's performance, or a change in the frequency and size of insurance claims?

3. Go to finance.yahoo.com, enter the symbol MET (MetLife, Inc.), and click on "Get Quotes." Click on "5y" just below the stock price trend to review the stock price movements over the last five years. Check the "Compare" box just above the graph and then select "S&P 500" in order to compare the trend of MetLife's stock price with the movements in the S&P stock index. Has MetLife performed better or worse than the index? Offer an explanation for its performance.

4. Go to finance.yahoo.com, enter the symbol MET (MetLife, Inc.), and click on "Get Quotes." Retrieve stock price data at the beginning of the last 20 quarters. Then go to http://research.stlouisfed.org/fred2/ and retrieve interest rate data at the beginning of the last 20 quarters for the three-month Treasury bill. Record the data on an Excel spreadsheet. Derive the quarterly return of MetLife. Derive the quarterly change in the interest rate. Apply regression analysis in which the quarterly return of MetLife, Inc., is the dependent variable and the quarterly change in the interest rate is the independent variable (see Appendix B for more information about using regression analysis). Is there a positive or negative relationship between the interest rate movement and the stock return of MetLife? Is the relationship significant? Offer an explanation for this relationship.

WSJ Exercise

Insurance Company Performance

Using an issue of the *Wall Street Journal*, summarize an article that discusses the recent performance of a particular insurance company. Does the article suggest that the insurance company's performance was better or worse than the norm? What reason is given for the particular level of performance?

Online Articles with Real-World Examples

Find a recent practical article available online that describes a real-world example regarding a specific financial institution or financial market that reinforces one or more concepts covered in this chapter.

If your class has an online component, your professor may ask you to post your summary of the article there and provide a link to the article so that other students can access it. If your class is live, your professor may ask you to summarize your application of the article in class. Your professor may assign specific students to complete this assignment or may allow any students to do the assignment on a volunteer basis.

For recent online articles and real-world examples related to this chapter, consider using the following search terms (be sure to include the prevailing year as a search term to ensure that the online articles are recent):

1. [name of a specific insurance company] AND performance
2. [name of a specific insurance company] AND operations
3. [name of a specific insurance company] AND risk
4. [name of a specific insurance company] AND earnings
5. [name of a specific insurance company] AND management
6. insurance company AND operations
7. insurance company AND risk
8. insurance company AND regulation
9. pension fund AND management
10. pension fund AND operations

PART 7 INTEGRATIVE PROBLEM

Assessing the Influence of Economic Conditions across a Financial Conglomerate's Units

This problem requires an understanding of the operations and asset compositions of savings institutions (Chapter 21), finance companies (Chapter 22), mutual funds (Chapter 23), securities firms (Chapter 24), and insurance companies (Chapter 25).

A diversified financial conglomerate has five units (subsidiaries). One unit conducts thrift operations; the second unit conducts consumer finance operations; the third, mutual fund operations; the fourth, securities operations; and the fifth, insurance operations. As a financial analyst for the conglomerate's holding company, you have been asked to assess all of the units and to indicate how each unit will be affected as economic conditions change as well as which units will be most affected.

In the past few months, all economic indicators have been signaling the possibility of a recession. Stock prices have already declined as the demand for stocks has decreased significantly. It appears that the pessimistic outlook will last for at least a few months. Economic conditions are already somewhat stagnant and are expected to deteriorate further in future months. During that time, firms will not consider mergers, new stock issues, or new bond issues.

An economist at your financial conglomerate believes that individual investors will overreact to the pessimistic outlook. Once stock prices are low enough, some firms will acquire target firms whose stock appears to be undervalued. In addition, some firms will buy back some of their own stock once they believe it is undervalued. Although these activities have not yet occurred, the economist believes it is only a matter of time.

Questions

1. Your strategy is to identify the units that will be less adversely affected by the recession. You believe that the units' different characteristics will cause some of them to be affected more than others.
2. Currently, each unit employs economists who develop forecasts for interest rates and other economic conditions. When assessing potential economic effects on each unit, what are the disadvantages of this approach versus having just one economist at the holding company provide forecasts?

Final Self-Exam

Final Review

Chapters 17 to 25 are focused on financial institutions. Here is a brief review of the chapters.

Chapter 17 explains how banks obtain most of their funds from deposits and allocate most of their funds toward loans or securities. Chapter 18 explains how banks are regulated according to the services they offer and the capital that they must maintain as well as how regulators monitor their risk over time. Chapter 19 explains how banks manage their sources and uses of funds (within regulatory constraints) in a manner to achieve their return and risk preferences. Chapter 20 shows how a bank's performance is highly influenced by what it charges on loans versus what it pays on deposits (which affects its net interest margin), its income earned from services (noninterest income), and its level of noninterest expenses.

Chapter 21 explains that savings institutions are similar to banks in the manner by which they obtain funds but use most of their funds to invest in mortgages or mortgage-related securities. This results in a higher exposure to interest rate risk, although savings institutions can hedge that risk. Chapter 22 explains that finance companies differ from banks and savings institutions in that they typically obtain their funds by issuing commercial paper and target their use of funds toward consumers or small businesses. In general, the credit risk of their assets is higher than that of commercial banks or savings institutions. Chapter 23 identifies the types of mutual funds and explains how their performance and risk vary across funds. In general, a mutual fund's asset portfolio is much more risky than those of other financial institutions. Chapter 24 describes how securities firms channel funds through financial markets. The investment banking portion of a securities firm places new securities with investors and thereby helps corporations obtain financing. The brokerage portion of a securities firm channels funds between investors in the secondary market. Chapter 25 explains how insurance companies obtain funds from the premiums they charge and how pension funds rely on retirement contributions from employees or their respective employers. Insurance companies and pension funds are major investors in the bond and stock markets.

This self-exam allows you to test your understanding of some of the key concepts covered in the chapters on financial institutions. It does not replace the end-of-chapter questions, nor does it cover all the concepts. It is simply intended to allow you to test yourself on a general overview of key concepts. Try to simulate taking an exam by

answering the questions without using your book and your notes. The answers to this exam are provided at the end of the questions so that you can grade your exam. If you have any wrong answers, you should reread the related material and then redo the questions that you had wrong.

This exam may not necessarily match the level of rigor in your course. Your instructor may offer you specific information about how this Final Self-Exam relates to the coverage and rigor of the final exam in your course.

Final Self-Exam

1. Flagstaff Bank currently has assets heavily concentrated in secured loans and Treasury securities, while Mesa Bank has assets concentrated in consumer loans and credit card loans. The managerial capabilities of the two banks are similar. Mesa Bank's performance was much better than that of Flagstaff Bank last year, but Flagstaff Bank's performance is much better than that of Mesa Bank this year. Explain why the relative performance of the two banks is likely to change over time.

2. The Sarbanes-Oxley Act of 2002 requires publicly traded firms to be more transparent in their reporting. This may reduce the asymmetric information problem between firms (including banks) and their investors. Do you think the Sarbanes-Oxley Act will eliminate the need for CAMELS ratings?

3. Kentucky Bank has a new board of directors who believe that the bank has opportunities for major growth and want to ensure that the CEO makes good investment decisions to expand the bank's business. To give the CEO a strong incentive to perform well, the board set the CEO's quarterly compensation in line with the return on equity. The CEO immediately decided to repurchase as many shares as possible while barely meeting the bank's capital requirements. Why would the CEO take this action? Will the compensation structure remove agency problems?

4. Last year, Alabama Bank had a net interest margin of 3 percent, noninterest income was 1.5 percent of assets, noninterest expenses were 3 percent of assets, and loan loss reserves were 0.5 percent of assets. Alabama Bank wants to employ a strategy of using more of its resources to offer financial services. It expects that it can increase its noninterest income by 0.5 percent as a percentage of assets. What other components (or ratios) of the income statement may be affected by this strategy?

5. Maryland Savings Institution maintains most of its assets in fixed-rate mortgages of between 10 and 30 years. Most of its deposits have maturities of less than one year. Assume that the Fed implements a restrictive monetary policy.

a. Explain how that monetary policy will affect interest rates.

b. Assuming that interest rates change as expected, how will that affect the spread between interest revenue and interest expenses?

c. Should Maryland hedge its asset portfolio based on its expectations? If so, how should it hedge? If it should hedge, explain any limitations of the hedge.

6. How do financial institutions vary in terms of their main uses of funds?

7. Explain the role that insurance companies and pension funds play in financial markets.

8. Explain why a stock market benefits more when financial institutions are investors than when individual investors invest all their money directly into the stock market themselves.

9. Discuss the following argument. Money market funds attract money from investors who do not know what else to do with their money. Thus, money market funds are merely a last resort when there are no better alternatives for investment. Since they invest only in short-term securities, they do not play a role in financing economic growth.

10. Closed-end funds tend to hold stocks that are less liquid than stocks held by open-end funds.

a. Do you think this characteristic is an advantage for closed-end funds that want to achieve high returns?

b. Why is it easier for closed-end funds to manage a portfolio of less liquid stocks than it would be for open-end funds?

11. Discuss the strategy of an investor who invests all of his money in four mutual funds that focus on growth companies. The investor believes he is fully insulated from market conditions because each fund contains 40 different stocks.

12. For a given type of mutual fund classification, what is a key characteristic that causes some mutual funds to outperform others?

13. When a securities firm serves as an underwriter for an initial public offering (IPO), is the firm working for the issuer or the institutional investors that may purchase shares? Explain the dilemma.

14. Do stock analysts reduce market inefficiencies?

15. Why might the value of an insurance company be affected by interest rate movements?

16. Should financial institutions be regulated in order to reduce their risk? Offer at least one argument for regulation and one argument against regulation.

17. Consider the typical sources and uses of funds at commercial banks, savings institutions, and securities firms. Explain the risk of each type of institution based on its typical sources and uses of funds.

Answers to Final Self-Exam

1. Under favorable economic conditions, Mesa Bank should perform better because it earns higher returns on its loans as long as the borrowers repay their loans (higher risk). Under unfavorable economic conditions, Flagstaff Bank should perform better because Mesa will likely experience many loan defaults while Flagstaff will not.

2. Even if investors have more information, they may not be able to detect banks that have financial problems. In addition, CAMELS ratings are intended to detect financial problems of banks early so that there is time to correct the problems. This can prevent bank failures and therefore allow for a more stable banking system.

3. The stock repurchase will reduce equity so that the profits in the near future will result in a higher return on equity. This will enhance the CEO's compensation but will not necessarily enhance the bank's value in the long run. In fact, the decreased equity will restrict the growth of the bank. Thus, this compensation structure will not remove agency problems.

4. Alabama Bank will incur more expenses when attempting to expand its financial services. This will increase the ratio of noninterest expenses to assets, and this increase could offset any increase in revenue.

5. a. Interest rates will rise.

b. The spread will decrease because short-term deposit rates will increase, while long-term rates may not be affected as much or at all.

c. Maryland should hedge. It could sell interest rate futures. However, if it does sell interest rate futures and interest rates decline, it will incur a loss on its interest rate futures position, which may offset most of its gain from operations.

6. Commercial banks serve corporate borrowers, savings institutions serve homeowners, finance companies serve consumers and small businesses, while mutual funds, insurance companies, and pension funds serve corporate borrowers (investing in stocks and bonds and money market securities issued by corporations).

7. Insurance companies and pension funds are suppliers of funds and add much liquidity to the financial markets. They may also make the stock market more efficient because if a stock's price deviates from its fundamental value, they may take a position to capitalize on the discrepancy, and this should push the stock toward its fundamental value.

8. Institutional investors pool funds that come from many individuals and take much bigger stakes in a specific stock. Thus, the institutional investors have an incentive to make the correct investment choices (because of the large investment) and then to monitor the companies in which they invest. As a result, there is more governance over companies than if stocks were owned only by small investors.

9. Money market funds provide liquidity to investors, which is necessary even when investors have alternative investments that pay higher returns. In addition, money market funds play a major role in financing the budget deficit because they invest heavily in Treasury securities. They also channel funds to corporations in the form of commercial paper. Since the Treasury and corporations frequently reissue short-term securities, they are sometimes using the short-term securities to finance long-term investment.

10. a. The investment in illiquid stocks may be an advantage because it allows the closed-end funds to pursue stocks that are not followed by most investors. These stocks are more likely to be mispriced than other stocks.

b. Closed-end funds do not have to accommodate redemptions, whereas open-end funds do. Thus, closed-end funds do not need to worry about selling some of their stock holdings just for the purpose of satisfying redemptions.

11. These mutual funds will all be adversely affected during a weak economy because firms that have high growth potential will probably experience weak performance when economic conditions are weak. There is not sufficient demand under these conditions.

12. Mutual funds with a low expense ratio tend to perform better than those with higher expense ratios.

13. A securities firm attempts to satisfy the issuer of stock by ensuring that the price is sufficiently high, but it must also ensure that it can place all the shares. It also wants to satisfy investors who invest in the IPO. If the investors incur losses because they paid too much for the shares, they may not want to purchase any more stock from that underwriter in the future.

14. Some stock analysts may be able to detect when a specific stock is underpriced or overpriced in the market, and they can communicate their opinion through their stock ratings, which may cause investors to capitalize on the information. This could push stock prices closer to their fundamental values and reduce market inefficiencies. During the stock market bubble in the year 2000, however, analysts were overly optimistic about

stocks and were not paying attention to fundamentals of the companies. Thus, they may have been a partial cause of the stock market bubble.

15. The value of an insurance company is partially influenced by the value of its asset portfolio. Its asset portfolio contains bonds. The market value of the bonds is inversely related to interest rate movements.

16. Regulation may be able to reduce failures of financial institutions, which may stabilize the financial system. The flow of funds into financial institutions will be larger if the people who provide the funds can trust that the financial institutions will not fail. However, regulation can also restrict competition. In some cases, it results in subsidies to financial institutions that are performing poorly. Thus, regulation can prevent firms from operating efficiently.

17. Commercial banks are exposed to default risk due to their commercial and consumer loans. They are exposed to interest rate risk because the maturities on some of their assets (especially bonds and some term loans) may be longer than the maturities on their liabilities. Savings institutions are exposed to default risk due to their mortgage loans (although these loans are normally backed by the home) and consumer loans. They are exposed to interest rate risk because the maturities on their fixed-rate mortgages are longer than the maturities on their liabilities. Securities firms are exposed to market risk from taking equity positions and to default risk when providing bridge loans. Their operations are especially sensitive to financial market activity. When financial transactions such as mergers and stock trades decline, their business declines because they serve as intermediaries for many types of financial transactions.