



The Federal Reserve System

Purposes & Functions

Board of Governors of the Federal Reserve System
Washington, D.C. 1994



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Preface



This is the eighth edition of The Federal Reserve System: Purposes and Functions. It has been revised by staff members of the Federal Reserve Board to reflect the changes that have taken place in the monetary, regulatory, and other policy areas since publication of the seventh edition in 1984. It incorporates major changes in the law and in the structure of the financial system that have occurred over the past decade.

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Overview of the Federal Reserve System

T

he Federal Reserve System is the central bank of the United States. It was founded by Congress in 1913 to provide the nation with a safer, more flexible, and more stable monetary and financial system; over the years, its role in banking and the economy has expanded.

TODAY, THE FEDERAL RESERVE'S DUTIES fall into four general areas:

- Conducting the nation's monetary policy by influencing the money and credit conditions in the economy in pursuit of full employment and stable prices
- Supervising and regulating banking institutions to ensure the safety and soundness of the nation's banking and financial system and to protect the credit rights of consumers
- Maintaining the stability of the financial system and containing systemic risk that may arise in financial markets
- Providing certain financial services to the U.S. government, to the public, to financial institutions, and to foreign official institutions, including playing a major role in operating the nation's payments system.

Most developed countries have a central bank whose functions are broadly similar to those of the Federal Reserve. The Bank of England has existed since the end of the seventeenth century. Napoleon I established the Banque de France in 1800, and the Bank of Canada began operations in 1935. The German central bank was reestablished after World War II and is loosely modeled on the Federal Reserve.

BACKGROUND

Before Congress created the Federal Reserve System, periodic financial panics had plagued the nation. These panics had contributed to many bank failures, business bankruptcies, and general

economic downturns. A particularly severe crisis in 1907 prompted Congress to establish the National Monetary Commission, which put forth proposals to create an institution that would counter financial disruptions of these kinds. After considerable



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Woodrow Wilson signed the Federal Reserve Act at 6:02 p.m. on December 23, 1913.

debate, Congress passed the Federal Reserve Act, which President Woodrow Wilson signed into law on December 23, 1913. The act stated that its purposes were “to provide for the establishment of Federal reserve banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes.”

Soon after the creation of the Federal Reserve, it became clear that the act had broader implications for national economic and financial policy. As time has passed, further legislation has clarified and supplemented the original purposes. Key laws affecting the Federal Reserve have been the Banking Act of 1935; the Employment Act of

1946; the 1970 amendments to the Bank Holding Company Act; the International Banking Act of 1978; the Full Employment and Balanced Growth Act of 1978; the Depository Institutions Deregulation and Monetary Control Act of 1980; the Financial Institutions Reform, Recovery, and Enforcement Act of 1989; and the Federal Deposit Insurance Corporation Improvement Act of 1991. Congress defined the primary objectives of national economic policy in two of these acts: the Employment Act of 1946 and the Full Employment and Balanced Growth Act of 1978 (the latter sometimes called the Humphrey–Hawkins Act after its original sponsors). These objectives include economic growth in line with the economy's potential to expand; a high level of employment; stable prices (that is, stability in the purchasing power of the dollar); and moderate long-term interest rates.

The Federal Reserve System is considered to be an independent central bank. It is so, however, only in the sense that its decisions do not have to be ratified by the President or anyone else in the executive branch of government. The entire System is subject to oversight by the U.S. Congress because the Constitution gives to Congress the power to coin money and set its value—a power that, in the 1913 act, Congress itself delegated to the Federal Reserve. The Federal Reserve must work within the framework of the overall objectives of economic and financial policy established by the government, and thus the description of the System as “independent within the government” is more accurate.

STRUCTURE OF THE SYSTEM

The Federal Reserve System has a structure designed by Congress to give it a broad perspective on the economy and on economic activity in all parts of the nation. It is a federal system, composed basically of a central, governmental agency—the Board of Governors—in Washington, D.C., and twelve regional Federal Reserve Banks, located in major cities throughout the nation. These components share responsibility for supervising and regulating certain financial institutions and activities; for providing banking services to depository institutions and to the federal government; and for ensuring that consumers receive adequate information and fair treatment in their business with the banking system.

*The
Federal Reserve
System is composed
of the Board of
Governors and
twelve regional
Reserve Banks.*

A major component of the System is the Federal Open Market Committee (FOMC), which is made up of the Board of Governors, the president of the Federal Reserve Bank of New York, and presidents of four other Federal Reserve Banks, who serve on a rotating basis. The FOMC oversees open market operations, which is the main tool used by the Federal Reserve to influence money market conditions and the growth of money and credit.

Two other groups play roles in the way the Federal Reserve System works: depository institutions, through which the tools of monetary policy operate, and advisory committees, which make recommendations to the Board of Governors and to the Reserve Banks regarding the System’s responsibilities.

Board of Governors

The Board of Governors of the Federal Reserve System was established as a federal government agency. It is made up of seven members appointed by the President of the United States and confirmed by the U.S. Senate. The full term of a Board member is fourteen years; the appointments are staggered so that one term expires on January 31 of each even-numbered year. After serving a full term, a Board member may not be reappointed. If a member leaves the Board before his or her term expires, however, the person appointed and confirmed to serve the remainder of the term may later be reappointed to a full term.

The Chairman and the Vice Chairman of the Board are also appointed by the President and confirmed by the Senate. The nominees to these posts must already be members of the Board or must be simultaneously appointed to the Board. The terms for these positions are four years.

The Board of Governors is supported by a Washington staff numbering about 1,700. The Board's responsibilities require thorough



The first Federal Reserve Board, 1914.

analysis of domestic and international financial and economic developments. The Board carries out those responsibilities in conjunction with other components of the Federal Reserve System. It also supervises and regulates the operations of the Federal Reserve Banks and their Branches and the activities of various banking organizations, exercises broad responsibility in the nation's payments system, and administers most of the nation's laws regarding consumer credit protection.

The Federal Reserve System conducts monetary policy using three major tools:

- Open market operations—the buying and selling of U.S. government (mainly Treasury) securities in the open market to influence the level of reserves in the depository system
- Reserve requirements—requirements regarding the amount of funds that commercial banks and other depository institutions must hold in reserve against deposits
- The discount rate—the interest rate charged commercial banks and other depository institutions when they borrow reserves from a regional Federal Reserve Bank.

Policy regarding open market operations is established by the FOMC. However, the Board of Governors has sole authority over changes in reserve requirements, and it must also approve any change in the discount rate initiated by a Federal Reserve Bank.

The Federal Reserve also plays a major role in the supervision and regulation of the U.S. banking system. Banking supervision—the examination of institutions for safety and soundness and for compliance with law—is shared with the Office of the Comptroller of the Currency, which supervises national banks, and the Federal Deposit Insurance Corporation, which supervises state banks that are not members of the Federal Reserve System. The Board's supervisory responsibilities extend to the roughly 1,000 state banks that are members of the Federal Reserve System, all bank holding companies, the foreign activities of member banks, the U.S. activities of foreign banks, and Edge Act and agreement corporations (institutions that engage in a foreign banking business).

Some regulations issued by the Board apply to the entire banking industry, whereas others apply only to member banks, that is, state banks that have chosen to join the Federal Reserve System and national banks, which by law are automatically members of the System. The Board also issues regulations to carry out major federal laws governing consumer credit protection, such as Truth in Lending, Equal Credit Opportunity, and Home Mortgage Disclosure; many of these regulations apply to various lenders outside the banking industry as well as to banks.

Members of the Board of Governors are in continual contact with other policymakers in government. They frequently testify before

congressional committees on the economy, monetary policy, banking supervision and regulation, consumer credit protection, financial markets, and other matters. Under the Humphrey-Hawkins Act, the Board of Governors must submit a report on the economy and the conduct of monetary policy to Congress by February 20 and July 20 of each year. The Chairman of the Board of Governors is called to testify on the report before the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Banking, Finance and Urban Affairs.

The Board has regular contact with members of the President's Council of Economic Advisers and other key economic officials, and the Chairman meets from time to time with the President of the United States and has regular meetings with the Secretary of the Treasury.

The Chairman has formal responsibilities in the international arena as well. For example, he is the alternate U.S. member of the Board of Governors of the International Monetary Fund, is a member of the board of the Bank for International Settlements (BIS), and is a member, along with the heads of other relevant U.S. agencies and departments, of the National Advisory Council on International Monetary and Financial Policies. He is also a member of U.S. delegations to key international meetings, such as those of the finance ministers and central bank governors of the seven largest industrial countries—the Group of Seven, or G-7. He, other Board members, and Board staff members share many international responsibilities, including representing the Federal Reserve at meetings at the BIS in Basle and at the Organisation for Economic Co-operation and Development in Paris.

One member of the Board of Governors serves as the System's representative to the Federal Financial Institutions Examination Council (FFIEC), which is responsible for coordinating, at the federal level, examinations of depository institutions and related policies. The FFIEC has representatives also from the Federal Deposit Insurance Corporation, the National Credit Union Administration, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision.

The Board publishes detailed statistics and other information about the System's activities and the economy in publications

such as the monthly *Federal Reserve Bulletin*, special announcements of Board actions, and separate statistical releases. Through the Federal Reserve Regulatory Service, it provides materials relating to its regulatory and supervisory functions.

The Board is audited annually by a major public accounting firm, and the audit report is published in the Board's *Annual Report*. The General Accounting Office (GAO) also audits the Board. A complete list of audits or studies performed and under way by the GAO is available in the Board's annual *Budget Review*, which is sent to Congress during the first quarter of each calendar year. Monetary policy, which is exempt from audit by the GAO, is monitored directly by Congress through written reports, including the semiannual Humphrey–Hawkins reports, prepared by the Board of Governors.

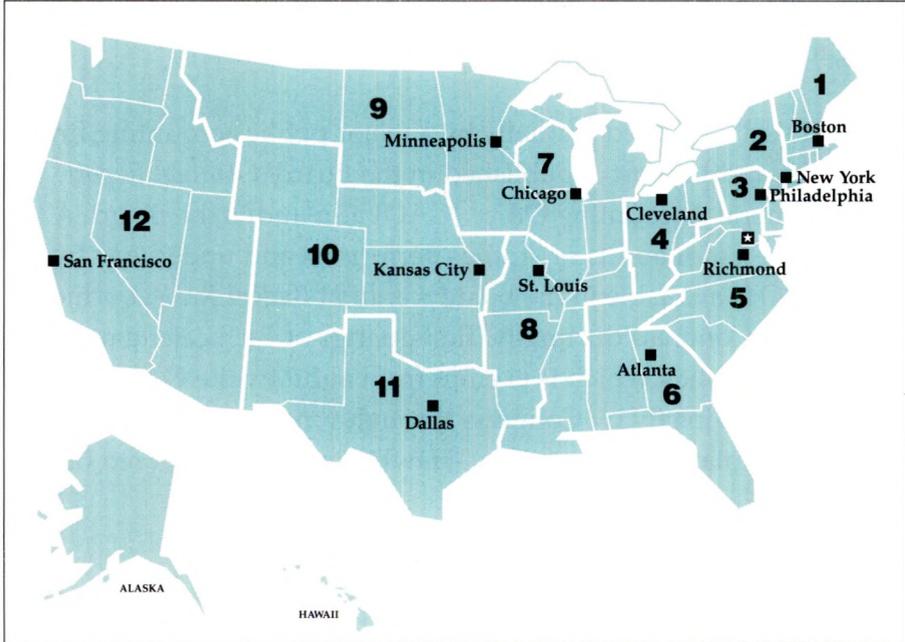
Federal Reserve Banks

A network of twelve Federal Reserve Banks and their twenty-five Branches carries out a variety of System functions, including operating a nationwide payments system, distributing the nation's currency and coin, supervising and regulating member banks and bank holding companies, and serving as banker for the U.S. Treasury. Each Reserve District is identified by a letter and a number (see list of District offices on page 10). All U.S. currency carries the letter and number designation of the Reserve Bank that first puts it into circulation. Besides carrying out functions for the System as a whole, such as administering nationwide banking and credit policies, each Reserve Bank acts as a depository for the banks in its own District and fulfills other District responsibilities.

The various offices and boundaries of the Federal Reserve Districts are shown on the maps on pages 8 and 9.

The Board of Governors exercises broad authority over the operations and activities of the Federal Reserve Banks and their Branches. This authority includes oversight of the Reserve Banks' services to banks and other depository institutions and of their examination and supervision of various banking institutions. Each Federal Reserve Bank must submit its annual budget to the Board of Governors for approval. Other types of expenditures—

The Federal Reserve System



Legend

Both pages

- Federal Reserve Bank city
- ★ Board of Governors of the Federal Reserve System, Washington, D.C.

Facing Page

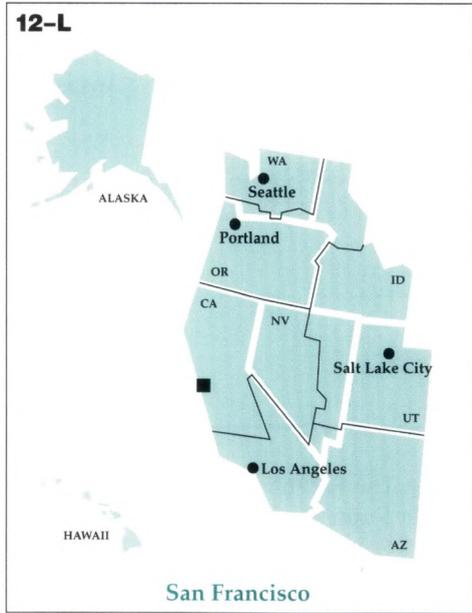
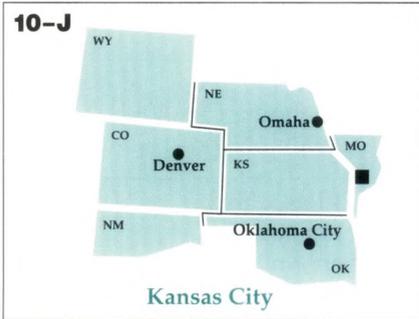
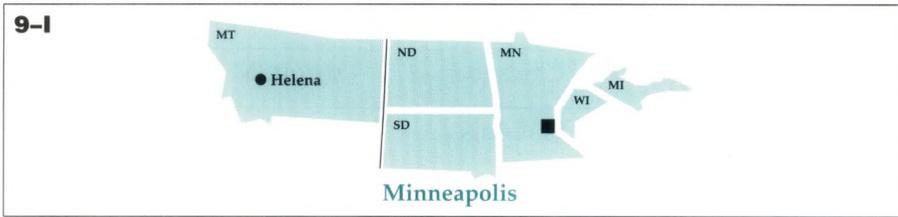
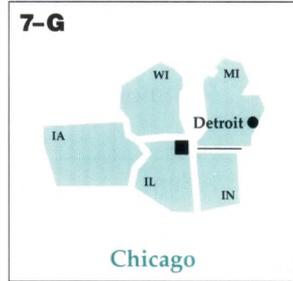
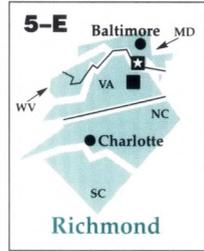
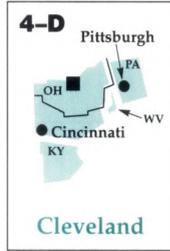
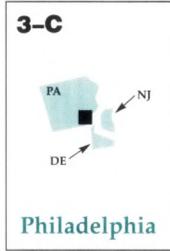
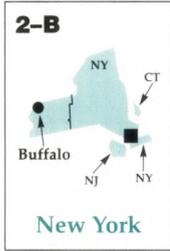
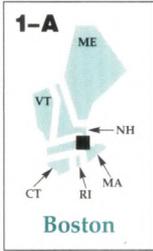
- Federal Reserve Branch city
- Branch boundary

Notes

The Federal Reserve officially identifies Districts by number and by Reserve Bank city (shown on both pages) as well as by letter (shown on the facing page).

In District 12, the Seattle Branch serves Alaska and the San Francisco Bank serves Hawaii.

The System serves commonwealths and territories as follows: The New York Bank serves the Commonwealth of Puerto Rico and the U.S. Virgin Islands; the San Francisco Bank serves American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.



Federal Reserve District Banks and Branches ¹

<i>Number</i>	<i>Letter</i>	<i>Bank</i>	<i>Branch</i>
1	A	Boston	
2	B	New York	Buffalo, N.Y.
3	C	Philadelphia	
4	D	Cleveland	Cincinnati, Ohio Pittsburgh, Pa.
5	E	Richmond	Baltimore, Md. Charlotte, N.C.
6	F	Atlanta	Birmingham, Ala. Jacksonville, Fla. Miami, Fla. Nashville, Tenn. New Orleans, La.
7	G	Chicago	Detroit, Mich.
8	H	St. Louis	Little Rock, Ark. Louisville, Ky. Memphis, Tenn.
9	I	Minneapolis	Helena, Mont.
10	J	Kansas City	Denver, Colo. Oklahoma City, Okla. Omaha, Nebr.
11	K	Dallas	El Paso, Tex. Houston, Tex. San Antonio, Tex.
12	L	San Francisco	Los Angeles, Calif. Portland, Ore. Salt Lake City, Utah Seattle, Wash.

1. The Federal Reserve Bank of New York maintains an operations center in East Rutherford, New Jersey. Additional offices, which serve as regional check-processing centers, are located in Lewiston, Maine; Windsor Locks, Connecticut; Jericho, New York; Utica, New York; Columbus, Ohio; Columbia, South Carolina; Charleston, West Virginia; Des Moines, Iowa; Indianapolis, Indiana; and Milwaukee, Wisconsin.

such as those for construction or major alterations of Reserve Bank buildings and for the salaries of Reserve Bank presidents and first vice presidents—are also subject to specific Board approval.

Congress chartered the Federal Reserve Banks for a public purpose. The Reserve Banks are the operating arms of the central banking system, and they combine both public and private elements in their makeup and organization. As part of the Federal Reserve System, the Banks are subject to oversight by Congress; and like the Board members, Reserve Bank presidents may testify before congressional committees. Each Reserve Bank has a staff of full-time officers and employees that manages and operates it.

*The
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Banks are the
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central banking
system.*

Each Reserve Bank has its own board of nine directors chosen from outside the Bank as provided by law. Three directors, designated Class A, represent commercial banks that are members of the Federal Reserve System. Three Class B and three Class C directors represent the public. The member commercial banks in each District elect the Class A and Class B directors. The Board of Governors in Washington, D.C., appoints the Class C directors to their posts. From the Class C directors, the Board of Governors selects one person as chairman and another as deputy chairman. No Class B or Class C director may be an officer, director, or employee of a bank or a bank holding company. No Class C director may own stock in a bank or a bank holding company. The directors in turn nominate a president and first vice president of the Reserve Bank, whose selection is subject to approval by the Board of Governors. Each Branch of a Reserve Bank has its own board of directors of five or seven members. A majority of these directors are appointed by the Branch's Reserve Bank; the others are appointed by the Board of Governors.

Boards of directors of the Reserve Banks and Branches provide the Federal Reserve System with a wealth of information on economic conditions in virtually every corner of the nation. This information is used by the FOMC and the Board of Governors in reaching major decisions about monetary policy. Information from directors and other sources gathered by the Reserve Banks is also shared with the public in a special report—informally called the Beige Book—which is issued about two weeks before each meeting of the FOMC. In addition, every two weeks, the board of each Bank must recommend to the Board of Governors a discount rate for its Bank; a recommendation for a change cannot take effect unless the Board of Governors approves it.

tating basis.¹ All the presidents participate in FOMC discussions, contributing to the Committee's assessment of the economy and of policy options, but only the five presidents who are members of the Committee vote on policy decisions. The FOMC under law determines its own internal organization and by tradition elects the Chairman of the Board of Governors as its chairman and the president of the Federal Reserve Bank of New York as its vice chairman. Formal meetings are held eight times each year in Washington, D.C. Telephone consultations and other meetings are held when needed.



Member Banks

As suggested previously, the nation's banks can be divided into three types according to which governmental body charters them and whether or not they are members of the Federal Reserve System. Those chartered by the federal government (through the Office of the Comptroller of the Currency in the Department of the Treasury) are national banks; by law, they are members of the Federal Reserve System. Banks chartered by the states are divided into those that are members of the Federal Reserve System (state member banks) and those that are not (state nonmember banks).

1. The rotating seats are filled from the following four groups of Banks, one Bank president from each group: Boston, Philadelphia, and Richmond; Cleveland and Chicago; Atlanta, St. Louis, and Dallas; and Minneapolis, Kansas City, and San Francisco.

State banks are not required to join the Federal Reserve System, but they may elect to become members if they meet the standards set by the Board of Governors. At the end of 1993, 4,338 banks were members of the Federal Reserve System—3,360 national banks and 978 state banks—out of 11,212 commercial banks nationwide.

Member banks must subscribe to stock in their regional Federal Reserve Bank in an amount equal to 3 percent of their capital and surplus. The holding of this stock, however, does not carry with it the control and financial interest conveyed to holders of common stock in for-profit organizations: It is merely a legal obligation that goes along with membership, and the stock may not be sold or pledged as collateral for loans. Member banks receive a 6 percent dividend annually on their stock, as specified by law, and vote for the Class A and Class B directors of the Reserve Bank. The stock is not available for purchase by individuals.

Advisory Committees

The Federal Reserve System uses advisory and working committees in carrying out its varied responsibilities. Three of these committees advise the Board of Governors directly:

- ***Federal Advisory Council.*** The Federal Reserve Act established the council, which consists of one member—traditionally a commercial banker—from each Federal Reserve District. The council is required by law to meet four times each year with the Board of Governors in Washington, D.C., to discuss economic and banking matters.
- ***Consumer Advisory Council.*** This statutory council, which has thirty members, meets with the Board three times a year on matters concerning consumers and the consumer credit protection laws administered by the Board. The council consists of academics, legal specialists in consumer matters, and members representing the interests of consumers and the financial industry.
- ***Thrift Institutions Advisory Council.*** After the passage of the Depository Institutions Deregulation and Monetary Control Act of 1980, which extended to thrift institutions the Federal Reserve's reserve requirements and access to the discount window, the Board of Governors established this council to

obtain information and opinions on the needs and problems of thrift institutions. The council is made up of representatives of savings and loan associations, savings banks, and credit unions.

The Federal Reserve Banks also use advisory committees. Perhaps the most important are the committees (one for each Reserve Bank) that advise the Banks on matters of agriculture and small business. Two representatives of each committee meet once a year in Washington, D.C., with the Board of Governors. ■

Monetary Policy and the Economy

Using the tools of monetary policy, the Federal Reserve can affect the volume of money and credit and their price—interest rates. In this way, it influences employment, output, and the general level of prices.

THE FEDERAL RESERVE ACT LAYS OUT the goals of monetary policy. It specifies that, in conducting monetary policy, the Federal Reserve System and the Federal Open Market Committee should seek “to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”

GOALS OF MONETARY POLICY

Many analysts believe that the central bank should focus primarily on achieving price stability. A stable level of prices appears to be the condition most conducive to maximum sustained output and employment and to moderate long-term interest rates; in such circumstances, the prices of goods, materials, and services are undistorted by inflation and thus can serve as clearer signals and guides for the efficient allocation of resources. Also, a background of stable prices is thought to encourage saving and, indirectly, capital formation because it prevents the erosion of asset values by unanticipated inflation.

However, policymakers must consider the long- and short-term effects of achieving any one goal. For example, in the long run, price stability complements efforts to achieve maximum output and employment; but in the short run, some tension can arise between efforts to reduce inflation and efforts to maximize employment and output. At times, the economy is faced with adverse supply shocks, such as a bad agricultural harvest or a disruption in the supply of oil, which put upward pressure on prices and downward pressure on output and employment. In these circumstances, makers of monetary policy must decide the extent to

which they should focus on defusing price pressures or on cushioning the loss of output and employment. At other times, policymakers may be concerned that the public's expectation of more inflation will get built into decisions about wages and prices, become a self-fulfilling prophecy, and result in temporary losses of output and employment. Countering this threat of inflation with a more restrictive monetary policy could risk small losses of output and employment in the near term but might make it possible to avoid larger losses later should expectations of higher inflation become embedded in the economy.

Beyond influencing the level of prices and the level of output in the near term, the Federal Reserve can contribute to financial stability and better economic performance by limiting the scope of financial disruptions and preventing their spread outside the financial sector. Modern financial systems are highly complex and interdependent and potentially vulnerable to wide-scale systemic disruptions, such as those that can occur during a plunge in stock prices. The Federal Reserve can help to establish for the U.S. banking system and, more broadly, for the financial system a framework that reduces the potential for systemic disruptions. Moreover, if a threatening disturbance develops, the central bank can cushion its effects on financial markets and the economy by providing liquidity through its monetary policy tools.

MONETARY POLICY AND THE RESERVES MARKET

The initial link between monetary policy and the economy occurs in the market for reserves. The Federal Reserve's policies influence the demand for or supply of reserves at banks and other depository institutions, and through this market, the effects of monetary policy are transmitted to the rest of the economy. Therefore, to understand how monetary policy is related to the economy, one must first understand what the reserves market is and how it works.

Demand for Reserves

The demand for reserves has two components: required reserves and excess reserves. All depository institutions—commercial banks, saving banks, savings and loan associations, and credit unions—must retain a percentage of certain types of deposits to be

held as reserves. The reserve requirements are set by the Federal Reserve under the Depository Institutions Deregulation and Monetary Control Act of 1980. At the end of 1993, 4,148 member banks, 6,042 nonmember banks, 495 branches and agencies of foreign banks, 61 Edge Act and agreement corporations, and 3,238 thrift institutions were subject to reserve requirements.

Since the early 1990s, reserve requirements have been applied only to transaction deposits (basically, interest-bearing and non-interest-bearing checking accounts). Required reserves are a fraction of such deposits; the fraction—the required reserve ratio—is set by the Board of Governors within limits prescribed by law (see appendix A).

Thus, total required reserves expand or contract with the level of transaction deposits and with the required reserve ratio set by the Board; in practice, however, the required reserve ratio has been adjusted only infrequently. Depository institutions hold required reserves in one of two forms: vault cash (cash on hand at the bank) or, more important for monetary policy, required reserve balances in accounts with the Reserve Bank for their Federal Reserve District.

Depositories use their accounts at Federal Reserve Banks not only to satisfy their reserve requirements but also to clear many finan-

The ultimate targets of monetary policy are specified in law as maximum employment, stable prices, and moderate long-term interest rates.



cial transactions. Given the volume and unpredictability of transactions that clear through their accounts every day, depositories need to maintain a cushion of funds to protect themselves against debits that could leave their accounts overdrawn at the end of the day and subject to penalty. Depositories that find their required reserve balances insufficient to provide such protection may open supplemental accounts for required clearing balances. These additional balances earn interest in the form of credits that can be used to defray the cost of services, such as check-clearing and wire transfers of funds and securities, that the Federal Reserve provides.

Some depository institutions choose to hold reserves even beyond those needed to meet their reserve and clearing requirements. These additional balances, which provide extra protection against overdrafts and deficiencies in required reserves, are called excess reserves; they are the second component of the demand for reserves (a third component if required clearing balances are included). In general, depositories hold few excess reserves because these balances do not earn interest; nonetheless, the demand for these reserves can fluctuate greatly over short periods, complicating the Federal Reserve's task of implementing monetary policy. (See table 2.1 for the average amount of funds in each of these reserve categories in 1993.)

Supply of Reserves

The Federal Reserve supplies reserves to the banking system in two ways:

- Lending through the Federal Reserve discount window
- Buying government securities (open market operations).

Reserves obtained through the first channel are called borrowed reserves. The Federal Reserve supplies these directly to depository institutions that are eligible to borrow through the discount window. Access to such credit by banks and thrift institutions is established by rules set by the Board of Governors, and loans are made at a rate of interest—the discount rate—set by the Reserve Banks and approved by the Board. The supply of borrowed reserves depends on the initiative of depository institutions to borrow, though it is influenced by the level of the discount rate and by the terms and conditions for access to discount window credit.

In general, banks are expected to come to the discount window to meet liquidity needs only after drawing on all other reasonably available sources of funds, which limits considerably the use of this source of funds. Moreover, many banks fear that their use of discount window credit might become known to private market participants, even though the Federal Reserve treats the identity of such borrowers in a highly confidential manner, and that such borrowing might be viewed as a sign of weakness. As a consequence, the amount of reserves supplied through the discount window is generally a small portion of the total supply of reserves.

The other source of reserve supply is nonborrowed reserves. Although the supply of nonborrowed reserves depends on a variety of factors, many of them outside the day-to-day control of the Federal Reserve, the System can exercise control over this supply through open market operations—the purchase or sale of securities by the Domestic Trading Desk at the Federal Reserve Bank of New York. When the Federal Reserve buys securities in the open market, it creates reserves to pay for them, and the supply of nonborrowed reserves increases. Conversely, when it sells securities, it absorbs reserves in exchange for the securities, and the supply of nonborrowed reserves falls. In other words, the Federal Reserve adjusts the supply of nonborrowed reserves by purchasing or selling securities in the open market, and the purchases are effectively paid for by additions to or subtractions from a depository institution's reserve balance at the Federal Reserve.

Table 2.1
Aggregate reserve measures, 1993
 Billions of dollars; quarterly averages of daily data

<i>Quarter</i>	<i>Required reserves</i>	<i>Required reserve balances</i>	<i>Applied vault cash</i>	<i>Required clearing balances</i>	<i>Excess reserves</i>
1	53.5	23.8	30.9	6.0	1.2
2	55.6	26.5	30.2	6.0	1.0
3	57.2	26.8	31.4	6.0	1.1
4	60.3	28.9	32.5	6.1	1.1

Trading of Reserves

Depository institutions actively trade reserves held at the Federal Reserve among themselves, usually overnight. Those with surplus balances in their accounts transfer reserves to those in need of boosting their balances. The benchmark rate of interest charged for the short-term use of these funds is called the federal funds rate. Changes in the federal funds rate reflect the basic supply and demand conditions in the market for reserves.

Equilibrium exists in the reserves market when the demand for required and excess reserves equals the supply of borrowed plus nonborrowed reserves. Should the demand for reserves rise—say, because of a rise in checking account deposits—a disequilibrium will occur, and upward pressure on the federal funds rate will emerge. Equilibrium may be restored by open market operations to supply the added reserves, in which case the federal funds rate will be unchanged. It may also be restored as the supply of reserves increases through greater borrowing from the discount window; in this case, interest rates would tend to rise, and over time the demand for reserves would contract as reserve market pressures are translated, through the actions of banks and their depositors, into lower deposit levels and smaller required reserves. Conversely, should the supply of reserves expand—say,



because the Federal Reserve purchases securities in the open market—the resulting excess supply will put downward pressure on the federal funds rate. A lower federal funds rate will set in motion equilibrating forces through the creation of more deposits and larger required reserves and lessened borrowing from the discount window.

EFFECTS OF MONETARY POLICY ON THE ECONOMY

As the preceding discussion illustrates, monetary policy works through the market for reserves and involves the federal funds rate. A change in the reserves market will trigger a chain of events that affect other short-term interest rates, foreign exchange rates, long-term interest rates, the amount of money and credit in the economy, and levels of employment, output, and prices. For example, if the Federal Reserve reduces the supply of reserves, the resulting increase in the federal funds rate tends to spread quickly to other short-term market interest rates, such as those on Treasury bills and commercial paper. Because interest rates paid on many deposits in the money stock adjust only slowly, holding balances in money (that is, in a form counted in the money stock) becomes less attractive. As the public pursues higher yields available in the market (for example, on Treasury bills), the money stock declines. Moreover, as bank reserves and deposits shrink, the amount of money available for lending may also decline. Higher costs of borrowing and possible restraints on credit supply will damp growth of both bank credit and broader credit measures.

A change in short-term interest rates will also translate into changes in long-term rates on such financial instruments as home mortgages, corporate bonds, and Treasury bonds, especially if the change in short-term rates is expected to persist. Thus, a rise in short-term rates that is expected to continue will lead to a rise (though typically a smaller one) in long-term rates.

Higher long-term interest rates will reduce the demand for items that are most sensitive to interest cost, such as residential housing, business investment, and durable consumer goods (for example, automobiles and large household appliances). Higher mortgage interest rates depress the demand for housing. Higher corporate bond rates increase the cost of borrowing for businesses and, thus, restrain the demand for additions to plants and equipment;

and tighter supplies of bank credit may constrain the demand for investment goods by those firms particularly dependent on bank loans. Furthermore, higher rates on loans for motor vehicles reduce consumers' demand for cars and light trucks. Beyond these effects, consumption demand is lowered by a reduction in the value of household assets—such as stocks, bonds, and land—that tends to result from higher long-term interest rates.

The implications of changes in interest rates extend beyond domestic money and credit markets. Continuing with the example, when interest rates in the United States move higher in relation to those abroad, holding assets denominated in U.S. dollars becomes more appealing, and the demand for dollars in foreign exchange markets increases. A result is upward pressure on the exchange value of the dollar. With flexible exchange rates (rates that fluctuate as the supply of and demand for national currencies vary), the dollar strengthens, the cost of imported goods to Americans declines, and the price of U.S.-produced goods to people abroad rises. As a consequence, demands for U.S. goods are reduced as Americans are induced to substitute goods from abroad for those produced in the United States and people abroad are induced to buy fewer American goods.

Such changes in the demand for goods and services get translated into changes in total production and prices. Lessened demand resulting from higher interest rates and the stronger dollar tends to reduce production and thereby relieve pressures on resources. In an economy that is overheating, this relief will curb inflation. Production is the first to respond to monetary policy actions; prices and wages respond only later. There is considerable inertia in wages and prices, largely because much of the U.S. economy is characterized by formal and informal contracts that limit changes in prices and wages in the short run and because inflation expectations, which influence how people set wages and prices, tend to be slow to adjust. In other words, because many wages and prices do not adjust promptly to a change in aggregate demand, sales and output slow initially in response to a slowing of aggregate demand. Over a longer period, however, inflation expectations are tempered, contracts are renegotiated, and other adjustments occur. As a consequence, price and wage levels adjust to the slower rate of expansion of aggregate demand, and the economy gravitates toward full employment of resources.

LIMITATIONS OF MONETARY POLICY

Monetary policy is not the only force affecting output and prices. Indeed, the economy frequently is buffeted by factors affecting aggregate demand for goods and services or aggregate supply. On the demand side, the government influences the economy through changes in tax and spending programs. Such fiscal policy actions receive a lot of public attention and typically can be anticipated well in advance. In fact, their effect on the economy may precede their implementation to the degree that some businesses and households may alter their spending in anticipation of the policy change. Also, forward-looking financial markets may build such fiscal events into the level and structure of interest rates and thus further influence spending decisions before the government action.

Other changes in demand or supply can be totally unpredictable and can influence the economy in unforeseen ways. Examples of such “shocks” on the demand side are changes in households’ propensity to consume and shifts in consumer and business confidence. Monetary policy in time can offset such shocks in private-sector demand but, because of their nature, not as they occur. On the supply side, matters can be even more complicated. Natural disasters, disruptions in the supply of oil, and agricultural losses are examples of adverse supply shocks. Because such events tend to raise prices and reduce output, monetary policy can attempt to counter the losses of output or the higher prices, but cannot completely offset both.

In practice, monetary policymakers do not have up-to-the-minute, reliable information about the state of the economy and prices. Information is limited because of lags in the publication of data and because of later revisions in data. Also, policymakers have a less-than-perfect understanding of the way the economy works, including the knowledge of when and to what extent policy actions will affect aggregate demand. The operation of the economy changes over time, and with it the response of the economy to policy measures. These limitations add to uncertainties in the policy process and make determining the appropriate setting of monetary policy instruments more difficult.

Besides monetary policy, the economy is affected by such factors as government fiscal initiatives and unforeseen events.

The central bank will have an easier time reaching its goals if the public understands them and believes the Federal Reserve will take the steps necessary to reach them. For example, a believable anti-inflation policy, implemented through a deceleration of aggregate demand, will more quickly lead the public to expect lower inflation, and such an expectation will itself help bring down inflation. In that case, workers will not feel the need to demand large wage increases to protect themselves against expected price hikes, and businesses will be less aggressive in raising their prices, knowing that doing otherwise would result in losses in sales. In these circumstances, inflation will come down more or less in line with the slowing of aggregate demand, with much less slack emerging in resource markets than if workers and businesses continued to act as if inflation were not going to slow.

GUIDES FOR MONETARY POLICY

The goals of monetary policy are spelled out in law. But how will the Federal Reserve know whether or not its current operations in the reserves market are consistent with those goals or whether it needs to be more restrictive or more accommodative? The actions taken in the reserves market affect the economy with considerable lags. If the Federal Reserve waits to adjust rates until it sees an undesirable change in employment or prices, it will be too late to achieve its objectives. Consequently, people have suggested that the Federal Reserve pay particularly close attention to guides to policy that are intermediate between operations in the reserves market and effects in the economy. Among those frequently mentioned are monetary and credit aggregates, interest rates, and the foreign exchange value of the dollar. Some suggest that one or the other of these measures be used as an intermediate target—that is, one with a specific formal objective. Others suggest that they be used less formally as indicators of the longer-term effects of monetary policy on the economy, to be judged in conjunction with a variety of other financial and economic information.

Monetary and Credit Aggregates

The Humphrey–Hawkins Act has something to say about the guides for monetary policy: It specifies that each February the Federal Reserve must announce publicly its objectives for growth

in money and credit and that at midyear it must review its objectives and revise them if appropriate. This provision of the act was based on the presumption of a reasonably stable relation between growth of money and credit, on the one hand, and the goals of monetary policy, on the other—a relation that could be fruitfully exploited in achieving those goals. Control over the money stock, it was thought, could in effect anchor the price level in much the same way that the former gold standard was thought to have anchored the price level.¹

Nonetheless, the law foresaw that revision might be appropriate should, for example, the relation between the monetary or credit aggregates and the economy—the velocity of money or credit—change unpredictably (see the box for a description of the content of the monetary and credit aggregates).² In these circumstances, adherence to the initial objectives for money or credit growth would lead to an undesirable outcome for output or prices. The Federal Reserve is not required to achieve its announced objectives for these financial aggregates, but if it does not, it must explain the reasons to Congress and the public.

The usefulness of the monetary aggregates for indicating the state of the economy and for stabilizing the level of prices has been called into question by frequent departures of their velocities from historical patterns. As can be seen in chart 2.1, the velocity of M2 had until recently been fairly stable over long periods, although it did vary over shorter periods in ways related to the interest-rate cycle. In the early 1990s, the velocity of M2 departed from this pat-

1. Some economists have argued that, besides serving as a longer-term anchor for the price level, tight control over the money stock will stabilize the economy in the shorter run. To the extent that the relation between the money stock and the economy is very close, an overheating of the economy is associated with stronger demand for money. If the Federal Reserve sticks to a predetermined path for money growth and does not meet that demand, interest rates will rise and will choke off demand and inflationary pressures. Conversely, a weakening of the economy is associated with a decreased demand for money. If the Federal Reserve sticks to a predetermined path for money growth, interest rates will decline and aggregate demand will increase.

Most observers, however, have come to believe that the slippage between the money stock and the economy, at least in the short run, is sufficiently great that efforts to exert tight control over money may lead to less, rather than to more, economic stability.

2. Velocity is the ratio of nominal gross domestic product (GDP) to the money stock (or credit aggregate). If the money stock grows at the same rate as nominal GDP, velocity is steady. If the money stock grows less rapidly than nominal GDP, velocity rises; and if it grows more rapidly, velocity falls.

The Content of Monetary and Credit Aggregates

The Federal Reserve publishes data on three monetary aggregates. The first, M1, is made up of types of money commonly used for payment, basically currency and checking deposits. The second, M2, includes M1 plus balances that generally are similar to transaction accounts and that, for the most part, can be converted fairly readily to M1 with little or no loss of principal. The M2 measure is thought to be held primarily by households. The third aggregate, M3, includes M2 plus certain accounts that are held by entities other than individuals and are issued by

banks and thrift institutions to augment M2-type balances in meeting credit demands; it also includes balances in money market mutual funds held by institutional investors.

The Federal Reserve publishes a broad measure of credit extended to domestic nonfinancial sectors.

The aggregates have had different roles in monetary policy as their reliability as guides has changed. Here are their principal components:

<u>M1</u>	<u>M2</u>	<u>M3</u>	<u>Credit extended to (debt owed by)</u>
Currency (and travelers checks)	M1	M2	Federal government
Demand deposits	Savings deposits and money market deposit accounts	Large time deposits	State and local governments
NOW and similar interest-earning checking accounts	Small time deposits ¹	Wholesale-type money market mutual fund balances	Households
	Retail-type money market mutual fund balances	Term (beyond overnight) RPs	Nonfinancial businesses
	Overnight repurchase agreements (RPs)	Term Eurodollars	
	Overnight Eurodollars		

1. Time deposits in amounts of less than \$100,000, excluding balances in IRA and Keogh accounts.

Chart 2.1
M2 velocity and opportunity cost



Note. Quarterly data.

1. Two-quarter moving average of the difference between the three-month Treasury bill rate and the average M2 rate.
2. Ratio of nominal GDP to M2.

tern and drifted upward. This upward drift occurred even as market interest rates were moving down, a change that should have added to the attractiveness of deposits in M2 and lowered its velocity. Such departures from historical experience have made forecasting velocity, and thus the rate of monetary growth needed to achieve economic objectives, more difficult.

Many observers believe that the recent unusual monetary behavior is due to the growing variety of new financial assets offered to the public, such as new kinds of mutual funds and mutual fund services, and to changes in the way people manage their financial portfolios. Some analysts expect that rapid financial change will continue and will further undermine the value of the monetary aggregates as guides to policy. Others expect the process to settle down as people complete their shifts of investment-type balances to assets outside M2. In this view, once the shift is fairly complete, M2—perhaps measured somewhat differently—will again behave in a reliable way and can again be used effectively as a guide for monetary policy.

Short- and Long-term Interest Rates

Interest rates have frequently been proposed as a guide to policy. Surely, some argue, changes in the provision of reserves by the Federal Reserve can influence interest rates, and changes in interest rates affect various spending decisions. Moreover, information on interest rates is available on a real-time basis.

Arguing against giving interest rates a key role in guiding monetary policy is the uncertainty about what level or path of interest rates is consistent with the more basic goals. The appropriate level or path will vary with the stance of fiscal policy, changes in patterns of business and household spending, the productivity of capital, and economic developments abroad. It is difficult not only to gauge the strength of these various forces at any time but also to translate them into an appropriate level of interest rates. Moreover, real interest rates—that is, interest rates net of expected inflation—drive spending decisions. Expected inflation is not readily measured; thus, assessing what the level of real interest rates happens to be is difficult. However, failing to account for inflation expectations can result in misleading signals coming from nominal interest rates. For example, if the public expected more inflation, nominal interest rates would tend to rise, as investors sought protection for the greater loss of purchasing power, and might lead to the belief that monetary policy had become tighter and more disinflationary when, in fact, just the reverse had occurred.

Alternatively, the yield curve—the difference between the interest rate on longer-term securities and the interest rate on short-term instruments—has been proposed. Whereas short-term interest rates are strongly influenced by current reserve provisions of the central bank, longer-term rates are influenced by expectations of future short-term rates and thus by the longer-term effects of monetary policy on inflation and output. For example, a steep positive yield curve (that is, long-term rates far above short-term rates) may be a signal that participants in the bond market believe that monetary policy has become too expansive and thus, without a monetary policy correction, more inflationary. Such a curve would be telling the central bank to provide fewer reserves. Conversely, an inverted yield curve (short-term rates above long-term rates) may be an indication that policy is restrictive, perhaps overly so. However, various other influences, such as uncertainty about the

course of interest rates, affect long-term interest rates. Thus, a steepening of the yield curve may indicate not that the thrust of monetary policy is too expansive, but that market participants have become more uncertain about the outlook for interest rates. In other words, liquidity premiums embodied in long-term interest rates may have risen. More generally, interest rates can vary for a variety of reasons, especially over short periods, and the Federal Reserve must exercise considerable caution in interpreting and reacting to their fluctuations.

Foreign Exchange Rates

Exchange rate movements are an important channel through which monetary policy affects the economy, and they tend to respond promptly to a change in the provision of reserves and in interest rates. Information on exchange rates, like that on interest rates, is available almost continuously throughout each day.

Interpreting the meaning of movements in foreign exchange rates, however, is not always straightforward. A decline in the foreign exchange value of the dollar, for example, could indicate that monetary policy had become more accommodative, with possible risks of inflation. But foreign exchange rates respond to other influences, such as market assessments of the strength of aggregate demand or developments abroad. For example, a weaker dollar on foreign exchange markets could instead suggest lessened demand for U.S. goods and decreased inflationary pressures. Or a weaker dollar could result from higher interest rates abroad—making assets in those countries more attractive—that could come from strengthening economies or the tightening of monetary policy abroad.

Determining which level of the exchange rate is most consistent with the ultimate goals of policy can be difficult. Selecting the wrong level could lead to a sustained period of deflation and high levels of economic slack or to a greatly overheated economy. Also, reacting in an aggressive way to exchange market pressures could result in the transmission to the United States of certain disturbances from abroad, as the exchange rate could not adjust to cushion them. Consequently, the Federal Reserve does not have specific targets for exchange rates but considers movements in those rates in the context of other available information about financial markets and economies at home and abroad.

Conclusion

All of the guides to monetary policy discussed above have something to do with the transmission of monetary policy to the economy. As such, they have certain advantages. However, none has shown a consistently close enough relationship with the ultimate goals of monetary policy that it can be relied upon single-mindedly. As a consequence, makers of monetary policy have tended to use a broad range of indicators—those discussed above along with information about the actual performance of output and prices—to judge trends in the economy and to assess the stance of monetary policy.

Such an eclectic approach enables the Federal Reserve to use all available information in conducting policy. This may be especially necessary as market structures and economic processes change in ways that affect the usefulness of any single indicator. However, communicating policy intentions and actions to the public can be more difficult with the eclectic approach than with the approach, for example, of targeting the money stock if the linkage between the money stock and the economy were fairly close and reliable. And, by looking at many variables, which necessarily will give some conflicting signals, the Federal Reserve may delay taking needed action toward restraint or expansion suggested by one or more indicators. As a consequence, more aggressive measures may be needed later if the ultimate goals of policy are to be achieved. ■

The Implementation of Monetary Policy

The Federal Reserve uses the tools of monetary policy—open market operations, the discount window, and reserve requirements—to adjust the supply of reserves in relation to the demand for reserves. In so doing, it can influence the amount of pressure on bank reserve positions and, hence, the federal funds rate.

IN GENERAL, THE FEDERAL RESERVE can take one of two basic approaches to affect reserves:

- It can target a certain *quantity* of reserves, allowing changes in the demand for reserves to influence the federal funds rate.
- It can target the *price* of reserves (the federal funds rate) by adjusting the supply of reserves to meet any change in the demand for reserves.

The Federal Reserve has used variations of these basic approaches over the years.

OPERATIONAL APPROACHES

Before October 1979, the Federal Reserve's approach to affecting reserves was designed to produce a targeted degree of ease or tightness in reserve market conditions (that is, to achieve a desired cost or availability of reserves). These conditions were gauged by the way the federal funds rate behaved as well as by the extent to which reserves in the depository system fell short of satisfying required reserves and institutions had to borrow from the discount window or run down their excess reserves. Although the target for reserve market conditions was set so as to be consistent with the objectives specified for money and credit, the Federal Reserve initially accommodated any expansion of money by providing whatever nonborrowed reserves were needed to support that expansion. If money and credit persistently behaved differently from the policy objectives, the Federal Reserve would change the pressure on reserve market conditions

by varying the extent to which it accommodated the demand for reserves. If, for example, the growth of money and credit was weaker than desired and additional ease was needed, the Federal Reserve would increase nonborrowed reserves by buying securities in the open market. This increase in nonborrowed reserves lowered the amount of reserves that banks needed to borrow at the discount window and decreased the pressure on them to borrow in the federal funds market. As a result, interest rates in the federal funds market, and in short-term markets generally, tended to fall. When additional tightness was needed, the Federal Reserve would reduce nonborrowed reserves by selling securities in the open market or would increase reserves less rapidly than it otherwise would have done. These actions would boost the need to borrow at the discount window, increase demand in the federal funds market, and raise short-term rates.

Control of money and credit under this procedure rested on the ability to estimate the relation between the money market conditions that guided the provision of nonborrowed reserves and the amount of money the public would hold at the associated levels of interest rates. Control also depended on the Federal Reserve's willingness to alter the relative availability of reserves, and hence short-term interest rates, when money growth deviated from its desired path. As inflation intensified in the late 1970s, the Federal Open Market Committee (FOMC) changed its approach to implementing open market operations. In October 1979, it began targeting the quantity of reserves—specifically, nonborrowed reserves. A predetermined target path for nonborrowed reserves was based on the FOMC's objectives for the M1 money stock. If M1 grew faster than the FOMC prescribed, actual required reserves would grow faster than nonborrowed reserves; the faster growth of required reserves, in turn, would produce upward pressure on the federal funds rate and other short-term interest rates. The rise in interest rates would then reduce the amount of M1 deposits demanded by the public, and M1 would be brought back toward its targeted path.

Later, however, the combination of interest rate deregulation and financial innovation disrupted the historical relationships between M1 and the objectives of monetary policy. In response, the Federal Reserve in late 1982 shifted from controlling M1 through a reserves-oriented approach and returned to accommodating short-run fluctuations in reserves demand and preventing these

fluctuations from affecting the federal funds rate. At the same time, Federal Reserve policy decisions became conditioned on a much wider range of economic and financial variables, including M2 and other broad monetary and credit aggregates, that seemed more closely linked than M1 to the long-term goals of monetary policy. Since 1982, daily open market operations have been keyed once again to achieving a particular degree of tightness or ease in reserve market conditions rather than to the quantity of reserves outstanding.

In general, no one approach to implementing monetary policy is likely to be satisfactory under all economic and financial circumstances. The actual approach has been adapted at various times in light of different considerations, such as the need to combat inflation, the desire to encourage sustainable economic growth, uncertainties related to institutional change, and evident shifts in the public's attitudes toward the use of money. When economic and financial conditions warrant close control of a monetary aggregate, more emphasis may be placed on guiding open market operations by a fairly strict targeting of reserves. In other circumstances, a more flexible approach to managing reserves may be required.

OPEN MARKET OPERATIONS

Open market operations involve the buying and selling of securities by the Federal Reserve. A Federal Reserve securities transaction changes the volume of reserves in the depository system: A purchase adds to nonborrowed reserves, and a sale reduces them. In contrast, the same transaction between financial institutions, business firms, or individuals simply redistributes reserves within the depository system without changing the aggregate level of reserves.

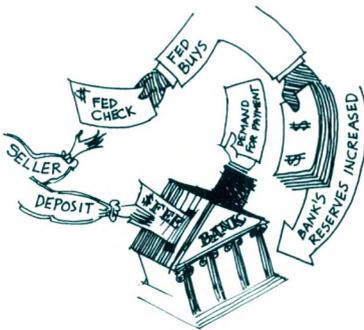
When the Federal Reserve buys securities from any seller, it pays, in effect, by issuing a check on itself. When the seller deposits the check in its bank account, the bank presents the check to the Federal Reserve for payment. The Federal Reserve, in turn, honors the check by increasing the reserve account of the seller's bank at the Federal Reserve Bank. The reserves of the seller's bank rise with no offsetting decline in reserves elsewhere; consequently, the total volume of reserves increases. Just the opposite occurs when

the Federal Reserve sells securities: The payment reduces the reserve account of the buyer's bank at the Federal Reserve Bank with no offsetting increase in the reserve account of any other bank, and the total reserves of the banking system decline. This characteristic—the dollar-for-dollar change in the reserves of the depository system with a purchase or sale of securities by the Federal Reserve—makes open market operations the most powerful, flexible, and precise tool of monetary policy.

In theory, the Federal Reserve could provide or absorb bank reserves through market transactions in any type of asset. In practice, however, most types of assets cannot be traded readily enough to accommodate open market operations. For open market operations to work effectively, the Federal Reserve must be able to buy and sell quickly, at its own convenience, in whatever volume may be needed to keep the supply of reserves in line with prevailing policy objectives. These conditions require that the instrument it buys or sells be traded in a broad, highly active market that can accommodate the transactions without distortions or disruptions to the market itself.

The market for U.S. government securities satisfies these conditions, and the Federal Reserve carries out by far the greatest part of its open market operations in that market. The U.S. government securities market, in which overall trading averages more than \$100 billion a day, is the broadest and most active of U.S. financial markets.

Transactions are handled over the counter (that is, not on an organized stock exchange), with the great bulk of orders placed with specialized dealers (both bank and nonbank). Although most dealer firms are in New York City, a network of telephone and wire services links dealers and customers regardless of their location to form a worldwide market.



The Federal Reserve's holdings of government securities are tilted somewhat toward Treasury bills, which have maturities of one year or less (table 3.1). The average maturity of the Federal Reserve's portfolio of Treasury issues is only a little more than 3 years, somewhat below the average maturity of roughly 5½ years for all outstanding marketable Treasury securities. In the 1980s, the average maturity of the Federal Reserve's portfolio

Table 3.1
Securities held in the Federal Reserve's open market account
 as of June 29, 1994

Billions of dollars

<i>Remaining maturity</i>	<i>U.S. Treasury securities</i>	<i>Federal agency securities</i>	<i>Total</i>
1 year or less	209.5	1.8	211.3
More than 1 year to 5 years	83.7	1.8	85.6
More than 5 years to 10 years	25.3	.6	25.8
More than 10 years	33.1	0	33.1
Total	351.6	4.2	355.8

shortened somewhat, as the Federal Reserve began to emphasize liquidity in managing its portfolio. More recently, the Federal Reserve has slightly lengthened the average maturity of its portfolio.

Other Factors Influencing Nonborrowed Reserves

Most purchases and sales of securities are not undertaken to adjust conditions in reserves markets as a result of a policy decision. Rather they are made to offset other influences on reserves. Certain factors beyond the immediate control of the Federal Reserve, such as the amount of currency in circulation, the size of Treasury balances at Federal Reserve Banks, and the volume of Federal Reserve float, cause reserves to rise and fall. (These factors are discussed in detail in appendix A.)

The movement of these factors, called technical factors, must be forecast so that the makers of policy can determine what would happen to reserves if the Federal Reserve were to abstain from open market operations. Fluctuations in some technical factors are attributable mainly to pronounced seasonal influences, and thus their effect on nonborrowed reserves is fairly predictable. For example, the amount of currency in circulation rises late in the year because individuals tend to hold more currency during the holiday shopping season. This rise in currency in circulation drains reserves from the depository system because, when a depositor withdraws currency from a bank, the bank turns to the

Federal Reserve to replenish its depleted vault cash and pays for the shipment of currency by drawing down its reserve account. In contrast, a decline in currency in circulation provides reserves.

Movements in the Treasury's balance at the Federal Reserve also follow certain regular, seasonal patterns, which are related to corporate and individual tax dates, social security payments, and the like. When the Treasury, perhaps anticipating a major spending commitment, shifts funds from its collateralized "tax and loan" accounts at commercial banks into its account at the Federal Reserve, reserves are removed from the banking system. In contrast, when the Treasury makes a payment, such as a tax refund, it reduces its balance at the Federal Reserve and injects reserves into the depository system.

Other technical factors are affected more by random occurrences, such as transportation difficulties due to winter storms, and thus are more difficult to predict. One such factor is float, which is the difference between the total value of checks in the process of collection that have been credited to banks' reserve accounts and the value of those collected but not yet credited to banks' reserve accounts. A rise in float increases reserves whereas a decline in float reduces them.

Technical factors can provide or absorb a sizable amount of reserves. If, on balance, they are adding to or drawing down reserves in amounts consistent with the FOMC's objectives as to the supply of reserves, the Federal Reserve will take no action. At other times, the Federal Reserve may undertake open market operations to neutralize technical factors and to obtain desired levels of nonborrowed reserves. Indeed, most of the Federal Reserve's operations are defensive in the sense that they are intended to offset the various market forces that are pushing the level of nonborrowed reserves in a direction at odds with the FOMC's objectives.

Techniques of Open Market Operations

Depending on the reserve situation, the Federal Reserve approaches open market operations in one of two ways. When forecasts of the factors that influence reserves indicate that the supply of reserves will probably continue to need adjustment, the Fed-

eral Reserve may make outright purchases or sales of securities. If the need is to withdraw reserves, the Federal Reserve may also redeem maturing securities held in its portfolio. (When the Federal Reserve redeems the securities, the Treasury takes funds out of its account to pay the Federal Reserve, leaving fewer reserves in the depository system.) In general, it conducts outright transactions (sales, purchases, and redemptions) only a few times each year, to meet longer-term reserve needs.

When projections indicate only a temporary need to alter reserves, either because the technical factor affecting reserves is expected to be reversed or offset or because the near-term outlook for reserves is uncertain, the Federal Reserve may engage in transactions that only temporarily affect the supply of reserves—repurchase agreements, in the case of temporary additions of reserves, and matched sale–purchase transactions, in the case of temporary drains of reserves. These temporary transactions, which are designed to reduce fluctuations in the overall supply of reserves by offsetting the short-term effects of technical factors, are used much more frequently than are outright transactions. Market participants monitor these operations very closely for signs of any change in the underlying thrust of monetary policy.

Open market operations can be used to meet a temporary need or to affect the supply of reserves over the longer term.

Outright Purchases and Sales

Transactions on an outright basis occur largely through auctions in which dealers are requested to submit bids to buy or offers to sell securities of the type and maturity that the Federal Reserve has elected to sell or to buy. The dealers' bids or offers are arranged according to price, and the Federal Reserve accepts amounts bid or offered in sequence, taking the highest prices bid for its sales and the lowest prices offered for its purchases, until the desired size of the whole transaction is reached. The Federal Reserve also conducts securities transactions with several official agencies, such as foreign central banks. Occasionally the Federal Reserve reduces its holdings of securities by redeeming maturing securities rather than rolling them over at Treasury auctions, as it usually does (table 3.2).

Repurchase Agreements

When a temporary addition to bank reserves is called for, the Federal Reserve engages in short-term repurchase agreements (RPs)

Table 3.2
Federal Reserve System outright transactions, 1990–93¹
 Billions of dollars

<i>Transaction</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
Purchases	25.2	31.4	34.1	36.9
Sales	7.6	.1	1.6	0
Redemptions	5.6	1.3	2.2	1.5
Total	38.4	32.8	37.9	38.5

1. Components may not sum to totals because of rounding.

with dealers; that is, it buys securities from dealers who agree to repurchase them by a specified date at a specified price (table 3.3). Because the added reserves will automatically be extinguished when the RPs mature, this arrangement is a way of temporarily injecting reserves into the depository system.

Repurchase agreements for the Federal Reserve account may be conducted on an overnight basis or on a so-called term basis. Most term RPs mature within seven days, and dealers sometimes have the choice of terminating the transaction before maturity. The absorption of reserves due to premature terminations by dealers may also suit the needs of the Federal Reserve. Such terminations often occur when the availability of reserves to depository institutions is greater than anticipated, which tends to reduce the borrowing costs that dealers face elsewhere.

Whenever the Federal Reserve arranges RPs with dealers, the distribution of the transaction among dealers is determined by auction. Individual dealers may enter several offers at various interest rates. The Federal Reserve arranges all the offers in descending order and then accepts those offers with the highest rates up to the dollar amount needed to meet the reserve objectives.

Matched Sale–Purchase Transactions

When the Federal Reserve needs to absorb reserves temporarily, it employs matched sale–purchase transactions with dealers.

These transactions involve a contract for immediate sale of securities to, and a matching contract for subsequent purchase from,

Table 3.3
Federal Reserve System temporary transactions, 1990–93
 Volume in billions of dollars

	1990		1991		1992		1993	
	<i>Num.</i>	<i>Vol.</i>	<i>Num.</i>	<i>Vol.</i>	<i>Num.</i>	<i>Vol.</i>	<i>Num.</i>	<i>Vol.</i>
Repurchase agreements ¹	128	189.9	142	508.7	144	533.3	163	627.6
Matched sale–purchase transactions	21	48.3	33	75.3	20	28.6	5	10.9

1. Includes all types of repurchase agreements.

each participating dealer. The maturities of such arrangements do not usually exceed seven days. The initial sale causes reserves to be drained from the banking system; later, when the Federal Reserve purchase is implemented, the flow of reserves is reversed.

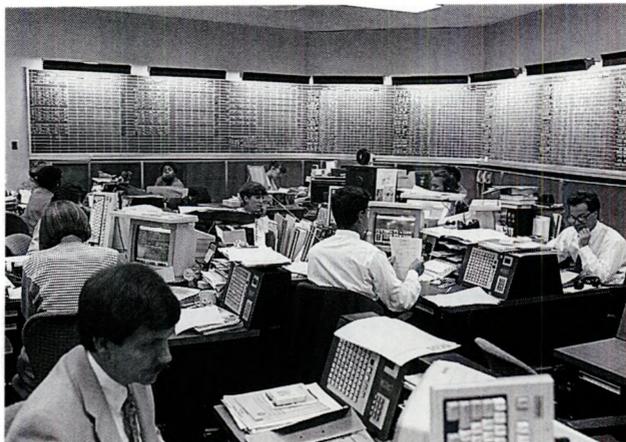
Matched sale–purchase transactions are typically arranged in Treasury bills. The Federal Reserve selects a bill in which it has a substantial holding and invites dealers to state an interest rate at which they are willing to purchase the bills for same-day delivery and to sell them back for delivery on a subsequent day. It then accepts the most advantageous (lowest rate) bids to the point that sufficient reserves are withdrawn.

A Typical Day in the Conduct of Open Market Operations

Each weekday morning, two groups of Federal Reserve staff members, one at the Federal Reserve Bank of New York and one at the Board of Governors in Washington, prepare independent projections of the technical factors affecting reserve availability for the next few days and for several weeks to come. At 11:15 a.m., the Manager of the System Open Market Account and the group in New York are linked in a telephone conference call with members of the senior staff at the Board of Governors and with a Federal Reserve Bank president who is currently a member of the FOMC. Participants in the call discuss staff forecasts for reserves, recent developments in financial markets, and the latest data on the monetary and credit aggregates. They pay special attention to trading conditions in the reserves market, particularly to the level

of the federal funds rate in relation to the level expected to be consistent with the reserve conditions specified in the policy directive. In light of this information, they determine a program of open

market operations. After the call, which usually ends around 11:30 a.m., all FOMC members as well as all nonmember Bank presidents are informed of the actions the Federal Reserve intends to take during the day.



The Domestic Trading Desk at work.

When the Federal Reserve has decided to undertake a particular operation, members of the staff at the Domestic Trading Desk (the Desk)

at the Federal Reserve Bank of New York contact dealers trading in U.S. Treasury and federal agency securities. Approximately three dozen dealers that actively trade in U.S. Treasury and federal agency securities have relationships with the Desk; thus, the Federal Reserve normally encounters no difficulty in promptly completing its large orders. Once the transaction is executed, the reserve account of each dealer's bank is credited or debited accordingly, and the supply of reserves to the banking system changes.

THE DISCOUNT WINDOW

The Federal Reserve's lending at the discount window serves two key functions:

- It complements open market operations in managing the reserves market day to day and in implementing longer-term monetary policy goals.
- It facilitates the balance sheet adjustments of individual banks that face temporary, unforeseen changes in their asset-liability structure.

The role of the discount window in the conduct of monetary policy has changed substantially since the early years of the Fed-

eral Reserve. In the 1920s, the discount window was the primary conduit for monetary policy and for the provision of reserves to the depository system. As U.S. financial markets developed, however, providing reserves primarily through open market operations became feasible and more efficient. As a result, discount window lending has for many years accounted for a relatively small fraction of total reserves.

Despite the comparatively small volume of borrowed reserves, the discount window remains an important factor in reserves market management and in the broader implementation of monetary policy. It serves as a buffer in the reserves market against unexpected day-to-day fluctuations in reserves demand and supply. When the demand for reserves is unexpectedly high or the supply is unexpectedly low, banks can turn to the window for reserves. Thus, the availability of the window helps to alleviate pressures in the reserves market and to reduce the extent of unexpected movements in the federal funds rate. Moreover, adjustments to the basic discount rate can be important in signaling and implementing shifts in the Federal Reserve's monetary policy stance.



Apart from its role in monetary policy, discount window lending enables individual banks to adjust their balance sheets. Open market operations could not easily duplicate the discount window's role in facilitating certain balance sheet adjustments. Although discount window loans and open market operations have comparable effects on aggregate reserve availability, the loans are uniquely suited to the task of meeting the temporary liquidity needs of individual depositories. Conversely, open market operations are better suited to implementing the short-term adjustments to the availability of aggregate reserves that are necessary in conducting monetary policy.

Interest Rates

The structure of interest rates charged on discount window credit has changed over the years. However, the rate for adjustment credit, which is the basic discount rate, has always been the most significant for monetary policy. Today, separate, market-related rates generally apply for seasonal credit and extended credit.

The basic discount rate that each Federal Reserve Bank charges on its loans is established by the Bank's board of directors, subject to review and determination by the Board of Governors. Originally each Federal Reserve Bank set its discount rate independently, to reflect the banking and credit conditions in its own District. Over the years, however, the transition from regional credit markets to a national credit market has gradually produced a national discount rate. As a result, the Federal Reserve maintains a uniform structure of discount rates across all Reserve Banks.

The Federal Reserve maintains a uniform structure of discount rates across all Reserve Banks.

The basic discount rate is adjusted from time to time, in light of changing market conditions, to complement open market operations and to support the general thrust of monetary policy. Changes in the discount rate are made judgmentally rather than automatically and may somewhat lag changes in market rates. The immediate response of market interest rates to a change

in the discount rate—the announcement effect—depends partly on the extent to which the change has been anticipated. If rates have adjusted in anticipation of a change in the discount rate, the actual event may have only moderate effects on market conditions. Generally, the response of market rates to a change in the discount rate will be largest when the market views the adjustment as signaling a basic shift in the stance of monetary policy. Indeed, given the generally small volume of discount window credit, the direct effect of a discount rate change on the funding costs of depository institutions is quite small. Thus, the effect of changes in the discount rate must be interpreted in the context of existing economic and financial conditions and in relation to other policy actions. For example, the response of market rates will also depend on actions taken in open market operations.

The basic discount rate is applied on all adjustment credit. Surcharges above the basic discount rate have at times been applied to larger institutions that relied too frequently on adjustment borrowing as a source of funding. In 1980 and 1981, for example, the Federal Reserve applied a surcharge (varying between 2 and 4 percentage points) to adjustment borrowing by institutions having deposits of \$500 million or more that appeared to be borrowing more frequently than necessary. The surcharges were intended to encourage these institutions to adjust their portfolios more quickly.

Before 1990, the basic discount rate also applied to all loans under the seasonal credit program. In early 1990, after careful review of the program, the Board implemented a market-related rate on seasonal credit. The move was designed to eliminate the implicit subsidy associated with the discount rate, which is a below-market rate, while still providing a reliable source of funds for institutions lacking access to national money markets. The market-related rate applied to seasonal credit is based on an average of recent federal funds rates and ninety-day certificate of deposit (CD) rates, but it is never less than the discount rate applicable to adjustment credit. The market-related rate is reestablished periodically.

At the discretion of each Federal Reserve Bank, the basic discount rate may be applied to extended credit loans for as long as thirty days. A flexible rate somewhat above market rates, and always 50 basis points above the rate charged for seasonal credit, is applied to extended credit loans that are outstanding for more than thirty days. In practice, the flexible rate is often applied to extended credit loans outstanding for less than thirty days.

Borrowing Eligibility

Before the passage of the Monetary Control Act of 1980, only banks that were members of the Federal Reserve System enjoyed regular access to the discount window. The Monetary Control Act extended reserve requirements to nonmember institutions and provided that any institution holding deposits subject to reserve requirements (such as transaction accounts and nonpersonal time deposits) would have the same access to the discount window that member institutions have.

Institutions eligible to borrow at the discount window include domestic commercial banks, U.S. branches and agencies of foreign banks, savings banks, savings and loan associations, and credit unions. Many depository institutions meet the eligibility criteria—about 11,000 banks (including U.S. branches and agencies of foreign banks) and 16,000 thrift institutions (including credit unions) at the end of 1993. Eligibility to borrow is in no way contingent upon or related to the use of Federal Reserve priced services (see chapter 7).

Borrowing Procedures

Institutions that expect to borrow at the discount window typically execute a set of legal documents with the Federal Reserve that specify the terms and conditions under which discount window credit will be granted and the requirements for collateral pledged to secure such loans.

All discount window credit must be secured to the satisfaction of the Federal Reserve Bank that is providing the credit. Satisfactory collateral generally includes U.S. Treasury and federal agency securities and, if of acceptable quality, mortgage notes covering one- to four-family residences; state and local government securities; and business, consumer, and other customer notes. Although collateral is generally held in safekeeping at the Federal Reserve Banks or by acceptable third-party custodians, borrowers in good financial condition may be permitted to hold their own collateral, appropriately earmarked; lending against borrower-held collateral, however, is usually of only short duration.

Federal Reserve Banks ensure that the value of collateral pledged to secure a discount window loan exceeds the amount of the loan. The extra cushion of collateral helps protect the Reserve Banks against loss in the event that a borrower defaults.

Technically, discount window credit can be extended as a discount of eligible paper (notes, drafts, and bills of exchange) or as an advance secured by collateral. Although these are two distinct forms of credit, both practices are customarily referred to as discounting, and the interest rate charged on such borrowing is called the discount rate. When obtaining credit in the form of a discount, the borrowing depository institution transfers eligible paper carrying its legal endorsement to the Federal Reserve Bank. In return, the borrower is credited in an amount equal to the discounted value of the eligible paper at the current discount rate. When the discounted paper matures, it is returned to the borrower, and the borrower's reserve account is debited by the full amount of the paper. An advance is simply a loan by a Federal Reserve Bank to the borrowing institution on its note secured by adequate collateral. At one time, discounts were the predominant form of discount window credit. From an operational perspective, however, advances are more convenient, and thus for many years all discount window credit has been in the form of advances.

The Federal Reserve most often makes a loan by crediting the reserve account of the borrowing institution. For borrowers that do not maintain accounts with the Federal Reserve, credit is extended by increasing the reserve account of the borrower's correspondent bank (a bank that has agreed to accept the deposits of, and perform services for, another); essentially, the Federal Reserve writes a check on itself, which the borrower then deposits with its correspondent bank. All loans, whether adjustment, seasonal, or extended credit, are technically demand notes and hence have no real maturity. As a matter of convenience, discount officers may arrange to extend credit for a period of time without requiring the borrowing institution to make a formal request to renew the loan each day.

Types of Credit

The three basic types of discount window credit are adjustment credit, seasonal credit, and extended credit.

- Adjustment credit helps depository institutions meet short-term liquidity needs. For example, an institution experiencing an unexpectedly large withdrawal of deposits may request adjustment credit overnight or for a few days until it finds other sources of funding.
- Seasonal credit assists smaller institutions in managing liquidity needs that arise from regular, seasonal swings in loans and deposits, such as those at agricultural banks associated with the spring planting season.
- Extended credit may be provided to depositories experiencing somewhat longer-term liquidity needs that result from exceptional circumstances.

In addition, the Federal Reserve has the power to extend emergency credit to entities other than banks, although it has not done so since the 1930s.

Adjustment Credit

Adjustment credit helps depository institutions meet temporary liquidity needs arising from short-term fluctuations in assets and liabilities. Three basic principles govern the provision of adjustment credit:

- The Federal Reserve Bank provides credit at its own discretion.

- Borrowing must be for an appropriate reason.
- The borrower must seek other reasonably available sources of funds before turning to the discount window.

No fixed rules define an appropriate reason for borrowing. Some common situations that are appropriate for borrowing include meeting liquidity needs arising from an unexpected loss of deposit or nondeposit funding, avoiding unexpected overnight overdrafts in the institution's reserve account, or meeting liquidity needs arising from operational problems beyond the institution's control or from an external event such as a natural disaster.

The amount of adjustment borrowing has declined over the past decade.

Discount officers apply judgment also in determining whether an institution has sought all other reasonably available sources of funds before turning to the window. For example, most large institutions are presumed to have greater access to alternative funding sources than small community banks have. Branches and agencies of foreign banks, even if they are not large, are presumed to have access to funding in national markets and from their foreign parents or affiliates. Depositories that are members of multibank holding companies are expected to seek funding from affiliates before turning to the window. Institutions that have access to a special industry lender, such as the Federal Home Loan Bank System, are expected to use these sources before requesting an advance from the discount window.

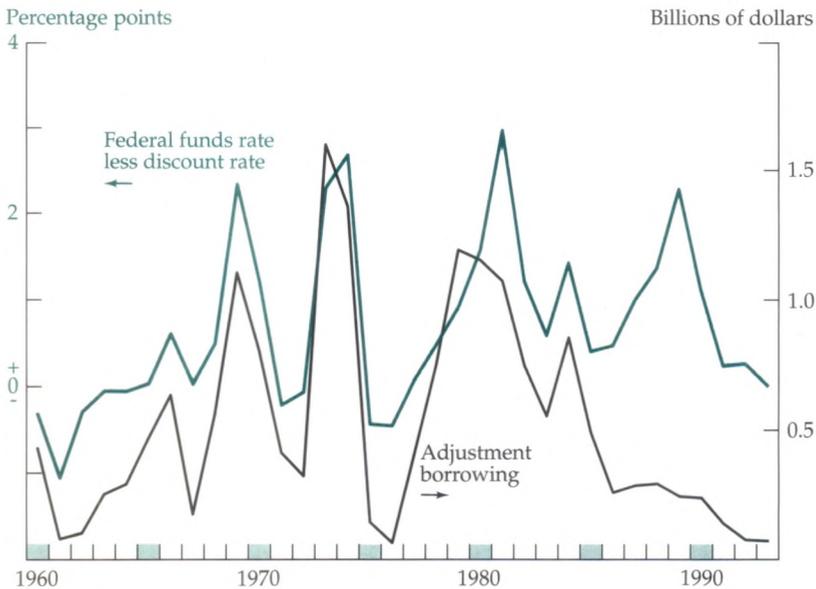
When reviewing a borrowing request, discount officers consider other pertinent information at their disposal, such as information from the institution's primary supervisor, balance sheet information, the frequency and amount of past borrowing, and the institution's general management of its reserve account. While borrowing under the adjustment credit program, institutions provide daily balance sheet data to the Federal Reserve for monitoring purposes. Discount officers carefully review these data to ensure that adjustment credit is not being used inappropriately, such as to fund a planned increase in loans, securities, or federal funds sales or a predictable decline in deposit funding or other liabilities.

A significant factor that affects the level of adjustment borrowing is the spread between the federal funds rate and the discount rate.

(See chart 3.1 for the average annual volume of adjustment borrowing since 1960.) Partly because discount officers routinely monitor banks to ensure that borrowing requests are for appropriate reasons and partly because the market pays close attention to banks that might be relying on discount window credit, most banks are generally reluctant to borrow at the discount window. A positive spread between the federal funds rate and the discount rate (that is, a federal funds rate higher than the discount rate) provides a pecuniary inducement to borrow. When reserves are in heavy demand or short supply, the spread between the federal funds rate and the discount rate tends to widen, encouraging more institutions to overcome their reluctance to borrow. The resulting injection of borrowed reserves helps to alleviate reserve market pressures and to moderate any unexpected spikes in the federal funds rate. In this way, adjustment borrowing serves as a safety valve that relieves short-term pressures in the reserves market.

The level of adjustment borrowing has declined on balance since 1980. This trend reflects several factors. During a period in which many banks were failing, banks became concerned that the market might detect borrowing at the window and interpret it as a sign of financial weakness. Also, a relatively narrow spread between the federal funds rate and the discount rate reduced the pe-

Chart 3.1
Adjustment borrowing and the spread of the federal funds rate over the discount rate



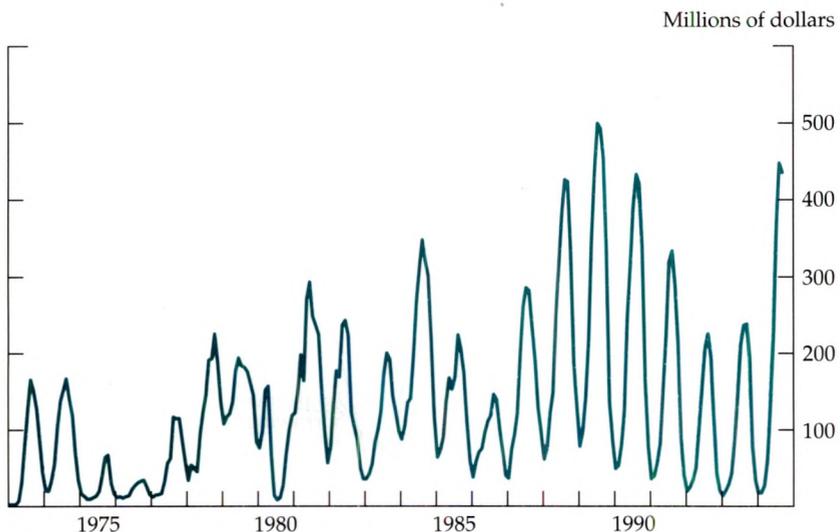
Note. Yearly averages.

cuniary incentive to borrow. Finally, various measures implemented by the Federal Reserve in recent years to reduce risk in the payments system have generally led depositories to monitor their reserve account positions more closely during the day, and consequently they can more promptly respond to unexpected funding losses without relying on discount window credit. The downward trend in adjustment credit notwithstanding, the Federal Reserve encourages banks to turn to the window in appropriate circumstances. Only in this way can the discount window continue to fulfill its role as a safety valve in the reserves market.

Seasonal Credit

Established in 1973, the seasonal credit program assists small institutions that lack effective access to national money markets. To qualify for the program, an institution must demonstrate a seasonal funding need arising from regular, intra-yearly swings in deposits and loans that persist for at least four weeks. The program is structured so that larger institutions must meet a larger portion of their seasonal need through market funding sources; institutions with more than \$250 million in total deposits generally cannot demonstrate a need under the criteria of the seasonal program. Also, institutions with access to a special industry lender that provides similar assistance are expected to use that source before using the Federal Reserve seasonal credit program. The regular pattern in seasonal borrowing during any given year

Chart 3.2
Seasonal borrowing



Note. Monthly data.

is associated primarily with loan demand in the farm sector (chart 3.2). Most seasonal borrowers are small agricultural banks that face strong loan demand and deposit runoffs during the planting and growing seasons over the spring and summer months. Later in the year, farmers reap their harvest and pay down their bank loans. Simultaneously, banks pay down their seasonal loans from the Federal Reserve.

The amount of seasonal borrowing grew rapidly from 1986 through 1989. Most of the growth reflected increasing use of the program by non-member banks that had not been eligible for the program before the Monetary Control Act. In the early 1990s, the peak volume of seasonal borrowing edged down, probably because of somewhat weaker loan demand during a period of sluggish economic growth and the move to a market-related interest rate on seasonal credit.

Most seasonal borrowers are small agricultural banks whose deposits fluctuate with the seasons.

Extended Credit

Extended credit may be provided when exceptional circumstances or practices adversely affect an individual institution. To obtain extended credit, a borrower must comply with certain conditions: It must make full use of reasonably available alternative sources of funds and have a plan in place for eliminating its liquidity problems. The institution must report special data on its financial condition, including data on its lending, which may be restricted while it is borrowing from the Federal Reserve. The Federal Reserve extends credit of this type in coordination with the borrower's primary supervisor.

When conditions warrant, extended credit may be granted to institutions experiencing difficulties adjusting to changing conditions in the money market. For example, during the period of high interest rates in the early 1980s, many thrift institutions suffered substantial losses of deposits. In cooperation with the Federal Home Loan Bank System and other supervisors, the Federal Reserve provided temporary assistance to some thrift institutions until they could obtain funding elsewhere or make other adjustments to their balance sheets.

In determining whether to lend under the extended credit program, the Federal Reserve has always reviewed the financial con-

dition of an institution. The Federal Reserve has sometimes provided credit to troubled depositories to facilitate an orderly closure of the institution. In the 1980s, faced with a succession of banking crises and record numbers of bank and thrift institution failures, the Federal Reserve, in cooperation with other regulators, extended a significant volume of credit to troubled institutions until the problem could be resolved in an orderly fashion.

In the early 1990s, Congress began seeking ways to speed the resolution of troubled institutions in an effort to reduce the cost of bank and thrift institution failures. The outcome of this process was the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). The "prompt corrective action" provisions of FDICIA place increasingly severe restrictions on depositories as their capital positions deteriorate and creates a framework that expedites the resolution of depositories that are close to insolvency.

Among the restrictions imposed by FDICIA on depositories in weak capital condition are limitations on access to the Federal Reserve's discount window. Since December 1993, FDICIA has limited the availability of Federal Reserve credit for undercapitalized and critically undercapitalized institutions. FDICIA stipulates that the Federal Reserve may not lend to an undercapitalized institution for more than 60 days in any 120-day period without incurring a potential liability to the FDIC; exceptions to this rule arise if the borrower's primary federal supervisor certifies that the institution is viable or if the Board conducts its own examination of the borrower and certifies that it is viable. A viable institution is one that is not critically undercapitalized, is not expected to become critically undercapitalized, and is not expected to be placed in conservatorship or receivership. FDICIA states that the Federal Reserve may not lend to a critically undercapitalized institution for more than five days beyond the date on which it became critically undercapitalized without incurring a potential liability to the FDIC and must report any liability of this nature to Congress within six months after it is incurred.

Emergency Credit

Section 13 of the Federal Reserve Act empowers the Federal Reserve to lend to individuals, partnerships, and corporations under "unusual and exigent" circumstances. When not secured by U.S. government securities, any loans to nondepositories under this authority must be approved by five members of the Board of

Governors. Lending under these provisions has been extremely rare, and such loans have not been extended since the 1930s.

RESERVE REQUIREMENTS

Requirements that depository institutions maintain a fraction of their deposits in reserve in specified assets—the third tool of monetary policy—have long been part of our nation’s banking history. The rationale for these requirements has changed over time, however, as the country’s financial system has evolved and as knowledge about how reserve requirements affect the monetary system has grown. At present, reserve requirements aid in the conduct of open market operations by helping to ensure a stable, predictable demand for reserves; they thereby increase the Federal Reserve’s control over short-term interest rates.

Requiring banks to hold a certain fraction of their deposits in reserve, either as cash in their vaults or as non-interest-bearing balances at the Federal Reserve, imposes a cost on the private sector, however. The cost is equal to the amount of forgone interest on these funds—or at least on the portion of these funds that banks hold only because of legal requirements and not to meet the needs of their customers.

Structure of Reserve Requirements

Before 1980, only banks that were members of the Federal Reserve System were subject to reserve requirements established by the Federal Reserve. By the 1970s, however, it had become apparent that the structure of reserve requirements was becoming outdated. The regulatory structure and competitive pressures during a period of high interest rates were putting an increasingly onerous burden on member banks. The situation fostered the growth of deposits, especially the newly introduced interest-bearing transaction deposits, at institutions other than member banks and led many banks to leave the Federal Reserve System. Given this situation, reserve requirements clearly needed to be applied to a broad group of institutions for more effective monetary control—that is, to make the relation between the amount of reserves supplied by the Federal Reserve and the overall quantity of money in the economy more likely to be close.

The Monetary Control Act of 1980 (MCA) reformed reserve requirements to end the problem of membership attrition and to facilitate monetary control. Under the act, all depository institutions regardless of membership in the Federal Reserve System—commercial banks, savings banks, savings and loans, credit unions, U.S. agencies and branches of foreign banks, and Edge Act and agreement corporations—are subject to reserve requirements set by the Federal Reserve. The Board of Governors may impose reserve requirements on transaction deposits and on nonpersonal time deposits solely for the purpose of implementing monetary policy, and these requirements must be applied uniformly to all similar accounts at all depository institutions. The reserve requirement may range from 8 percent to 14 percent on

transaction deposits, which include demand deposits and interest-bearing accounts that offer unlimited checking privileges. Reserve requirements on nonpersonal time deposits, ranging from 0 percent to 9 percent, may be differentiated by maturity. The Board of Governors may also set reserve requirements on the net liabilities of depository institutions in the United States to their foreign affiliates or to other foreign banks.

*Nonmember
as well as member
depository
institutions are
subject to reserve
requirements.*

Reserve requirements are structured to bear relatively less heavily on smaller institutions. At every depository, a reserve requirement of 0 percent is applied to a certain amount of liabilities that are subject to reserve requirements (reservable liabilities), and relatively low requirements are applied to such liabilities up to another level. These levels are adjusted annually to reflect growth in the banking system. In 1994, the first \$4.0 million of reservable liabilities were made exempt from any requirements, and transaction deposits up to \$51.9 million were given a reserve ratio of only 3 percent. Transaction deposits of more than \$51.9 million were subject to a 10 percent reserve requirement.

The MCA also empowers the Board of Governors under extraordinary circumstances to establish a supplemental reserve requirement of up to 4 percentage points on transaction accounts if such an action is deemed essential for the conduct of monetary policy. Unlike reserves required under the regular schedule, these supplemental reserves earn interest. Furthermore, the Federal Reserve Act empowers the Board of Governors, after consultation with Congress, to impose, for periods of up to 180 days, ratios

outside the regular bounds established by the act and to apply requirements to other classes of liabilities.

To provide banks with flexibility in meeting their reserve requirements, the Federal Reserve requires banks to hold an average amount of reserves over a two-week maintenance period rather than a specific amount on each day. The Federal Reserve also offers reserve carry-forward options within certain limits; that is, excess reserves of up to 4 percent of reserve and clearing-balance requirements during the maintenance period may be carried forward and used to help satisfy requirements in the next period. Any deficiency of up to 4 percent of a bank's reserve and clearing-balance requirements during a maintenance period similarly may be carried forward to be made up by the holding of additional reserves in the next period. A penalty equal to the discount rate plus 2 percentage points is levied against reserve deficiencies beyond the carry-forward amount.

Relation to Open Market Operations

The reserve requirement structure specified in the MCA was designed primarily to tighten the link between reserves and M1. At the time the act was written, the Federal Reserve was focusing on controlling growth in M1 to foster the nation's economic objectives. A tight link between reserves and M1 was considered crucial to the Federal Reserve's efforts to exercise precise, short-run control of M1. By making all M1 deposits at all depositories subject to reserve requirements and by extending requirements to some nontransaction deposits as well, the MCA broadened the reserve base. It increased the number of institutions bound by reserve requirements to hold balances at the Federal Reserve, thereby strengthening the System's ability to influence aggregate levels of deposits by manipulating the quantity of reserves. The MCA also improved the predictability of the link between reserves and M1 by vastly simplifying the existing reserve requirement structure: It made the components of M1 subject to more uniform reserve ratios so that shifts among different types of deposits or among institutions of various sizes or types no longer altered the money-reserves relationship.

In 1982, the Federal Reserve took another step to improve its short-run control of M1 by switching to a contemporaneous re-

serve requirement (CRR) scheme. It made the period in which banks must maintain their reserves against transaction deposits virtually contemporaneous with the period in which deposit levels are computed for determining reserve requirements. This move tightened the real-time link between reserves and M1. In so doing, the Federal Reserve remedied a weakness in the short-run monetary control mechanism of the reserves-based operating procedure employed at the time.

Ironically, by 1984, when the CRR scheme was instituted, the Federal Reserve had shifted its attention away from short-run, reserves-based control of M1 and had begun to focus on M2. The latter aggregate appeared more closely linked to the objectives of policy than did M1, which had begun to behave much differently in relation to the economy, in part because it had become highly sensitive to interest rates after the authorization of nationwide NOW accounts and the general deregulation of interest rates on deposits. Thus, the basic structure of reserve requirements, which had been meticulously designed to facilitate the control of M1 through a reserves-oriented targeting procedure, had come to be seen by some as an anachronism.

Reserve requirements provide a stable, predictable demand for aggregate reserves.

Actually, reserve requirements continue to be important in the conduct of monetary policy, partly because they provide a stable, predictable demand for aggregate reserves. Without reserve requirements, banks would still hold some balances at the Federal Reserve to meet their clearing needs. The exact amount of balances that banks wish to hold for clearing purposes may vary considerably from day to day, however, and the Federal Reserve cannot precisely forecast it. By making reserve requirements the binding constraint on banks' demand for reserves—that is, by keeping required balances above the shifting and unpredictable level needed for clearing purposes—the Federal Reserve can more accurately determine the banking system's demand for reserves. Thus, it can more readily achieve a desired degree of pressure on bank reserve positions by manipulating the supply of reserves.

Moreover, the level of required reserves and the averaging method used to meet it afford banks flexibility that helps smooth fluctuations in reserve markets. Banks use this flexibility by sub-

stituting reserves on one day of the period, when reserves are expected to be less costly, for those on another day, when reserves are expected to be more costly. This flexibility would be reduced if most reserve balances were needed for purposes of clearing.

Depositories that have insufficient required reserve balances to meet their clearing needs can, under the provisions of the MCA, open clearing accounts. Banks can contract with the Federal Reserve to hold an average amount of their clearing balances in their reserve accounts over the two-week reserve maintenance period. If they fail to hold the amount required under the contract, they are penalized, much as they would be if they failed to hold sufficient balances to meet their reserve requirements. Unlike required reserve balances, however, which do not earn interest, banks receive earnings credits on clearing balances held under their contractual agreement. They may use these earnings credits to defray the costs of Federal Reserve priced services. Thus, for a bank, opening a clearing balance account is a virtually costless means of boosting the average balance it must hold in its reserve account over the maintenance period, of providing extra insurance against overdrafts, and of adding flexibility to reserve management.

Changes in Required Reserve Ratios

Changes in reserve requirement ratios—the percentage of deposits of certain types that depositories must hold in reserve—can be a useful supplementary tool of monetary policy. Increasing the ratios reduces the volume of deposits that can be supported by a given level of reserves and, in the absence of other actions, reduces the money stock and raises the cost of credit. Decreasing the ratios leaves depositories initially with excess reserves, which can induce an expansion of bank credit and deposit levels and a decline in interest rates; it also lowers the costs of bank funding by reducing the amount of non-interest-bearing assets that must be held in reserve.

However, because even small changes in reserve ratios can substantially affect required reserves, adjustments to reserve requirements are not well suited to the day-to-day implementation of monetary policy. Indeed, to avoid large, sudden effects on deposits and credit, changes in reserve ratios have, when implemented,

typically been at least partially offset by open market operations. Also, as reserve requirements are an important variable in banks' business calculations, frequent changes in them would unnecessarily complicate financial planning by these institutions. As a result, the Federal Reserve changes reserve requirements only infrequently and usually merely to reinforce or to supplement the effects of open market operations and discount policy on overall monetary and credit conditions. Changes in reserve ratios have also been used at times for their announcement effect—that is, to emphasize a particular direction of policy and to influence the public's perception of the thrust of monetary policy.

The Federal Reserve changes reserve requirements only infrequently.

The use of reserve requirements to supplement monetary policy was somewhat more prevalent in the 1960s and 1970s, when the Federal Reserve sought to influence the expansion of money and credit partly by manipulating bank funding costs. As financial innovation spawned new sources of bank funding, the Federal Reserve adapted reserve requirements to these new financial products. It also often changed requirements on spe-

cific bank liabilities that were most frequently used to fund new lending. As banks relied more heavily on the issuance of large-denomination time deposits, such as certificates of deposit, to fund their acquisitions of assets, the Federal Reserve periodically altered reserve requirements on these instruments and thereby affected the cost of their issuance and, hence, the supply of credit through banks. It sometimes supplemented its actions by placing a marginal reserve requirement on large time deposits—that is, an additional requirement applied only to each new increment of these deposits. Reserve requirements were also imposed on other, newly emerging liabilities that were the functional equivalents of deposits, such as Eurodollar borrowings. The imposition of requirements on these and other managed liabilities was especially useful in the late 1970s as the Federal Reserve sought to curb the expansion of money and credit and thereby reduce inflation.

More recently, the Federal Reserve has taken steps to reduce reserve requirements. In December 1990, the required reserve ratio on nonpersonal time deposits was pared from 3 percent to zero, and in April 1992 the 12 percent requirement on transaction deposits was trimmed to 10 percent. These actions were partly motivated by evidence suggesting that some lenders had adopted a

more cautious approach to extending credit, which was increasing the cost and restricting the availability of credit to some types of borrowers. By reducing funding costs and thus providing depositories with easier access to capital markets, the cuts in reserve requirements put banks in a better position to extend credit. The reduction for nonpersonal time deposits was aimed directly at spurring bank lending because these accounts are often used as a marginal source for funding. ■

The Federal Reserve in the International Sphere

The U.S. economy and the world economy are linked in many ways. Economic developments in this country have a major influence on production, employment, and prices beyond our borders; at the same time, developments abroad significantly affect our economy. The U.S. dollar, which is the currency most used in international transactions, constitutes more than half of other countries' official foreign exchange reserves. U.S. banks abroad and foreign banks in the United States are important actors in international financial markets.

THE ACTIVITIES OF THE FEDERAL RESERVE and the international economy influence each other. Thus, in deciding on the appropriate monetary policy for achieving basic economic goals, the Board of Governors and the Federal Open Market Committee consider the record of U.S. international transactions, movements in foreign exchange rates, and other international economic developments. And in the area of bank supervision and regulation, innovations in international banking require continual assessments of and modifications in the Federal Reserve's orientation, procedures, and regulations.

Not only do Federal Reserve policies shape and get shaped by international developments; the U.S. central bank also participates directly in international affairs. For example, the Federal Reserve undertakes foreign exchange transactions in cooperation with the U.S. Treasury. These transactions, and similar ones by foreign central banks involving dollars, may be facilitated by reciprocal currency (swap) arrangements that have been established between the Federal Reserve and the central banks of other countries. The Federal Reserve also works with other agencies of the U.S. government to conduct international financial policy, participates in various international organizations and forums, and is in almost continuous contact with other central banks on subjects of mutual concern.

INTERNATIONAL LINKAGES

The primary instruments of monetary policy—open market operations, the discount window, and reserve requirements—are employed essentially to attain basic economic objectives for the U.S. economy. But their use also influences, and is influenced by, international developments.

For example, U.S. monetary policy actions influence exchange rates. Thus, the dollar's foreign exchange value in terms of other currencies is one of the channels through which U.S. monetary policy affects the U.S. economy. If Federal Reserve actions raised U.S. interest rates, for instance, the foreign exchange value of the dollar generally would rise. An increase in the foreign exchange value of the dollar, in turn, would raise the foreign price of U.S. goods traded on world markets and lower the price of goods imported into the United



States. These developments could lower output and price levels in the U.S. economy. An increase in interest rates in a foreign country, in contrast, could raise worldwide demand for assets denominated in that country's currency and thereby reduce the dollar's value in terms of that currency. U.S. output and price levels would tend to increase—directions just opposite of when U.S. interest rates rise.

Therefore, in formulating monetary policy, the Board of Governors and the FOMC draw upon information about and analysis of international as well as U.S. domestic influences. Changes in public policies or in economic conditions abroad and movements in international variables that affect the U.S. economy, such as exchange rates, must be evaluated in assessing the stance of U.S. monetary policy.

In the 1980s, recognizing their growing economic interdependence, the United States and the other major industrial countries intensified their efforts to consult and cooperate on macroeconomic policies. At the 1986 Tokyo Economic Summit, they agreed upon formal procedures to improve the coordination of policies and the multilateral surveillance of their economic performance. The Federal Reserve works with the U.S. Treasury in coordinating international policy, particularly when, as has been the norm since the late 1970s, they intervene together in currency markets to influence the external value of the dollar.

Using the forum provided by the Bank for International Settlements (BIS), in Basle, Switzerland, the Federal Reserve works with representatives of the central banks of other countries on mutual concerns regarding monetary policy, international financial markets, banking supervision and regulation, and payments systems. (The Chairman of the Board of Governors also represents the U.S. central bank on the Board of Directors of the BIS.) Representatives of the Federal Reserve participate in the activities of the International Monetary Fund (IMF), discuss macroeconomic, financial market, and structural issues with representatives of other industrial countries at the Organisation for Economic Co-operation and Development, in Paris, and work with central bank officials of Western Hemisphere countries at meetings such as that of the Governors of Central Banks of the American Continent.

FOREIGN CURRENCY OPERATIONS

The Federal Reserve has conducted foreign currency operations—the buying and selling of dollars in exchange for foreign currency—for customers since the 1950s and for its own account since 1962. These operations are directed by the FOMC, acting in close cooperation with the U.S. Treasury, which has overall responsibility for U.S. international financial policy. The Manager of the System Open Market Account at the Federal Reserve Bank of New York acts as the agent for both the FOMC and the Treasury in carrying out foreign currency operations.

The purpose of Federal Reserve foreign currency operations has evolved in response to changes in the international monetary system. The most important of these changes was the transition in the 1970s from the Bretton Woods system of fixed exchange rates to a system of flexible exchange rates for the dollar in terms of other countries' currencies.¹ Under the latter system, the main aim of Federal Reserve foreign currency operations has been to counter disorderly conditions in exchange markets through the

1. The IMF and the International Bank for Reconstruction and Development (known informally as the World Bank) were created at an international monetary conference held in Bretton Woods, New Hampshire, in 1944. As part of the Bretton Woods arrangements, a system of fixed exchange rates was established.

purchase or sale of foreign currencies (called intervention operations), primarily in the New York market. During some episodes of downward pressure on the foreign exchange value of the dollar, the Federal Reserve has purchased dollars (sold foreign currency) and has thereby absorbed some of the selling pressure on the dollar. Similarly, the Federal Reserve may sell dollars (purchase foreign currency) to counter upward pressure on the dollar's foreign exchange value. The Federal Reserve Bank of New York also carries out transactions in the U.S. foreign exchange market as an agent for foreign monetary authorities.

Intervention operations involving dollars could affect the supply of reserves in the U.S. depository system. A purchase of foreign currency by the Federal Reserve with newly created dollars, for instance, would increase the supply of reserves. In practice, however, such operations are not allowed to alter the supply of monetary reserves available to U.S. depository institutions. That is, interventions are "sterilized" through open market operations so that they do not lead to a change in the market for domestic monetary reserves different from that which would have occurred in the absence of intervention.

For example, the Federal Reserve, perhaps in connection with German authorities, may want to counter downward pressure on the dollar's foreign exchange value in relation to the German mark. The Federal Reserve reduces its balances denominated in German marks (an asset on the Federal Reserve balance sheet) and sells

the marks for dollars on the open market, reducing the supply of dollar bank reserves. Unless an explicit decision has been made to lower the supply of bank reserves, the Federal Reserve uses the dollars it has acquired in the transaction to purchase a Treasury security and thus



*The Foreign Exchange Desk at the
Federal Reserve Bank of New York.*

restores the supply of dollar bank reserves to the former level. The net effect of such an intervention operation on the private sector is a reduction in the supply of dollar-denominated securities and an increase in the supply of mark-denominated assets. The German central bank, in turn, will sterilize the unwanted effects of the transaction, if any, on the level of mark-denominated bank reserves.



A dollar intervention initiated by a foreign central bank also leaves the supply of bank reserves in the United States unaffected, unless it changes the deposits that the central bank holds with the Federal Reserve. If, for example, the foreign central bank were to purchase dollars and place them in its account with the Federal Reserve, it would take these dollars from the U.S. banking system. However, the Domestic Trading Desk at the Federal Reserve Bank of New York would offset this withdrawal by buying a Treasury security to supply reserves. Most dollar sales by foreign central banks are implemented by drawing down holdings of dollar securities or by borrowing dollars in the market, and thus they do not need to be countered by open market operations to leave the supply of reserves unchanged.

Swap Network

An important feature of the foreign currency operations of the Federal Reserve and of foreign central banks over the past thirty years has been the reciprocal currency (swap) network, which consists of reciprocal short-term arrangements (comparable to repurchase and matched sale-purchase agreements in the domestic government securities market) among the Federal Reserve, other central banks, and the BIS. These arrangements, which have been used infrequently in recent years, give the Federal Reserve temporary access to the foreign currencies it needs for intervention operations to support the dollar and give the partner foreign central banks temporary access to the dollars they need to support their own currencies. Swap transactions involving dollars are implemented through the Federal Reserve Bank of New York, acting as an agent for the Federal Reserve System.

A swap transaction involves both a spot (immediate delivery) transaction, in which the Federal Reserve transfers dollars to another central bank in exchange for foreign currency, and a simul-

taneous forward (future delivery) transaction, in which the two central banks agree to reverse the transaction, typically three months in the future. The Federal Reserve may initiate a swap transaction (make a swap drawing) when it needs the foreign currency obtained in the spot half of the transaction to finance intervention sales of foreign currency in support of the dollar. To repay the drawings at maturity, the Federal Reserve re-acquires the foreign currency. Such acquisitions have usually been accomplished by purchasing foreign currency in the market, thereby reversing the original intervention in support of the dollar. When a foreign central bank initiates the swap drawing, it uses the dollars obtained in the spot half of the transaction to finance sales of dollars to support its own currency. Subsequently, it meets its obligation to deliver dollars to the Federal Reserve by re-acquiring dollars in the market. In these swap transactions, the foreign central bank pays interest on the dollar drawings, at the U.S. Treasury bill rate,

Table 4.1
Federal Reserve reciprocal currency arrangements, June 30, 1994
 Millions of dollars

<i>Institution</i>	<i>Amount of facility</i>
Austrian National Bank	250
National Bank of Belgium	1,000
Bank of Canada	2,000
National Bank of Denmark	250
Bank of England	3,000
Bank of France	2,000
German Bundesbank	6,000
Bank of Italy	3,000
Bank of Japan	5,000
Bank of Mexico	3,000
Netherlands Bank	500
Bank of Norway	250
Bank of Sweden	300
Swiss National Bank	4,000
<i>Bank for International Settlements</i>	
Dollars against Swiss francs	600
Dollars against other authorized European currencies	1,250
Total	32,400

and the Federal Reserve pays a comparable rate on the foreign currency counterpart.

The Federal Reserve established its first swap arrangement with the Bank of France in March 1962. It subsequently made similar arrangements with other central banks, and the sizes of the facilities have increased from time to time. At the end of June 1994, the Federal Reserve had swap arrangements with fourteen foreign central banks and the BIS totaling \$32.4 billion (table 4.1). Since the establishment of the network, eleven foreign central banks and the BIS have made swap drawings. Foreign drawings were more frequent and on a larger scale in the 1960s than they have been since. The Federal Reserve has, at various times, made swap drawings on nine foreign central banks and the BIS.

Exchange Market Intervention

The nature and scope of exchange market operations by the Federal Reserve and the use of the swap network have changed in response to changes in the character of the international monetary system. Under the Bretton Woods system of fixed exchange rates, foreign authorities were responsible for intervening in exchange markets to maintain their countries' exchange rates within 1 percent of their currencies' parities with the U.S. dollar; direct exchange market intervention by U.S. authorities was extremely limited because the United States stood ready to buy and sell dollars against gold at \$35 per ounce. After the United States suspended the gold convertibility of the dollar in 1971, a regime of managed flexible exchange rates emerged; in 1973, under that regime, the United States began to intervene in exchange markets on a more significant scale. Federal Reserve swap drawings financed much of this intervention. In 1978, the regime of flexible exchange rates was codified in an amendment to the IMF's Articles of Agreement.

In the early 1980s, the United States curtailed its official exchange market operations, although it remained ready to enter the market when needed to counter disorderly conditions. In 1985, particularly after September, when representatives of the five major industrial countries reached the so-called Plaza Accord on exchange rates, the United States began to use exchange market intervention more frequently as a policy instrument. During the second

half of the 1980s, U.S. intervention to restrain the rise in the dollar's value on foreign exchange markets (that is, official U.S. purchases of assets denominated in foreign currencies) was sufficiently heavy that the stock of foreign exchange reserves acquired enabled the Federal Reserve to finance purchases of dollars, when it needed to support the dollar's external value, without drawing on its swap lines with other central banks.

Other U.S. Foreign Currency Resources

Since the late 1970s, the U.S. Treasury has financed about half of total U.S. support for the dollar, and the Federal Reserve has financed the rest. The Treasury acquired foreign currency resources partly through its own swap arrangement with the German central bank but mainly through drawings on the International Monetary Fund (IMF), sales of special drawing rights, and issuance of securities denominated in foreign currencies (these securities have since been retired).² Moreover, over the post-Bretton Woods era, Federal Reserve and Treasury interventions have on balance been net purchases of foreign currencies against dollars; these net purchases, along with cumulated earnings on the assets, have tended to build up the stock of U.S. official foreign exchange reserves.

At the end of June 1994, the United States held foreign currency reserves valued at \$42.8 billion. Of this amount, the Federal Reserve held foreign currency assets of \$22.5 billion, and the Exchange Stabilization Fund of the Treasury held the rest.

INTERNATIONAL BANKING

The Federal Reserve is interested in the international activities of banks not only because of its role as a bank supervisor but also because such activities are often close substitutes for domestic banking activities and need to be monitored carefully to help interpret U.S. monetary and credit conditions. Moreover, international banking institutions are important vehicles for capital flows into and out of the United States.

2. Special drawing rights (SDRs) are unconditional credit lines created by the IMF and allocated on occasion to the members of the IMF to supplement their international reserve assets.

The location of international banking depends on such factors as the business needs of customers, the scope of operations permitted by a country's legal and regulatory framework, and tax considerations. The international activities of U.S.-chartered banks include lending to and accepting deposits from foreign customers at the banks' U.S. offices and engaging in other financial transactions with foreign counterparts. However, the bulk of the international business of U.S.-chartered banks takes place at their branch offices located abroad and at their foreign-incorporated subsidiaries, usually wholly owned. Much of the activity of foreign branches and subsidiaries of U.S. banks has been Euro-currency business—that is, taking deposits and lending in currencies other than that of the country in which the banking office is located. U.S. banks are also increasingly offering a range of sophisticated financial products to residents of other countries and to U.S. firms abroad.

The international role of U.S. banks has a counterpart in foreign bank operations in the United States. U.S. offices of foreign banks actively participate as both borrowers and investors in U.S. domestic money markets and are active in the market for loans to U.S. businesses. (See chapter 5 for a discussion of the Federal Reserve's supervision and regulation of the international activities of U.S. banks and the U.S. activities of foreign banks.)

International banking by both U.S.-based and foreign banks facilitates the holding of Eurodollar deposits—dollar deposits in banking offices outside the United States—by nonbank U.S. entities. Similarly, Eurodollar loans—dollar loans from banking offices outside the United States—can be an important source of credit for U.S. companies (banks and nonbanks). Because they are close substitutes for deposits at domestic banks, Eurodollar deposits of nonbank U.S. entities at foreign branches of U.S. banks are included in the U.S. monetary aggregate M3; Eurodollar term deposits of nonbank U.S. entities at all other banking offices in the United Kingdom and Canada are also included in M3. Overnight Eurodollar deposits of nonbank U.S. entities at foreign branches of U.S. banks are included in M2. (See box in chapter 2 for the U.S. monetary aggregates.) ■

Supervision and Regulation

The Federal Reserve has supervisory and regulatory authority over a wide range of financial institutions and activities. It works with other federal and state financial authorities to ensure safety and soundness in the operation of financial institutions, stability in the financial markets, and fair and equitable treatment of consumers in their financial transactions.

THE FEDERAL RESERVE HAS PRIMARY RESPONSIBILITY for supervising and regulating several types of banking organizations:

- All bank holding companies, their nonbank subsidiaries, and their foreign subsidiaries
- State-chartered banks that are members of the Federal Reserve System (state member banks) and their foreign branches and subsidiaries
- Edge Act and agreement corporations, through which U.S. banking organizations conduct operations abroad.

It also shares important responsibilities with state supervisors and with other federal supervisors, including overseeing both the operations of foreign banking organizations in the United States and the establishment, examination, and termination of branches, agencies, commercial lending subsidiaries, and representative offices of foreign banks in the United States.

Other supervisory and regulatory responsibilities of the Federal Reserve include

- Regulating margin requirements on securities transactions
- Implementing certain statutes that protect consumers in credit and deposit transactions
- Monitoring compliance with the money-laundering provisions contained in the Bank Secrecy Act
- Regulating transactions between banking affiliates.

The hands-on experience of supervision and regulation provides the Federal Reserve with a base of essential knowledge for monetary policy deliberations. Further, its supervisory and regulatory roles enable the Federal Reserve to forestall financial crises or to manage crises once they occur. In the past decade, the experience and knowledge of examiners and supervisory staff proved instrumental in the Federal Reserve's responsiveness to the Mexican debt crisis of 1982, the collapse in 1985 of privately insured thrift institutions in Ohio and Maryland, the stock market crash of 1987, and the 1990 failure of the Drexel-Burnham investment firm.

SUPERVISORY FUNCTIONS

Although the terms *bank supervision* and *bank regulation* are often used interchangeably, they actually refer to distinct, but complementary, activities. Bank supervision involves the monitoring, inspecting, and examining of banking organizations to assess their condition and their compliance with relevant laws and regulations. When an institution is found to be in noncompliance or to have other problems, the Federal Reserve may use its supervisory authority to take formal or informal action to have the institution correct the problems. Bank regulation entails making and issuing specific regulations and guidelines governing the structure and conduct of banking, under the authority of legislation.

The Federal Reserve shares supervisory and regulatory responsibilities with the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), and the Office of Thrift Supervision (OTS) at the federal level, with the banking agencies of the various states, and with foreign banking authorities for the international operations of U.S. banks and the operations of foreign banks in the United States (see table 5.1). This structure has evolved partly out of the complexity of the U.S. financial system, with its many kinds of depository institutions and numerous chartering authorities. It has also resulted from a wide variety of federal and state laws and regulations designed to remedy problems that the U.S. commercial banking system has faced over its history.

In recent years, several factors—including rapidly changing conditions in the banking industry, problems within the savings and loan and banking industries, and legislative requirements—have

Table 5.1
**Federal supervisor and regulator of corporate components
of banking organizations in the United States**

<i>Component</i>	<i>Supervisor and Regulator</i>
Bank holding companies	FR
National banks	OCC
State banks	
Members	FR
Nonmembers	FDIC
Cooperative banks	FDIC/FR
Industrial banks (if insured) ¹	FDIC
Section 20 affiliates	SEC/FR
Thrift holding companies	OTS
Savings banks	OTS/FDIC/FR
Savings and loan associations	OTS
Edge Act and agreement corporations	FR
Foreign banks ²	
Branches and agencies ³	
State licensed	FR/FDIC
Federally licensed	OCC/FR/FDIC
Representative offices	FR

Note. FR = Federal Reserve; OCC = Office of the Comptroller of the Currency; FDIC = Federal Deposit Insurance Corporation; SEC = Securities and Exchange Commission; OTS = Office of Thrift Supervision

1. Uninsured industrial banks are supervised by the states.

2. Applies to direct operations in the United States. Foreign banks may also have indirect operations in the United States through their ownership of U.S. banking organizations.

3. The FDIC has responsibility for branches that are insured.

necessitated the increased coordination of regulatory efforts. An important element in such coordination is the Federal Financial Institutions Examination Council (FFIEC), established by statute in 1978, consisting of the Chairpersons of the FDIC and the National Credit Union Administration, the Comptroller of the Currency, the Director of the OTS, and a Governor of the Federal Reserve Board appointed by the Board Chairman. The FFIEC's purposes are to prescribe uniform federal principles and stan-

dards for the examination of depository institutions, to promote coordination of bank supervision among the federal agencies that regulate financial institutions, and to encourage better coordination of federal and state regulatory activities. Through the FFIEC, state and federal regulatory agencies may exchange views on important regulatory issues. Among other things, the FFIEC has developed uniform financial reporting forms for use by all federal and state banking regulators.

Domestic Operations of U.S. Banking Organizations

The Federal Reserve's off-site supervision of banking institutions involves the periodic review of financial and other information about banks and bank holding companies. Information that the

Federal Reserve reviews includes reports of recent examinations and inspections, information published in the financial press and elsewhere, and, most important, the standard financial regulatory reports that are filed by institutions. The reports for banks are referred to as the Consolidated Reports of Condition and Income (Call Reports) and those for bank holding companies, as the Consolidated Financial Statements for Bank Holding Companies (FR Y-9 Series). The number and the

type of report forms that must be filed depend on the size of an institution, the scope of its operations, and the types of financial entities that it includes. Therefore, the report forms filed by larger institutions that engage in a wider range of activities are generally more numerous and more detailed than those filed by smaller organizations.

Supervision includes off-site monitoring of financial reports and on-site examination visits.

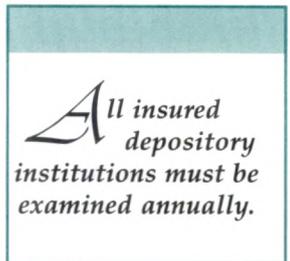
In its ongoing, off-site supervision of banks and bank holding companies, the Federal Reserve uses automated screening systems to identify organizations that have poor or deteriorating financial profiles and to help detect adverse trends developing in the banking industry. The System to Estimate Examinations Ratings (SEER) statistically estimates an institution's supervisory rating based on information that institutions provide in their quarterly Call Report filings. When SEER and other supervisory tools identify an organization that has problems, a plan for correcting the problems—which may include sending examiners to the institution—is developed.

In on-site examinations of state member banks and inspections of bank holding companies and their nonbank subsidiaries, the supervisory staffs of the Federal Reserve Banks generally

- Evaluate the soundness of the institution's assets and the effectiveness of its internal operations, policies, and management
- Analyze key financial factors such as the institution's capital, earnings, liquidity, and sensitivity to interest rate risk
- Assess the institution's exposure to off-balance-sheet risks
- Check for compliance with banking laws and regulations
- Determine the institution's overall soundness and solvency.

The Federal Reserve also evaluates transactions between a bank and its affiliates to determine the effect of the transactions on the institution's condition and to ascertain whether the transactions are consistent with sections 23A and 23B of the Federal Reserve Act. Section 23A prohibits, among other things, a bank from purchasing the low-quality assets of an affiliate and limits asset purchases, extensions of credit, and other enumerated transactions by a single bank from a single affiliate to 10 percent of the bank's capital, or from all affiliates combined to 20 percent of its surplus. Moreover, section 23B requires that all transactions with affiliates be on terms substantially the same as, or at least as favorable as, those prevailing at the time with comparable non-affiliated companies. The Federal Reserve is the only banking agency that has the authority to exempt any bank from these requirements.

The Federal Reserve Board has consistently emphasized the importance of its on-site examinations and inspections in the supervisory process. Policies regarding the frequency of examinations and inspections are reviewed regularly to address concerns of safety and soundness as well as of regulatory burden on institutions under Federal Reserve supervision. In response to banking and other financial problems that developed in the 1980s, the Board in 1985 adopted a policy requiring the Reserve Banks to examine every state member bank and inspect all large bank holding companies at least once every year. Subsequently, in 1991, Congress passed the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA), which imposed the legal requirement that all insured depository institutions be examined once every twelve months. (Certain small banks may be examined once every eighteen months.) The Board's policy is that large banks are to be ex-



*All insured
depository
institutions must be
examined annually.*

amined by a Reserve Bank or jointly by a Reserve Bank and the responsible state banking agency; for smaller institutions, the Reserve Banks may alternate years with the responsible state banking agency. Board policy also requires that problem banks be examined more frequently by Reserve Banks.

The Board's policy regarding on-site inspections of bank holding companies also requires that companies that are large, have significant credit-extending nonbank subsidiaries or debt outstanding to the general public, or have severe problems be inspected annually. The remaining companies must be inspected at least once every three years, except for the smallest, least-complex bank holding companies, which may be inspected on a sample basis.

The Federal Reserve also conducts special on-site examinations of banking organizations' securities trading activities. Generally, securities trading activities of banking organizations are conducted in separately incorporated, nonbank entities directly or indirectly owned by bank holding companies. Such activities are governed by section 20 of the Banking Act of 1933 (the Glass-Steagall Act), which prohibits banks that are members of the Federal Reserve System from affiliating with entities that are "engaged principally" in underwriting (that is, purchasing for resale) or otherwise dealing in securities. In 1987, the Board ruled that a company would not be engaged principally in these activities if no more than 5 percent of its revenues were derived from underwriting or dealing in certain types of securities that banks are not eligible to trade (referred to as bank-ineligible securities). The subsidiaries in which such activities are conducted are commonly referred to as section 20 subsidiaries. As a result of the 1987 ruling, the Board approved proposals by banking organizations to underwrite and deal in specific types of securities (commercial paper, municipal revenue bonds, conventional residential mortgage-related securities, and securitized consumer loans) on a limited basis and in a manner consistent with existing banking statutes. Before the ruling, banking organizations were restricted to underwriting and dealing in bank-eligible securities, such as government securities, general municipal obligations, and money market instruments. In 1989, the Board raised the percentage of permissible trading in bank-ineligible securities to 10 percent of revenues. It also expanded the range of permitted activities and approved applications by



five banking organizations to underwrite and deal in any debt or equity security (except mutual funds), subject to several conditions, including reviews of the organization's management and operations. By year-end 1993, thirty-one foreign and domestic banking organizations had established section 20 subsidiaries.

The Federal Reserve conducts on-site examinations of other bank and nonbank activities: consumer affairs (see chapter 6 for a discussion of this area); trust activities; securities transfer agency activities; activities by government and municipal securities dealers; and electronic data processing.

If the Federal Reserve determines that a bank or bank holding company has problems that affect the institution's safety and soundness or is out of compliance with laws and regulations, it may take a supervisory action to ensure that the organization undertakes corrective measures. Typically, such findings are communicated to the management and directors of a banking organization in a written report. The management and directors are then requested to address all identified problems voluntarily and to take measures to ensure that the problems are corrected and will not recur. Most problems are resolved promptly after they are brought to the attention of an institution's management and directors. In some situations, however, the Federal Reserve may need to take an informal supervisory action, by requesting that an institution adopt a broad resolution or agree to the provisions of a memorandum of understanding to address the problem.

If necessary, the Federal Reserve may take formal enforcement actions to compel the management and directors of a troubled banking organization or persons associated with it to address the organization's problems. For example, if an institution has significant deficiencies or fails to comply with an informal action, the Federal Reserve may enter into a written agreement with the troubled institution, or may issue a cease and desist order against the institution or against an individual associated with the institution, such as an officer or director. The Federal Reserve may also assess a fine, or remove an officer or director from office and permanently bar him or her from the banking industry, or both. All written agreements issued after November 1990 and all cease and desist orders, civil money penalty orders, and removal and prohibition orders issued after August 1989 are available to the public.

International Operations of U.S. Banking Organizations

The Federal Reserve's supervision and regulation of the international operations of banking organizations that are members of the Federal Reserve System entail four principal statutory responsibilities:

- Authorizing the establishment of foreign branches of member banks and regulating the scope of their activities
- Chartering and regulating the activities of Edge Act and agreement corporations
- Authorizing overseas investments by member banks, Edge Act and agreement corporations, and bank holding companies, and regulating the activities of foreign firms acquired by such investments
- Establishing supervisory policy and practices with respect to the foreign lending of member banks.

Under federal law, U.S. banks may conduct a wider range of activities abroad than they may pursue in this country. The Federal Reserve Board has broad discretionary powers to regulate the overseas activities of member banks and bank holding companies so that, in financing U.S. trade and investments overseas, U.S. banks can be fully competitive with institutions of the host country. In addition, through Edge Act and agreement corporations, banks may conduct deposit and loan business in U.S. markets outside their home states, provided that the operations of these corporations are related to international transactions.

The foreign activities of U.S. banking organizations are also supervised by the Federal Reserve.

The International Lending Supervision Act of 1983 directed the Federal Reserve and other U.S. banking agencies to consult with the supervisory authorities of other countries to adopt effective and consistent supervisory policies and practices with respect to international lending. It also directed the banking agencies to strengthen the international lending procedures of U.S. banks by, among other things, requiring an institution either to write off assets or to maintain special reserves when potential or actual impediments to the international transfer of funds make it likely that foreign borrowers will be unable to make timely payments on their debts.

U.S. Activities of Foreign Banking Organizations

Although foreign banks have been operating in the United States for more than a century, before 1978 the U.S. branches and agencies of these banks were not subject to supervision or regulation by any federal banking agency. When Congress enacted the International Banking Act of 1978 (IBA), it created a federal regulatory structure for the U.S. branches and agencies of foreign banks. The IBA established a policy of "national treatment" for foreign banks operating in the United States to promote competitive equality between them and domestic institutions. This policy gives foreign banking organizations operating in the United States the same powers, and subjects them to the same restrictions and obligations, that apply to the domestic operations of U.S. banking organizations.

Under the IBA, primary responsibility for the supervision and regulation of branches and agencies remained with the state or federal licensing authorities. The Federal Reserve was assigned residual authority to ensure national oversight of the operations of foreign banks. Congress gave the Federal Reserve examination authority over state-licensed U.S. branches and agencies and state-chartered banking subsidiaries of foreign banks but instructed it to rely, to the extent possible, on the examinations conducted by the licensing authorities.

The Federal Reserve may not approve an application by a foreign bank to establish a branch, agency, or commercial lending company unless it determines that (1) the foreign bank and any parent foreign bank engage directly in the business of banking outside the United States and are subject to comprehensive supervision or regulation on a consolidated basis by their home country supervisors and (2) the foreign bank has furnished to the Federal Reserve the information that the Federal Reserve requires in order to assess the application adequately. The Federal Reserve may take into account other factors such as (1) whether the home country supervisor of the foreign bank has consented to the proposed establishment of the U.S. office, (2) the financial and managerial resources of the foreign bank and the condition of any U.S. office of the foreign bank, (3) whether the foreign bank's home country supervisor shares material information regarding the op-



*Foreign banks
operating in
the United States
must adhere to
U.S. laws.*

erations of the foreign bank with other supervisory authorities, (4) whether the foreign bank and its U.S. affiliates are in compliance with applicable U.S. law, and (5) whether the foreign bank has provided the Federal Reserve with adequate assurances that information will be made available on the operations or activities of the foreign bank and any of its affiliates that the Federal Reserve deems necessary to determine and enforce compliance with applicable federal banking statutes. In approving the establishment of a representative office by a foreign bank, the Federal Reserve is required to take these standards into account to the extent deemed appropriate.

The Foreign Bank Supervision Enhancement Act of 1991 (FBSEA) increased the responsibility and the authority of the Federal Reserve to examine regularly the U.S. operations of foreign banks. Under the FBSEA, all branches and agencies of foreign banks must be examined on-site at least once every twelve months. These examinations are coordinated with state and other federal banking agencies, as appropriate. Supervisory actions resulting from such examinations may be taken by the Federal Reserve acting alone or with other agencies.

Under the authority of the Bank Holding Company Act and the IBA, the Federal Reserve is also responsible for approving, reviewing, and monitoring the U.S. nonbanking activities of foreign banking organizations. In addition, under an FBSEA amendment to the Bank Holding Company Act, a foreign bank must obtain Federal Reserve approval to acquire more than 5 percent of the shares of a U.S. bank or bank holding company.

REGULATORY FUNCTIONS

As a bank regulator, the Federal Reserve establishes standards designed to ensure the safe and sound operation of financial institutions. These standards may take the form of regulations, rules, policy guidelines, or supervisory interpretations and may be established under specific provisions of a law or under more general legal authority. Regulatory standards may be either restrictive (limiting the scope of a banking organization's activities) or permissive (authorizing banking organizations to engage in certain activities). (A complete list of Federal Reserve regulations is given in appendix B.)

In response to the financial difficulties that the banking industry faced in the late 1980s, Congress enacted several laws to improve the condition of individual institutions and of the overall banking industry, including the Competitive Equality Banking Act of 1987; the Financial Institutions Reform, Recovery, and Enforcement Act of 1989; and the Federal Deposit Insurance Corporation Improvement Act of 1991. Because of the savings and loan crisis and a general decline in the level of bank capital during the same period, efforts to regulate the banking industry focused heavily on defining the level of capital that is sufficient to enable an institution to absorb reasonably likely losses. In 1989, the federal banking regulators adopted a common standard for measuring capital adequacy that is based on the riskiness of an institution's investments. This common standard, in turn, was based on the 1988 agreement International Convergence of Capital Measurement and Capital Standards (commonly known as the Basle Accord) developed by the international Basle Committee on Banking Regulations and Supervisory Practices.

The risk-based capital standards require institutions that assume greater risk to hold higher levels of capital. Moreover, the risk-based capital framework takes into account risks associated with activities that are not included on a bank's balance sheet, such as the risks arising from commitments to make loans. Because they have been accepted by the bank supervisory authorities of most of the countries with major international banking centers, the risk-based capital standards promote safety and soundness and reduce competitive inequities among banking organizations operating within an increasingly global market.

Acquisitions and Mergers

Under the authority assigned to the Federal Reserve by the Bank Holding Company Act of 1956, as amended, the Bank Merger Act of 1960, and the Change in Bank Control Act of 1978, the Federal Reserve Board maintains broad supervisory authority over the structure of the banking system in the United States.

The Bank Holding Company Act of 1956 assigned primary responsibility for supervising and regulating the activities of bank holding companies to the Federal Reserve. This act was designed to achieve two basic objectives. First, by controlling the expansion

of bank holding companies, the act sought to avoid the creation of a monopoly or the restraint of trade in the banking industry. Second, it sought to keep banking and commerce separate by restricting the activities of bank holding companies to banking and closely related endeavors.

Bank Acquisitions

Under the Bank Holding Company Act, a firm that seeks to become a bank holding company must first obtain approval from the Federal Reserve. The act defines a bank holding company as any institution that directly or indirectly owns, controls, or has the power to vote 25 percent or more of any class of the voting shares of a bank; controls in any manner the election of a majority of the directors or trustees of a bank; or exercises a controlling influence over the management or policies of a bank. An existing bank holding company must obtain the approval of the Federal

Reserve Board before acquiring more than 5 percent of the shares of an additional bank. All bank holding companies must file certain reports with the Federal Reserve System.

*Acquisitions
by bank holding
companies must be
approved by the
Federal Reserve.*

The Bank Holding Company Act limits the interstate operations of bank holding companies by preventing them from acquiring a bank in a second state unless the second state specifically au-

thorizes the acquisition by statute. In recent years, most states have authorized such acquisitions, generally on a reciprocal basis with other states.

In considering applications to acquire a bank or a bank holding company, the Federal Reserve, carrying out legislative mandates, takes into account the likely effects of the acquisition on competition, the convenience and needs of the community to be served, and the financial and managerial resources and future prospects of the bank holding company and its banking subsidiaries.

Nonbanking Activities and Acquisitions

Through the Bank Holding Company Act, Congress prevented bank holding companies from engaging in nonbanking activities or from acquiring nonbanking companies, with certain exceptions. The exceptions allow holding companies to undertake certain activities that the Federal Reserve determines to be so closely related to banking or to managing or controlling banks as to be a

“proper incident” to banking. In making this determination, the Federal Reserve considers whether the exception to the prohibition can reasonably be expected to produce public benefits, such as greater convenience or gains in efficiency, that outweigh possible adverse effects, such as conflicts of interest or decreased competition.

By late 1993, the Federal Reserve had approved more than two dozen activities for bank holding companies that are closely related to banking, including making, acquiring, or servicing loans or other extensions of credit; supplying data processing and transmission services; providing investment advice; and engaging in securities brokerage activities.

Community consequences are evaluated when applications for acquisitions and mergers are considered.

Bank Mergers

Another responsibility of the Federal Reserve is to act on proposed bank mergers when the resulting institution is a state member bank. During the 1950s, the number of bank mergers, several of which involved large banks in the same metropolitan area, rose sharply. Fearing that a continuation of this trend could seriously impair competition in the banking industry and lead to an excessive concentration of financial power, Congress in 1960 passed the Bank Merger Act.

This act requires that all proposed bank mergers between insured banks receive prior approval from the agency under whose jurisdiction the surviving bank will fall. It also requires that the responsible agency request reports from the other banking agencies addressing applicable competitive factors and from the Department of Justice to ensure that all merger applications are evaluated in a uniform manner.



The Bank Merger Act sets forth the factors to be considered in evaluating merger applications. These factors include the financial and managerial resources and the prospects of the existing and proposed institutions, and the convenience and needs of the community to be served. The Federal Reserve may not approve any merger that could substantially lessen competition or tend to create a monopoly unless it finds that the anticompetitive effects of the transaction are outweighed by the transaction’s probable beneficial effects regarding the convenience and needs of the community to be served.

Other Changes in Bank Control

The Change in Bank Control Act of 1978 authorizes the federal bank regulatory agencies to deny proposals from a person acting directly or indirectly, or in concert with other persons, to acquire control of an insured bank or a bank holding company. The Federal Reserve is responsible for changes in the control of bank holding companies and state member banks, and the FDIC and the OCC are responsible for such changes in the control of insured state nonmember and national banks respectively. In considering a proposal under the act, the Federal Reserve must review factors such as the financial condition, competence, experience, and integrity of the acquiring person or group of persons; the effect of the transaction on competition; and the adequacy of the information provided by the party proposing the change.

Other Regulatory Responsibilities

The Federal Reserve is also responsible for enforcing various laws and regulations that are related to fair and equitable treatment in financial transactions (see chapter 6), to margin requirements in securities and futures markets, and to recordkeeping and reporting by depository institutions.

Securities Regulation

The Securities Exchange Act of 1934 requires the Federal Reserve to regulate the margin requirements in securities markets (that is, requirements regarding purchase of securities on credit). Such regulation was established in an effort to reduce price volatility caused by speculation, to protect unsophisticated investors, and to diminish the amount of credit used for speculation. However, with the contemporary understanding of the dynamics of financial markets, the focus of margin requirements has become mainly prudential, that is, to protect the soundness of the markets. In fulfilling its responsibility under the act, the Federal Reserve limits the amount of credit that may be provided by securities brokers and dealers (Regulation T), by banks (Regulation U), and by other lenders (Regulation G). These regulations generally apply to credit-financed purchases of securities traded on securities exchanges and certain securities traded over the counter when the credit is collateralized by such securities. In addition, Regulation X prohibits borrowers who are subject to U.S. laws from ob-

taining such credit overseas on terms more favorable than could be obtained from a domestic lender.

In general, compliance with the margin regulations is enforced by several federal regulatory agencies. In the case of banks, the federal agencies regulating financial institutions check for Regulation U compliance during examinations. Compliance with Regulation T is verified during examinations of broker-dealers by the securities industry's self-regulatory organizations under the general oversight of the Securities and Exchange Commission. Compliance with Regulation G is checked by the National Credit Union Administration, the Farm Credit Administration, the OTS, or the Federal Reserve.

Futures Trading Practices Act

In 1992, section 501 of the Futures Trading Practices Act amended the Commodity Exchange Act to require that any rule establishing or changing the margin for a stock index futures contract or for an option on such a futures contract be filed with the Federal Reserve. The purpose of this requirement is to foster the integrity of the contract markets and to limit systemic risk that might result from a disturbance in the stock index futures market spilling over to other markets. Consistent with the provisions of the act, the Federal Reserve has delegated its authority with regard to such activities to the Commodity Futures Trading Commission.

Bank Secrecy Act

The Bank Secrecy Act, enacted in 1970, requires financial institutions doing business in the United States to report large currency transactions and to retain certain records. It also prohibits the use of foreign bank accounts to launder illicit funds or to avoid U.S. taxes and statutory restrictions. The Department of the Treasury maintains primary responsibility for issuance of regulations implementing this statute and for enforcement. However, the Treasury Department has delegated responsibility for monitoring the compliance of banks to the federal financial regulatory agencies. Therefore, during examinations of state member banks and of Edge Act and agreement corporations, Federal Reserve examiners verify an institution's compliance with the recordkeeping and reporting requirements of the act and with related regulations. ■

Consumer and Community Affairs

Since the late 1960s, the number of federal laws intended to protect consumers in credit and other financial transactions has been growing. Congress has assigned the Federal Reserve the duty of implementing these laws to ensure that consumers receive comprehensive information and fair treatment.

AMONG THE FEDERAL RESERVE'S RESPONSIBILITIES
in this area are

- Writing and interpreting regulations to carry out many of the major consumer-protection laws
- Reviewing bank compliance with the regulations
- Investigating complaints about compliance from the public
- Addressing issues of state and federal jurisdiction
- Testifying before Congress on consumer protection issues
- Directing a community affairs program.

In its efforts, the Federal Reserve is advised by a Consumer Advisory Council, whose members represent the interests of consumers, community groups, and creditors nationwide. Meetings of the council, which take place three times a year at the Federal Reserve Board in Washington, D.C., are open to the public.

CONSUMER PROTECTION

Virtually all financial transactions involving consumers are covered by the consumer-protection laws. These include transactions involving charge and credit cards from financial institutions and retail establishments, automated teller machines, deposit accounts, automobile leases, and mortgages.

Writing and Interpreting Regulations

The Federal Reserve writes regulations to implement these laws, which cover not only banks but also certain businesses, including finance companies, mortgage brokers, retailers, and automobile dealers. Most aspects of financial transactions are governed by regulations written by staff members at the Federal Reserve Board. For example, Congress passed the Truth in Lending Act to ensure that consumers had adequate information about credit. The Board implemented that law by writing Regulation Z, which requires that banks and other creditors provide detailed information about mortgages, car loans, credit and charge cards, and other lending products. The Board also revises and updates its regulations to address new products, such as home equity lines of credit, adjustable-rate mortgages, and so forth; to implement legislative changes to existing laws; or to address problems encountered by consumers.

Enforcing Consumer-Protection Laws

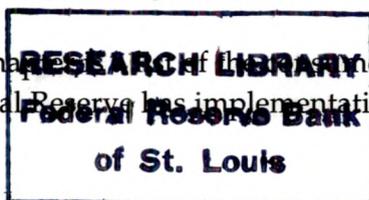
The Federal Reserve has a comprehensive program to examine banks to ensure that they comply with the consumer-protection laws. Its enforcement responsibilities generally extend only to state-chartered banks that are members of the Federal Reserve System. Other federal regulators are responsible for examining bank and thrift institutions under their jurisdictions and for taking enforcement action.



Each Reserve Bank has on its staff specially trained examiners who regularly evaluate the performance of banks in its District. Most banks are evaluated every eighteen months. Poorly rated banks are examined more frequently, and highly rated banks are examined every twenty-four months.

The examiners review the bank's policies and procedures and consumer files and other financial documents, and they verify that disclosures are given in a timely and accurate fashion and that the bank has dedicated enough resources to ensure compliance.

At the end of this chapter, if the consumer protection laws for which the Federal Reserve has implementation and enforce-



ment responsibility, the dates that the laws were enacted, and the highlights of the laws' provisions.

CONSUMER COMPLAINT PROGRAM

The Federal Reserve operates a Systemwide program to respond to inquiries and complaints from the public about consumer protection issues involving the policies and practices of financial institutions. It investigates complaints involving state member banks and refers complaints involving other institutions to the appropriate regulatory agencies.

The Federal Reserve Board maintains information on consumer inquiries and complaints in a database. It regularly reviews the data to identify potential problems at individual financial institutions and, as required by the Federal Trade Commission Improvement Act, to uncover potentially unfair or deceptive practices within the banking industry.

COMMUNITY AFFAIRS

In accordance with the Community Reinvestment Act of 1977 (CRA), the Federal Reserve encourages banks to work with community organizations to promote local economic development. In the examination process, the Federal Reserve reviews a bank's efforts to meet the credit needs of its entire community, including low- and moderate-income neighborhoods; for example, it looks at the extent to which a bank has programs that contribute to the building of affordable housing and to other aspects of community development. Banks are rated separately for compliance with the CRA, and the Federal Reserve takes an institution's performance under the CRA into account when deciding whether to approve an application for acquisition or merger or for formation of a bank holding company. The public may protest the approval of an application on the basis of the institution's record in community reinvestment.

Each Reserve Bank has on its staff a community affairs officer who is familiar with the credit needs in the communities served by the institutions in the Bank's District. The officer's responsibilities include fostering communication among banking institu-



tions, government agencies, and community groups. Through newsletters and other publications, seminars, workshops, and conferences, the Federal Reserve provides information to banks and bank holding companies about economic initiatives in the private sector, community development finance, public-private partnerships, and federal and state development programs. Staff members also work directly with individual bankers and community development representatives to promote community lending.

Consumer-Protection Laws

- **Community Reinvestment Act of 1977**
Encourages financial institutions to help meet the credit needs of their communities, particularly low- and moderate-income neighborhoods.
- **Consumer Leasing Act of 1976**
Requires that institutions disclose the cost and terms of consumer leases (such as those on automobiles).
- **Electronic Fund Transfer Act (1978)**
Establishes rules concerning a consumer's liability for unauthorized use of a debit card and the unsolicited issuance of debit cards by financial institutions. Covers transactions conducted at automated teller machines, at point-of-sale terminals in stores, and through telephone bill-payment plans and preauthorized transfers to and from a customer's account, such as direct deposit of salary or social security payments.
- **Equal Credit Opportunity Act (1974)**
Prohibits discrimination in credit transactions on several bases, including sex, marital status, age, race, religion, color, national origin, the receipt of public assistance funds, or the exercise of any right under the Consumer Credit Protection Act. Requires creditors to grant credit to qualified individuals without requiring cosignature by spouses, to inform unsuccessful applicants in writing of the reasons credit was denied, and to allow married individuals to have credit histories on jointly held accounts maintained in the names of both spouses.

- **Expedited Funds Availability Act (1987)**
Specifies when depository institutions must make consumers' deposited funds available to them; requires institutions to disclose to customers their policies on funds availability.
- **Fair Credit and Charge Card Disclosure Act of 1988**
Requires that applications for credit cards that are sent through the mail, solicited by telephone, or made available to the public (such as at counters in retail stores or through catalogs) contain information about key terms of the account.
- **Fair Credit Billing Act (1974)**
Specifies how creditors must respond to billing complaints from consumers; imposes requirements to ensure that creditors handle accounts fairly and promptly. Applies primarily to revolving and credit card accounts (for example, store card and bank card accounts).
- **Fair Credit Reporting Act (1970)**
Protects consumers against inaccurate or misleading information in credit files maintained by credit-reporting agencies; requires credit-reporting agencies to allow credit applicants to correct erroneous reports.
- **Fair Debt Collection Practices Act (1977)**
Prohibits abusive debt collection practices; applies to banks that function as debt collectors for other entities.
- **Fair Housing Act of 1968**
Prohibits discrimination in the extension of housing credit on the basis of race, color, religion, national origin, sex, handicap, or family status.
- **Federal Trade Commission Improvement Act of 1980**
Authorizes the Federal Reserve to identify unfair or deceptive acts or practices by banks and to issue regulations to prohibit them. (Using this authority, the Federal Reserve has adopted rules that restrict certain practices in the collection of delinquent consumer debt, for example, practices related to late charges, responsibilities of cosigners, and wage assignments.)
- **Flood Disaster Protection Act of 1973**
Requires flood insurance on property in a flood hazard area that comes under the National Flood Insurance Program.



- **Home Equity Loan Consumer Protection Act of 1988**
Requires creditors to provide consumers with detailed information about open-ended credit plans secured by the consumer's dwelling and with a brochure describing home equity loans in general. Also regulates advertising of home equity loans and restricts the terms of home equity loan plans.
- **Home Mortgage Disclosure Act of 1975**
Requires mortgage lenders to publicly disclose the geographic distribution of their mortgage and home improvement loans and their loan approval rates by sex, race, and other applicant characteristics. Also directs the Federal Financial Institutions Examination Council (of which the Federal Reserve is a member) to make summaries of these data available to the public.
- **Real Estate Settlement Procedures Act of 1974**
Requires that the nature and costs of real estate settlements be disclosed to borrowers. Also protects borrowers against abusive practices, such as kickbacks, and limits the use of escrow accounts.
- **Right to Financial Privacy Act of 1978**
Protects bank customers from the unlawful scrutiny of their financial records by federal agencies and specifies procedures that government authorities must follow when they seek information about a customer's financial records from a financial institution.
- **Truth in Lending Act (1968)**
Requires uniform methods for computing the cost of credit and for disclosing credit terms. Gives borrowers the right to cancel within three days certain loans secured by their residences. Also prohibits the unsolicited issuance of credit cards and limits cardholder liability for unauthorized use.
- **Truth in Savings Act (1991)**
Requires that depository institutions disclose to depositors certain information about their accounts, including the annual percentage yield calculated in a uniform manner; regulates advertising of savings accounts; and prohibits certain methods of calculating interest.
- **Women's Business Ownership Act of 1988**
Extends to applicants for business credit certain protections afforded consumer credit applicants, such as the right to an explanation for credit denial.



Reserve Bank Services

The twelve Federal Reserve Banks provide banking services to depository institutions and to the federal government. For depository institutions, they maintain reserve and clearing accounts and provide various payment services including collecting checks, electronically transferring funds, and distributing and receiving currency and coin. For the federal government, they act as fiscal agents. As such, the Reserve Banks maintain the Treasury Department's transaction account; pay Treasury checks; process electronic payments; and issue, transfer, and redeem U.S. government securities.

THE RESERVE BANKS ALSO PERFORM numerous specialized services for the federal government and its agencies, such as redeeming food coupons and monitoring special accounts—Treasury tax and loan accounts—in which tax receipts are held until the Treasury needs funds to make payments.

In creating the Federal Reserve System, Congress intended to eliminate the severe financial crises that had periodically swept the nation. The System was to provide not only an elastic currency—that is, a currency that would expand or shrink in amount as economic conditions warranted—but also an efficient and equitable check-collection system.

Congress's concerns about the nation's financial system centered on the financial panic of 1907. During that episode, cash payments were largely suspended throughout the country because many banks and clearinghouses refused to clear checks drawn on certain other banks. These practices led to the failure of otherwise solvent banks. To address these problems, Congress gave the Federal Reserve the authority to establish a nationwide check-clearing system.

Congress was also concerned that some banks refused to pay the full amount of the check (nonpar collection) and that some charged certain collecting banks fees to pay checks (presentment

fees). To avoid paying presentment fees, many collecting banks routed checks through banks that were not charged presentment fees by payor banks. This practice, called circuitous routing, resulted in extensive delays and inefficiencies in the check-collection system. In 1917, Congress amended the Federal Reserve Act to prohibit banks from charging the Federal Reserve Banks presentment fees; the amended act also authorized nonmember banks as well as member banks to collect checks through the Federal Reserve System.

In passing the Monetary Control Act of 1980, Congress reaffirmed its intention that the Federal Reserve should promote an efficient nationwide payments system. To encourage competition between the Federal Reserve and private-sector providers of payment services, the act requires the Federal Reserve to charge fees for its payment services. The Monetary Control Act also requires all depository institutions, not just member commercial banks, to maintain reserves with the Federal Reserve System and grants them equal access to Federal Reserve payment services.

Congress expanded the role of the Federal Reserve in the payments system again in 1987 when it enacted the Expedited Funds Availability Act. This act gives the Federal Reserve authority to improve the check-collection system by using electronic means to collect checks, by promoting truncation (under which a depository institution or Reserve Bank keeps the paper checks and sends only electronic data to the payor bank to request payment), and by handling all returned checks regardless of the way the check was originally collected. The act also limits the time a depository institution may hold funds before making them available to customers for withdrawal.

THE FEDERAL RESERVE AND THE PAYMENTS SYSTEM

The U.S. payments system is the largest in the world. Each year billions of transactions, valued in the trillions of dollars, are conducted between payors (purchasers of goods, services, or financial assets) and payees (sellers of goods, services, or financial assets). Based on the mandates of Congress, the Federal Reserve is an active intermediary in clearing and settling interbank payments. The Federal Reserve Banks play this role because they maintain reserve or clearing accounts for the majority of deposi-

tory institutions. As a result, they can settle payment transactions efficiently by debiting the accounts of the depository institutions making payments and by crediting the accounts of depository institutions receiving payments. Moreover, the Reserve Banks, as part of the nation's central bank, are immune from liquidity problems (not having sufficient funds to complete payment transactions) and credit problems. Payments received in accounts maintained at the Federal Reserve, therefore, are free of liquidity and default risk.

The Federal Reserve provides a variety of payment services to depository institutions. Its cash services include the distribution of currency and coin and the removal of unfit notes and coins from circulation. Its noncash services include the collection of checks, the processing of electronic funds transfers, and the provision of net settlement services to private clearing arrangements.

Cash Services: Currency and Coin

An important function of the Federal Reserve System is ensuring that enough currency and coin are in circulation to meet the public's demand. When Congress created the Federal Reserve System, it recognized that the demand for cash by the public and the banking system varies from time to time. This demand increases or decreases directly with the level of economic activity and with the seasons of the year. For example, consumers' demand for currency typically increases during holiday seasons, and farmers' demand increases during planting and harvesting seasons. The additional currency and coin put into circulation to meet seasonal demand is eventually returned to depository institutions by merchants and other business owners. To reduce the excess currency and coin held in their vaults, depository institutions return the excess to their regional Reserve Bank, where it is credited to their accounts. The process is reversed when depository institutions need to replenish or increase their supply of currency and coin.



Virtually all currency in circulation is in the form of Federal Reserve notes. Each of the twelve Federal Reserve Banks is authorized by the Federal Reserve Act to issue currency. Before the Reserve Banks issue currency to the banking system, the currency

must be secured by legally authorized collateral, most of which is in the form of U.S. Treasury and federal agency securities held by the Reserve Banks. The notes are a first lien on the assets of the issuing Reserve Bank and are obligations of the U.S. government. The notes are designed and printed by the Bureau of Engraving and Printing of the Department of the Treasury and are delivered to the Reserve Banks for circulation. The Federal Reserve System pays the Bureau of Engraving and Printing only for the cost of printing the notes.¹

Coin is different from currency in that it is the direct obligation of the Treasury. The Reserve Banks pay the Department of the Treasury's Bureau of the Mint for the face value of the coin received rather than for the cost of the minting.

As currency and coin flow back to the Reserve Banks, each deposit is counted and verified against the amount the depository institution says it contains, and overages or shortages are credited or debited to the institution's account. As currency deposits are verified, notes that are suspected of being counterfeit and those that are too worn for recirculation are separated from the rest. The Reserve Banks hold the fit notes in their vaults along with new notes until they are needed to meet demand. The unfit notes are destroyed, and their face value is deducted from the total amount of Federal Reserve notes outstanding.



Currency and coin are used primarily for small-dollar transactions and thus account for only a small proportion of the total dollar value of all monetary transactions. During 1993, the Federal Reserve System delivered to depository institutions about 21.9 billion notes having a value of \$324.2 billion and received from depository institutions about 21.2 billion notes having a value of \$292.7 billion; 7.4 billion of the returned notes were destroyed. The difference between the amount of currency delivered and the amount received equals the annual increase or decrease in

1. The first U.S. paper money under the Constitution—demand notes—was issued in 1861. All currency issued by the U.S. government since then remains valid. Currency in circulation, other than Federal Reserve notes, includes silver certificates (which have a blue Department of the Treasury seal), United States notes (red seal), and national bank notes (brown seal). Federal Reserve notes (which have a green seal) were first issued in 1914.

depository institutions' demand for currency resulting from economic conditions.

Over the past several decades, the value of currency in circulation has risen dramatically—from \$31.2 billion in 1955 to \$365.3 billion in 1993 (table 7.1). The total number of notes in circulation (15.5 billion at the end of 1993) and the demand for larger denominations (\$20, \$50, and \$100 notes) have also increased (table 7.2). In 1960, these larger denominations constituted 64 percent of the total value of currency in circulation; by the end of 1993, they accounted for 92 percent. Because the dollar is viewed throughout the world as a highly stable and readily negotiable currency, much of the increased demand for notes of larger denomination has arisen outside the United States. Although the exact value of U.S. notes held outside the United States is unknown, various estimates suggest that at least one-half of all U.S. currency circulates abroad and that flows abroad have been increasing in recent years.

The use of the dollar outside the United States does not affect the supply of currency and coin needed to support domestic eco-

Table 7.1
Value of currency and coin in circulation, selected years, 1955–93
Millions of dollars

<i>Year</i>	<i>Currency</i>	<i>Coin</i>	<i>Total</i>
1955	29,242	1,916	31,158
1960	30,442	2,426	32,868
1965	38,029	4,027	42,056
1970	45,915	5,986	51,901
1975	68,059	8,285	76,344
1980	109,515	11,641	121,156
1985	182,003	15,456	197,459
1990	268,206	18,765	286,971
1991	288,453	19,263	307,716
1992	314,752	19,948	334,700
1993	344,465	20,804	365,269

Table 7.2
Estimated value of Federal Reserve notes in circulation by denomination,
selected years, 1960–93

Billions of dollars

Year	Denomination, in dollars								Total
	1	2	5	10	20	50	100	Other ¹	
1960	1.5	.1	2.2	6.7	10.5	2.8	6.0	.6	30.4
1970	2.1	.1	2.9	8.4	16.6	4.4	10.9	.5	45.9
1980	3.1	.7	4.1	11.0	36.4	12.2	41.6	.4	109.5
1990	5.1	.8	6.3	12.6	69.0	33.9	140.2	.3	268.2
1993	5.7	.9	6.9	13.2	74.9	40.9	201.5	.3	344.3

1. Other denominations include the \$500, \$1,000, \$5,000, and \$10,000 notes in circulation. No denominations larger than \$100 have been printed since 1946 nor issued since July 1969. A great majority of these larger notes outstanding are held by private collectors, currency dealers, or financial institutions for promotion and display.

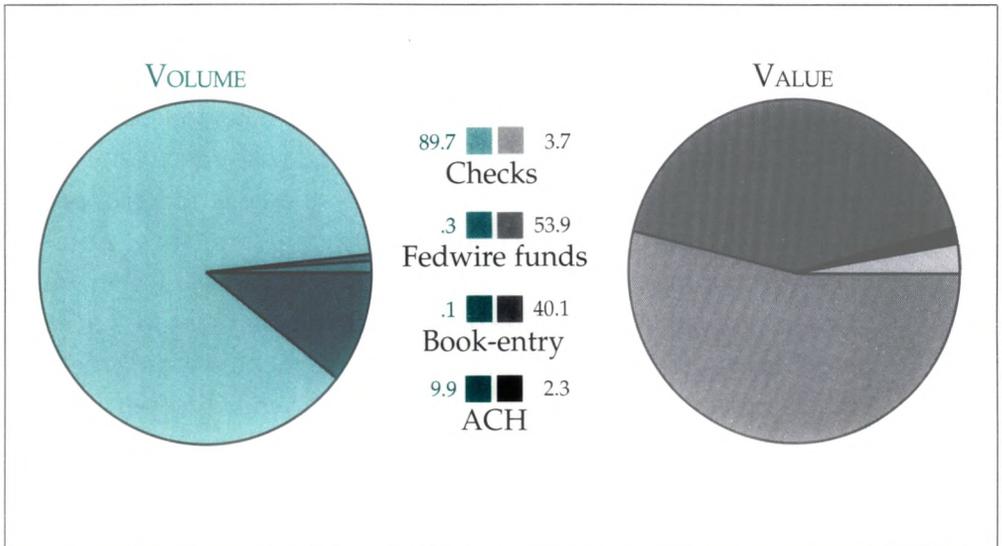
conomic activity. As noted earlier, the Federal Reserve supplies currency and coin in amounts sufficient to meet the demand of the U.S. public.

Noncash-Transaction Services

Although cash is convenient and is commonly used for small-dollar transactions, noncash payment instruments—such as checks and electronic funds transfers—are generally preferred for larger-value transactions. Figures for the noncash services provided by the Federal Reserve give a general picture of the use of noncash transactions in 1993 (chart 7.1). Notably, checks continue to account for the largest share of noncash payments by number (about 90 percent in 1993) but for a minor share in terms of value (less than 4 percent). Fedwire funds transfers, in contrast, accounted for less than 1 percent of the number of noncash transactions processed by the Federal Reserve in 1993 but nearly 55 percent of the value. The use of the automated clearinghouse has been growing rapidly since its inception in the 1970s, but transaction volume is still only a fraction of check volume.

Chart 7.1
Federal Reserve noncash-transaction services, 1993

Percent



Check Processing

In 1993, an estimated 59 billion checks were written in the United States. About one-quarter of these checks were deposited in the same institution on which they were drawn (called "on-us" checks). Checks not drawn on the institution at which they were deposited are called interbank checks. In 1993, more than 40 percent of interbank checks were collected through the Federal Reserve, and the remainder were handled through private clearing arrangements.

Handling interbank checks requires a mechanism for exchanging them and providing for the related movement of funds (or settlement) among the banks and other depository institutions that are involved. When a depository institution receives checks drawn on other institutions, it may send the checks for collection to those institutions directly, deliver them physically to the institutions at a local clearinghouse, or purchase the collection services of a correspondent institution or a Federal Reserve office.

For checks collected through the Federal Reserve, the account of the collecting institution is credited for the value of the deposited checks in accordance with the availability schedules maintained by the Reserve Banks. These schedules reflect the time normally

needed for the Federal Reserve to receive payments from the institutions on which the checks are drawn. Credit is usually given on the day of deposit or the next business day. In 1993, the Federal Reserve collected 19 billion checks with a value of \$14.1 trillion (table 7.3).

Since it was established, the Federal Reserve has worked with the private sector to improve the efficiency and cost-effectiveness of the check-collection system. In the 1940s, the Federal Reserve and the banking industry developed routing numbers. These numbers are still printed on checks to identify the institution on which a check is drawn and to which the check must be sent for payment. In the 1950s, they developed and implemented the magnetic ink character recognition (MICR) system for encoding pertinent data on checks so that the data could be read electronically. This development contributed significantly to the automation of check processing.

Table 7.3
Number and value of commercial checks collected
by the Federal Reserve, selected years, 1920–93¹
 Number in millions; value in millions of dollars

<i>Year</i>	<i>Number</i>	<i>Value</i>
1920	424	149,784
1930	905	324,883
1940	1,184	280,436
1950	1,955	856,953
1960	3,419	1,154,121
1970	7,158	3,331,733
1980	15,716	8,038,026
1990	18,598	12,519,171
1993	19,009	14,066,518

1. In 1993, the Federal Reserve System, acting as fiscal agent for the U.S. Treasury, also paid 480 million checks and 192 million postal money orders.

In the 1970s, the Federal Reserve introduced a regional check-processing program to further improve the efficiency of check clearing. The program expanded the number of check-processing facilities, which enabled the Federal Reserve to collect significantly more checks faster. At the end of 1994, the Federal Reserve maintained forty-six check-clearing centers. These centers are located at each of the Reserve Banks (except the Federal Reserve Bank of New York), the twenty-five Reserve Bank Branches, and



the ten regional check-processing centers (see chapter 1). Each center serves a specific geographical area.

In the mid-1980s, the Federal Reserve began to encourage the conversion of paper checks to electronic records in order to improve the efficiency of the check-collection process. Consequently, the Federal Reserve has actively promoted check truncation, which could significantly streamline the system. The Federal Reserve has also actively supported research to develop check image processing, which permits the image of a paper check to be captured, processed, and stored on electronic media for retrieval when needed.

*A*utomated check-processing equipment facilitates the rapid processing of payments.

Until the late 1980s, depository institutions were allowed to hold deposited funds for an unlimited time before making them available for withdrawal. Some banks continued to use circuitous routes to clear checks to avoid presentment fees, and depositors could not be sure when their funds would be available. In 1987, Congress enacted the Expedited Funds Availability Act (EFAA), which limits the time that banks can hold funds from checks deposited into customer accounts before the funds are made available for withdrawal. The law was implemented in September 1988 through the Board of Governors' Regulation CC, Availability of Funds and Collection of Checks, which also establishes rules designed to speed the return of unpaid checks.

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The EFAA requires that funds be made available for deposits of cash, Treasury checks, and cashier's checks no later than the business day after the banking day of deposit. Regulation CC extends this next-day availability to U.S. Postal Service money orders and to checks drawn on a Federal Reserve Bank or a Federal Home Loan Bank. For the majority of other check deposits, the location of the paying bank in relation to the bank in which the check was deposited determines the availability of funds.

According to Regulation CC, the bank into which a local check is deposited must make the funds available for withdrawal by the second business day after the day of deposit. (A local check is a



check deposited in a bank in the same Federal Reserve check-processing region as the paying bank.) Proceeds of a nonlocal check—that is, one deposited in a bank in a different check-processing region from the paying bank—must be available for withdrawal by the fifth business day after deposit. In certain circumstances, such as when the bank has reasonable cause to believe the check is uncollectible or when an

account is new, the bank may delay the availability of the funds. In such a case, the bank must notify the customer, explain the delay, and indicate when the funds will be available.

In late 1992, the Federal Reserve modified Regulation CC to permit all depository institutions to demand payment in same-day funds from payor institutions without paying presentment fees, provided certain conditions are met by collecting banks. This modification, called same-day settlement, grants depository institutions the right to obtain payment for checks that is similar to the right of the Federal Reserve. As depository institutions take advantage of that right, an increasing number of checks will be presented directly to the banks on which they are drawn.

Electronic Funds Transfer

Electronic funds transfer (EFT) is a faster and more secure method of payment than either cash or check. The Federal Reserve Banks provide two types of services for electronically transferring funds: Fedwire and the Automated Clearinghouse (ACH). Through the Fedwire service, depository institutions typically transfer large-dollar payments (the average value of a Fedwire transfer in 1993 was approximately \$3 million). Depository institutions generally use the ACH for small-dollar payments.

Fedwire allows depository institutions to transfer funds on their own behalf or on behalf of their customers. Such transfers result from trades of federal funds and other interbank transactions, purchases and sales of securities, and time-sensitive payments. The Department of the Treasury and other federal agencies also use the Fedwire to disburse and collect funds. In 1993, the Reserve Banks processed 70 million Fedwire payments having a total value of \$208 trillion (table 7.4).

Fedwire funds transfers are processed individually. Sophisticated data-communications and data-processing systems ensure that each transfer is authorized by the sender and that it is not altered while it is under the control of the Federal Reserve. Although a few banks continue to initiate Fedwire payments by telephone, more than 99 percent of all Fedwire funds transfers are initiated on-line through personal or mainframe computers. Fedwire funds transfers are processed in seconds. When the Federal Reserve processes a funds transfer, it electronically debits the account of the sending institution and credits the account of the receiving institution. The Federal Reserve guarantees the payment to the bank receiving the transfer and assumes any risk if the bank sending the payment has insufficient funds in its Federal Reserve account to complete the transfer.

Table 7.4
Number and value of Fedwire funds transactions processed by the Federal Reserve, selected years, 1920–93
 Number in millions; value in millions of dollars

<i>Year</i>	<i>Number</i>	<i>Value</i>
1920	.5	30,857
1930	2.0	198,881
1940	.8	92,106
1950	1.0	509,168
1960	3.0	2,428,083
1970	7.0	12,332,001
1980	43.0	78,594,862
1990	63.0	199,067,200
1993	70.0	207,629,814

Fedwire also allows depository institutions to transfer the ownership of U.S. Treasury securities and the securities of various federal agencies, such as the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation, for themselves and for their customers. Most of these securities are held in safekeeping by the Reserve Banks as book entries (as electronic

records of securities holdings rather than as paper certificates). The Federal Reserve Banks safekeep and transfer U.S. government securities in their capacity as fiscal agents for the U.S. Treasury. They carry out these functions for government agencies as a service to depository institutions. In 1993, 12.7 million book-entry securities transfers with a value of \$154 trillion were transferred using Fedwire (table 7.5).



Fedwire book-entry securities transfers are processed individually, in much the same way that Fedwire funds transfers are processed. When the Federal Reserve receives a request to transfer a security, it determines that the security is held in safekeeping for the institution requesting the transfer and withdraws the security from the institution's safekeeping account. It then electronically credits the proceeds of the sale to the account of the depository institution, deposits the book-entry security into the safekeeping account of the receiving institution, and electronically debits that institution's account for the purchase price. The Federal Reserve guarantees payments to institutions sending book-entry securities transfers.

Table 7.5

Number and value of book-entry securities transfers processed by the Federal Reserve, selected years, 1970–93

Number in millions; value in millions of dollars

<i>Year</i>	<i>Number</i>	<i>Value</i>
1970	.3	258,200
1980	4.1	13,354,100
1990	11.5	101,262,260
1993	12.7	154,433,803

Because of the difficulty in synchronizing the flow of payments over Fedwire, depository institutions sometimes do not have sufficient funds in their accounts to cover all payments at the time they are processed. To protect itself against the risk of nonpayment, the Federal Reserve sets limits on the amount of credit it will extend to a depository institution during the business day, may require institutions to post collateral, and assesses fees to depository institutions for intraday loans.

The Automated Clearinghouse (ACH) is another electronic funds transfer system, developed jointly by the private sector and the Federal Reserve in the early 1970s as a more efficient alternative to checks. Since then, the ACH has evolved into a nationwide mechanism that processes electronically originated credit and debit transfers. For example, ACH credit transfers are used to make direct deposit payroll payments and corporate payments to contractors and vendors. ACH debit transfers are used by consumers to make payments on insurance premiums, mortgages, loans, and other bills and by businesses to concentrate funds at a primary bank and to make payments to other businesses. In 1993, the Federal Reserve processed 2.1 billion ACH payments with a value of \$8.7 trillion (table 7.6).

Unlike Fedwire funds transfers, which are processed individually and settled immediately at the time of processing, ACH payments are transmitted in batches to a Federal Reserve processing center by a depository institution. Transfers are generally processed one or two days before the settlement date and are delivered to receiving depository institutions several times a day as they are pro-

Table 7.6
Number and value of ACH transactions processed by the Federal Reserve, selected years, 1975–93

Number in millions; value in millions of dollars

<i>Year</i>	<i>Number</i>	<i>Value</i>
1975	6	92,868
1980	227	286,600
1990	1,435	4,660,476
1993	2,100	8,747,318

Clearing House Association operates a large-dollar funds transfer system, called the Clearing House Interbank Payments System, which is used principally to exchange large-dollar, international payments. Some private networks also exchange securities transactions, automated clearinghouse transactions, automated teller machine (ATM) transactions, and credit card transactions.

Private clearing arrangements track the value of payments exchanged among their members and, at a cutoff time, calculate the net position of each member. Those members that have made more payments than they have received owe funds to the clearing arrangement, and those that have received more payments than they have made are due funds from the clearing arrangement. The sum of the participants' net debit and credit positions equals zero because the arrangements are closed systems.

In support of such arrangements, the Federal Reserve provides net settlement services to depository institution participants. Two types of settlement services are available. In one case, the agent for the participant gives the Federal Reserve a statement indicating the net debit and credit positions of each participant, and the Federal Reserve posts the appropriate entries to the participating institutions' Federal Reserve accounts. In the other case, the agent for the participants informs each participant of its net position. Institutions in net debit positions send Fedwire funds transfers to the clearing arrangement's net settlement account at the Reserve Bank. When the account is fully funded, the agent sends Fedwire funds transfers to the accounts of the participants in net credit positions.

Depository institutions participating in large-dollar private-sector clearing arrangements that make more payments to other participants than they receive may have very large settlement obligations each day. If one of these institutions were unable to settle its obligation, other institutions participating in the arrangement also might be unable to settle. The risk that one participant in a privately operated clearing arrangement will not be able to settle its obligation is called systemic risk. To protect the payments system, the Federal Reserve sets standards to ensure the integrity of large-dollar clearing arrangements and to limit the systemic risk that they create.

OTHER FEDERAL RESERVE BANK SERVICES

The Federal Reserve Banks provide definitive securities services to depository institutions. These services include safekeeping of physical (as opposed to book-entry) securities, through storage of the securities in a Reserve Bank vault, and collection of matured coupons and bonds by presenting them to the place at which they are payable. The demand for definitive securities services has been declining since the early 1980s, when federal tax legislation effectively reduced the supply of definitive securities. As a result of this decreased demand, the Federal Reserve Banks now keep only those definitive securities that are pledged by depository institutions as collateral to secure their borrowings from the Federal Reserve or to comply with federal regulations.

FISCAL AGENCY FUNCTIONS

As fiscal agents of the United States, the Federal Reserve Banks function as the federal government's bank and perform several services for the Treasury. These services include the following:

- Maintaining the Treasury's funds account
- Clearing Treasury checks drawn on that account
- Conducting nationwide auctions of Treasury securities
- Issuing, servicing, and redeeming Treasury securities.

Federal Reserve Banks also perform fiscal agency services for various federal and federally sponsored agencies. The Treasury and other government agencies reimburse the Federal Reserve Banks for the expenses incurred in providing these services.

One service performed by the Reserve Banks on behalf of the Treasury is the daily monitoring of federal tax receipts. Taxes paid by businesses and individuals flow into special, interest-earning accounts, called Treasury tax and loan (TT&L) accounts, at more than 12,000 depository institutions (TT&L depositories) nationwide. The TT&L depositories accept tax payments directly from employers and individuals and report the amount received to a Federal Reserve office. The TT&L balances that are not protected by deposit insurance are fully collateralized at all times, and the Reserve Banks monitor them for compliance with collateral re-

quirements. Each day the Federal Reserve Banks report the total amount in TT&L accounts to the Treasury's cash managers, who in turn decide what portion of the tax receipts is needed to cover the government's daily operating expenses. The managers notify the Reserve Banks of that amount, and the Reserve Banks transfer the needed funds from the TT&L accounts to the Treasury's account at the Federal Reserve.

The Reserve Banks also handle the weekly, monthly, and quarterly auctions of Treasury securities, through which the Treasury raises money to finance government spending and to refinance the debt. The Reserve Banks announce the sales, accept the bids (called tenders), communicate the bids to the Treasury, issue the securities in book-entry form once the Treasury has chosen the successful bids, collect payment from the successful bidders, and deposit the money in the Treasury's funds account at the Federal Reserve. The Reserve Banks, on behalf of the Treasury and some other government agencies, also deliver new book-entry securities, service securities that are outstanding, and redeem securities that have matured.



The Federal Reserve Banks provide another unique securities service for the Treasury: They maintain a separate safekeeping system, called Treasury Direct, which holds book-entry Treasury securities purchased by individuals who wish to hold their securities directly with the Treasury instead of with a depository institution. Individuals purchase Treasury securities directly but instruct that the securities be delivered to their Treasury Direct account. Once the securities are deposited there, any interest or principal payments owed to the account holder are directly deposited to the account holder's account at a depository institution by the ACH. At year-end 1993, 1.2 million investor accounts were maintained on the Treasury Direct system, and the securities holdings had a par value of more than \$60 billion.

The Federal Reserve Banks also issue, service, and redeem tens of millions of U.S. savings bonds each year on behalf of the Treasury. As authorized by the Treasury, they also qualify depository institutions and corporations as issuing agents and paying agents for savings bonds.



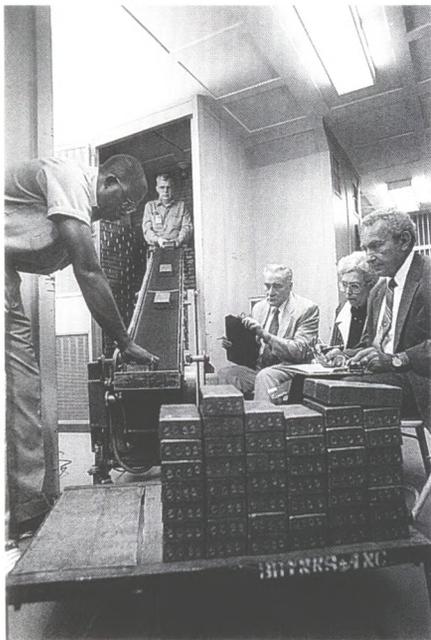
The federal government disburses funds to the public from the account it maintains with the Federal Reserve. These disbursements can be made as Fedwire funds transfers, ACH payments, or checks. Fedwire disbursements are typically associated with, but not limited to, the redemption of Treasury securities. Certain recurring payments, such as social security benefits and government employee salaries, are increasingly processed by the ACH and electronically deposited directly to the recipients' accounts at their depository institutions. Other government payments, such as income tax refunds, are usually made using Treasury checks drawn on the Treasury's funds account at the Federal Reserve.

INTERNATIONAL SERVICES

As the central bank of the United States, the Federal Reserve performs services for foreign central banks and for international organizations, such as the International Monetary Fund, the International Bank for Reconstruction and Development (informally called the World Bank), and the Bank for International Settlements. These services are generally provided by the Federal Reserve Bank of New York.

At the Federal Reserve Bank of New York, a foreign official institution can establish a non-interest-bearing funds account (in U.S. dollars), safekeeping accounts for book-entry and definitive securities, and an account for safekeeping gold. Some foreign official institutions channel a portion of their daily receipts and payments in U.S. dollars through their funds accounts at the Federal Reserve Bank of New York. If the account contains excess funds, the foreign official institution may request the Bank to invest these funds until they are needed. Conversely, if the account needs additional funds, the foreign institution may instruct the Bank to sell some securities it holds in safekeeping there.

The securities services available to foreign official institutions are identical to those offered to U.S. depository institutions by the Federal Reserve, except that the Federal Reserve does not limit the safekeeping of definitive securities for foreign official institutions to those pledged as collateral. The Federal Reserve Bank of New York also holds in its vaults billions of dollars in gold owned by foreign official institutions.



Gold owned by foreign official institutions held in the vault of the Federal Reserve Bank of New York.

At the request of a foreign official institution, the Federal Reserve Bank of New York will buy or sell foreign currencies in exchange for U.S. dollars and will debit or credit the institution's funds account accordingly. Also upon request, the Bank will purchase or sell a U.S. government security on behalf of the foreign institution and will make the corresponding entries to the securities and funds accounts that the institution maintains with the Federal Reserve. The Bank charges for the services it provides to foreign official institutions.

As fiscal agent for international organizations, the Federal Reserve Banks make principal and interest payments for securities issued by many of these organizations. The Federal Reserve Bank of New York maintains accounts for some international organizations and receives and makes payments in U.S. dollars on their behalf; it also in-

vests funds for international organizations according to either specific directions or standing instructions. ■

Closely related to the gold certificate account is the *SPECIAL DRAWING RIGHTS CERTIFICATE ACCOUNT* (item 2). Special drawing rights (SDRs) are a type of asset created by the International Monetary Fund (IMF), after agreement by a large majority of its members, to supplement the members' international reserve assets; SDRs are allocated to the members according to the size of the members' quotas, but without any payment. SDRs received by the U.S. government are, by law, held by the

Table A.1

Consolidated statement of condition of all Federal Reserve Banks, June 29, 1994

Millions of dollars

<i>Account</i>	<i>Amount¹</i>
<i>Assets</i>	
1. Gold certificate account	11,052
2. Special drawing rights certificate account	8,018
3. Coin	302
4. Loans	381
5. Securities	355,841
a. Bought outright	351,563
b. Held under repurchase agreement	4,279
6. Cash items in process of collection	4,998
7. Other assets	32,013
<i>Total assets</i>	<i>412,606</i>
<i>Liabilities</i>	
8. Federal Reserve notes	359,698
9. Deposits	37,732
a. Depository institutions	30,864
b. U.S. Treasury, general account	6,435
c. Foreign official accounts	163
d. Other	270
10. Deferred availability cash items	4,541
11. Other liabilities and accrued dividends	3,230
<i>Total liabilities</i>	<i>405,202</i>
<i>Capital accounts</i>	
12. Capital paid in	3,523
13. Surplus	3,401
14. Other capital accounts	481
<i>Total liabilities and capital accounts</i>	<i>412,606</i>

1. In tables A.1 and A.2, details may not sum to totals because of rounding.

Secretary of the Treasury for the account of the Exchange Stabilization Fund (ESF). From time to time, the ESF monetizes SDRs by issuing SDR certificate credits to the Reserve Banks. These credits are added to the SDR certificate account, and the dollar value of the new SDR certificate credits is added to a special Treasury deposit account (part of item 9d).¹

COIN (item 3) represents the value of coins issued by the Treasury that the Reserve Banks hold. When the Treasury issues coin, the Federal Reserve credits the Treasury deposit account (item 9b) and increases its own holding of coin (item 3). The public obtains coin, as needed, from depository institutions, which in turn generally acquire it from the Reserve Banks. When depository institutions obtain coin from the Reserve Banks, their reserve deposits with the Reserve Banks (item 9a) are debited.

LOANS (item 4) represent the amount of discount window credit extended by Federal Reserve Banks to depository institutions. The proceeds of such loans are credited to the accounts of depository institutions at the Federal Reserve (item 9a), and the accounts are debited when the loan is repaid.

The Federal Reserve System's portfolio of *SECURITIES* (item 5) contains mainly U.S. government securities, including Treasury bills, notes, and bonds and obligations of federal agencies, acquired originally through open market operations.

CASH ITEMS IN PROCESS OF COLLECTION (CIPC) (item 6) are checks and other cash items (such as interest coupons from municipal securities) that have been deposited with the Reserve Banks for collection on behalf of an institution having an account. This item has a counterpart on the liability side of the statement, *DEFERRED AVAILABILITY CASH ITEMS* (item 10). Items 6 and 10 are both "suspense items"—accounts that reflect a transaction in process. When a Federal Reserve Bank receives a check for collection, CIPC increases. Unless the depository institution receives reserves the same day, the volume of deferred availability cash items also rises.² When the institution that brought the check for collection receives credit, its reserve account, in item 9a, is increased, and item 10 is reduced. When the check is actually collected, item 6 and the

1. Since 1974, the IMF has calculated the daily value of the SDR using a weighted average of exchange rates of the currencies of certain member countries. The Exchange Stabilization Fund values its SDR holdings on this basis and, when monetizing SDRs, determines accordingly the dollar value of the SDR certificate credits issued. As of June 29, 1994—the date of table A.1—the ESF held \$1.7 billion of unmonetized SDRs and \$8 billion of SDRs that had been monetized with the Federal Reserve.

2. Intraterritory checks (that is, checks involving a payor depository and a payee depository served by the same Federal Reserve office) generally are credited the same day that the Federal Reserve receives the checks. Such payment is affected by directly debiting and crediting the depositories' accounts at the Federal Reserve Bank, and no entry in the two suspense accounts is necessary.

reserve account of the institution on which the check is drawn, in item 9a, are both reduced.

OTHER ASSETS (item 7) consist of the value of Federal Reserve Bank premises, interest accrued, Federal Reserve holdings of foreign currency, and various other items generally of minor importance.

Major Liability Accounts

FEDERAL RESERVE NOTES (item 8) are the principal type of U.S. currency in circulation. These notes represented almost 89 percent of total Reserve Bank liabilities at the end of June 1994.³

DEPOSITS of all kinds at Reserve Banks are reported in item 9:

- *DEPOSITS OF DEPOSITORY INSTITUTIONS* (item 9a) take the form of reserve balances and service-related balances. Service-related balances are balances some depository institutions elect to maintain at Federal Reserve Banks for clearing purposes; these balances earn interest credits that can be used to defray the costs of various Federal Reserve services used by an institution. Reserve balances are considerably larger in volume than service-related balances and, with certain holdings of vault cash, constitute the reserves available to the depository system for satisfying reserve requirements.
- The second largest category of Reserve Bank deposit liabilities is *DEPOSITS OF THE U.S. TREASURY* (item 9b). The Treasury draws on these accounts to make payments by check or direct deposit for all major types of federal spending. When these payments clear, depository reserve balances rise and Treasury deposits fall. The Treasury's accounts at Reserve Banks are replenished primarily by transfers of funds from accounts held at depository institutions, in which the Treasury initially deposits its receipts from taxes and from the sale of securities. When such transfers are made, reserve balances are debited and Treasury deposits are credited.
- *DEPOSITS OF FOREIGN CENTRAL BANKS AND GOVERNMENTS* (item 9c) are the third category of deposit liabilities at the Reserve Banks. Such deposits are maintained with the Federal Reserve Bank of New York, but all the Reserve Banks share in the deposit liability. These deposits represent working balances held by foreign authorities for purposes of international settlement.
- The fourth category, *OTHER DEPOSIT LIABILITIES* (item 9d), includes deposits of some U.S. government agencies and of international organizations of which the United States is a member, as well as miscellaneous deposits.

3. Although each Reserve Bank may hold as assets Federal Reserve notes issued by other Reserve Banks, such notes cancel out in a consolidated statement of condition for the System as a whole and thus do not appear in the table.

As mentioned above, *DEFERRED AVAILABILITY CASH ITEMS* (item 10) arise because Reserve Banks do not give immediate credit to the account of a depositing institution for all checks presented to the Reserve Banks for collection. In many cases, credit is deferred according to schedules that allow some time for checks to be delivered to the institutions on which they are drawn. After this interval, the institution's reserve balance is automatically credited, and the total of deferred availability cash items is reduced. Because the time actually taken to collect a check may be longer than that allowed in the schedule, the depositing institution's reserve balance may be credited before the reserve balance of the institution on which the check is drawn is debited.

The difference between the asset account (cash items in process of collection) and the liability account (deferred availability cash items) is called Federal Reserve "float" and represents checks and other items that, although not yet collected by the Reserve Banks, have already been credited to the reserve balances of the institutions that deposited them. Float measures the amount of Federal Reserve credit granted to depository institutions (item 9a) that is generated by the Federal Reserve's involvement in the national process of check collection.

OTHER LIABILITIES AND ACCRUED DIVIDENDS (item 11) consist of unearned discounts, discounts on securities, and miscellaneous accounts payable.

Capital Accounts

A bank that is a member of the Federal Reserve System must, under the Federal Reserve Act, subscribe to the capital stock of the Reserve Bank of its District. The total amount of a member bank's subscription is equal to 6 percent of its current capital stock and surplus. Of this amount, one-half is *CAPITAL PAID IN* (item 12) and one-half is subject to call by the Board of Governors. These shares, unlike ordinary stock in private banks or corporations, do not carry voting power to control the policies of the Reserve Banks. Member institutions are entitled by statute to a cumulative dividend of 6 percent per year on the value of their paid-in stock. Holdings of Reserve Bank stock may not be transferred, nor may the shares be used as collateral for loans.

The *SURPLUS ACCOUNT* (item 13) represents retained net earnings of the Reserve Banks, and the *OTHER CAPITAL ACCOUNTS* (item 14) reflect the unallocated net earnings for the current year to the date of the statement. The Reserve Banks may draw on their surplus to meet deficits and to pay dividends in years when operations result in loss, but they may not otherwise distribute it to the stockholding member banks. The Federal Reserve for some years has retained sufficient earnings to equate its surplus to capital paid in; the balance of net Federal Reserve earnings is turned over to the Treasury.

THE RESERVE EQUATION

Shown in table A.2, the “reserve equation” specifies all the factors that can influence the supply of reserves. Thus, it provides a useful framework for analyzing how the quantity of reserves is determined. Factors 1 through 7 in the equation determine reserve balances of depository institutions that are held at Reserve Banks during the current reserve maintenance period. Factors 1 through 3 are the sources of funds that could end up as reserve balances with the Federal Reserve Banks. Factors 4 through 7 are the uses other than reserve balances that could absorb reserve funds. Factor 8, reserve balances, is the remaining use for such reserve funds. Indeed, the amount of reserve balances is determined here as the difference between total supply of such reserve funds and total uses, other than reserve balances, absorbing such reserve funds.

Most of the factors in the equation appear on the consolidated balance sheet of the Federal Reserve Banks. In the reserve equation, reserve balances are separated from service-related balances and adjustments (factor 6c), rather than combined in deposits of depository institutions (item 9a on the balance sheet). Similarly, Federal Reserve float (factor 1c in the reserve equation) is defined as cash items in process of collection (item 6 in the balance sheet) less deferred availability cash items (item 10) plus minor technical adjustments. A convenient rule of thumb is that items from the asset side of the Reserve Bank balance sheet enter the equation as sources (which supply potential reserve funds) and that liabilities enter as uses (which absorb potential reserve funds).

The equation for determining reserve balances also incorporates the Treasury’s monetary accounts, which reflect the Treasury’s holdings of gold, currency, and coin as well as its issuance of currency and coin. The first steps in incorporating these accounts into the reserve equation are to (1) add unmonetized gold and Treasury currency holdings (including coin) to both sides of the balance sheet and (2) subtract coin held by the Federal Reserve from both sides of the balance sheet. Certain items on the resulting balance sheet are then combined to give the remaining sources and uses of reserve balances.

Gold stock (a source, factor 2a) consists of the gold certificate account plus unmonetized gold. Currency in circulation (a use, factor 4) consists of Federal Reserve notes and Treasury currency outstanding less coin and currency held by the Treasury and coin held by Federal Reserve Banks. (Federal Reserve notes held by Reserve Banks are already netted out in the consolidated balance sheet of the Reserve Banks.) Another use, Treasury cash holdings (factor 5), consists of unmonetized gold plus coin and currency held by the Treasury. (Because coin and currency held by the Treasury are netted out of currency in circulation, they must be included in this use of reserve funds.)

Table A.2

Reserve equation, June 29, 1994

Weekly averages, millions of dollars

<i>Factor</i>	<i>Week ending June 29, 1994</i>	<i>Change from week ending June 30, 1993</i>
Sources (factors supplying reserve funds)	428,927	27,070
1. Reserve Bank credit	387,351	26,280
a. Security holdings	353,993	26,570
b. Loans	385	-2
c. Float	535	-105
d. Other assets	32,439	-184
2. Monetary reserves		
a. Gold stock	11,052	-5
b. Special drawing rights certificate account	8,018	0
3. Treasury currency outstanding	22,507	796
<i>LESS:</i>		
Uses other than reserve balances (factors absorbing reserve funds)	404,126	28,485
4. Currency in circulation	379,126	36,280
5. Treasury cash holdings	355	-93
6. Deposits, other than reserve balances, with Federal Reserve Banks	13,887	-9,159
a. Treasury deposits	7,561	-8,695
b. Foreign deposits	182	-36
c. Service-related balances and adjustments	5,870	-410
d. Other deposits	274	-18
7. Miscellaneous accounts, liabilities, and capital	10,758	1,457
<i>EQUALS:</i>		
8. Reserve balances with Federal Reserve Banks	24,801	-1,415
<i>PLUS:</i>		
9. Vault cash used to satisfy reserve requirements	33,571	2,539
<i>EQUALS:</i>		
10. Total reserves	58,372	1,124
a. Nonborrowed reserves	57,804	867
b. Borrowed reserves	568	257

Sources of Reserve Funds

When the source factors increase, they provide reserve funds. For example, an increase in factor 1, Reserve Bank credit—composed of the System's holdings of securities, discount window loans, Federal Reserve float, and other assets—would augment reserve balances if all other items in the reserve equation stayed the same. A decrease in Reserve Bank credit (or any other source factor) would reduce reserve balances, other things being unchanged.

Reserve Bank credit is the largest factor on the sources side of the reserve equation, as table A.2 shows: By far the most important component of Reserve Bank credit is the System's portfolio of securities (factor 1a), which accounted for around 90 percent of Reserve Bank credit as of June 29, 1994. Securities holdings are the principal factor in the reserve equation over which the Federal Reserve has direct control. Requests to borrow reserves at the discount window—another component of Reserve Bank credit—take place at the initiative of depository institutions.

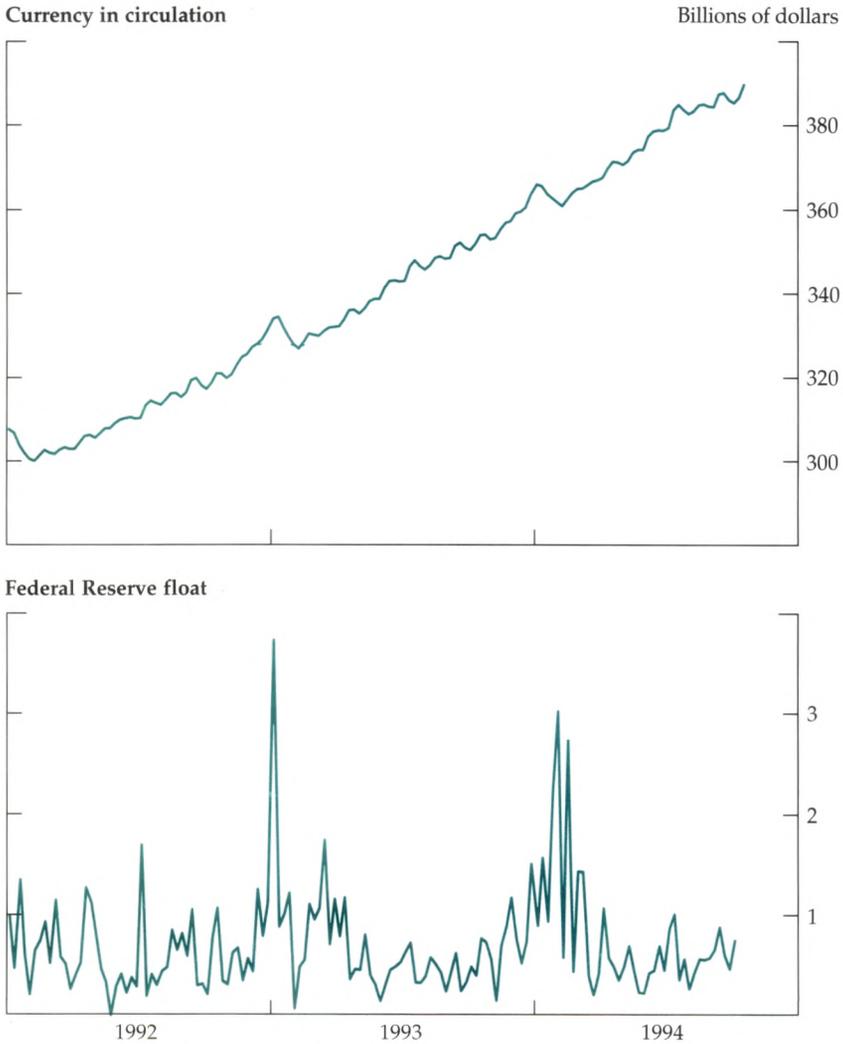
The significance of the float component (factor 1c) hinges not so much on the total amount of reserve funds it might provide, which is usually small compared with other components of Reserve Bank credit, as on the size and frequency of changes in its level. Float sometimes varies erratically from day to day, especially in winter, when bad weather may hinder the shipment of checks. Because of this volatility, it can be difficult to predict.

Uses of Reserve Funds

An increase in any of the use factors other than reserve balances (factors 4, 5, 6, or 7) absorbs funds that otherwise could be held as reserve balances. For example, if other items were unchanged, a rise in currency in circulation (factor 4) would be accompanied by a decline in reserve balances, as depository institutions drew down such accounts to pay the Federal Reserve for currency received from the System.

Currency in circulation is the largest single factor absorbing potential reserve funds. The public's demands for currency depend principally on the volume of spending, which varies with both long-run growth and cyclical movements of the U.S. economy. However, some evidence suggests that a substantial share of total currency outstanding is held outside the United States. Foreign demands for U.S. currency appear to increase in times of political and economic uncertainty abroad. Seasonal swings in demands for currency are also sizable, especially around major holidays (see chart A.1). In the last two months of a year, the increase in currency in circulation absorbs several billion dollars of reserves. In the following two months, much of this bulge returns from circulation. One of the original reasons for creating the Federal Reserve System was

Chart A.1
**Seasonal variation in currency in circulation
 and Federal Reserve float**



Note. Weekly averages of daily data.

to provide a means of accommodating such seasonal increases in the public's currency holdings (by supplying reserve funds) and to avoid the often undesirable contraction of bank reserves and deposits that would otherwise occur.

Both Treasury deposits (factor 6a) and service-related balances and adjustments of depository institutions (factor 6c) also absorb potential reserve funds. Week-to-week changes in these items can be sizable even though their levels are relatively low.

Total Reserves

Reserve balances with Federal Reserve Banks (factor 8) constitute only one component of the total reserves available to depository institutions;

vault cash (factor 9) must be added to reserve balances to derive total reserves (line 10 in table A.2). Vault cash held during the previous computation period is eligible to satisfy reserve requirements in the current reserve maintenance period. However, not all such vault cash is actually counted as reserves. Many institutions hold vault cash in excess of their reserve requirements; such surplus holdings in the lagged computation period are not included in the vault cash component of total reserves (factor 9), which consists only of that portion of vault cash held during the previous computation period that is used to satisfy reserve requirements in the current maintenance period.⁴ Total reserves increased \$1,124 million from June 29, 1993, to June 29, 1994; nonborrowed reserves increased \$867 million, while borrowing from the Federal Reserve by depository institutions increased \$257 million. ■

4. Before November 12, 1992, vault cash that was held two computation periods before the current maintenance period was used to satisfy current period reserve requirements. The lag has been shortened to smooth fluctuations in required reserve balances.

Federal Reserve Regulations

<i>Regulation</i>	<i>Subject</i>	<i>Purpose</i>
A	Extensions of Credit by Federal Reserve Banks	Governs borrowing by depository institutions at the Federal Reserve discount window
B	Equal Credit Opportunity	Prohibits lenders from discriminating against credit applicants, establishes guidelines for gathering and evaluating credit information, and requires written notification when credit is denied
C	Home Mortgage Disclosure	Requires certain mortgage lenders to disclose data regarding their lending patterns
D	Reserve Requirements of Depository Institutions	Sets uniform requirements for all depository institutions to maintain reserve balances either with their Federal Reserve Bank or as cash in their vaults
E	Electronic Funds Transfers	Establishes the rights, liabilities, and responsibilities of parties in electronic funds transfers and protects consumers when they use such systems
F	Limitations on Interbank Liabilities	Prescribes standards to limit the risks posed by obligations of insured depository institutions to other depository institutions

<i>Regulation</i>	<i>Subject</i>	<i>Purpose</i>
G	Securities Credit by Persons other than Banks, Brokers, or Dealers	Governs extension of credit by parties other than banks, brokers, or dealers to finance the purchase or the carrying of margin securities; see also regulations T, U, and X
H	Membership of State Banking Institutions in the Federal Reserve System	Defines the requirements for membership by state-chartered banks in the Federal Reserve System and establishes minimum levels for the ratio of capital to assets to be maintained by state member banks
I	Issue and Cancellation of Capital Stock of Federal Reserve Banks	Sets forth stock-subscription requirements for all banks joining the Federal Reserve System
J	Collection of Checks and Other Items by Federal Reserve Banks and Funds Transfers through Fedwire	Establishes procedures, duties, and responsibilities among (1) Federal Reserve Banks, (2) the senders and payors of checks and other items, and (3) the senders and recipients of wire transfers of funds
K	International Banking Operations	Governs the international banking operations of U.S. banking organizations and the operations of foreign banks in the United States
L	Management Official Interlocks	Restricts the management relationships that an official in one depository institution may have with other depository institutions
M	Consumer Leasing	Implements the consumer leasing provisions of the Truth in Lending Act by requiring meaningful disclosure of leasing terms

<i>Regulation</i>	<i>Subject</i>	<i>Purpose</i>
N	Relations with Foreign Banks and Bankers	Governs relationships and transactions between Federal Reserve Banks and foreign banks, bankers, or governments
O	Loans to Executive Officers, Directors, and Principal Shareholders of Member Banks	Restricts credit that a member bank may extend to its executive officers, directors, and principal shareholders and their related interests
P	Minimum Security Devices and Procedures for Federal Reserve Banks and State Member Banks	Sets requirements for a security program that state-chartered member banks must establish to discourage robberies, burglaries, and larcenies
Q	Prohibition against Payment of Interest on Demand Deposits	Prohibits member banks from paying interest on demand deposits (for example, checking accounts)
R	Relationships with Dealers in Securities under Section 32 of the Banking Act of 1933	Restricts employment relations between securities dealers and member banks to avoid conflict of interest, collusion, or undue influence on member bank investment policies or advice to customers
S	Reimbursement to Financial Institutions for Assembling or Providing Financial Records	Establishes rates and conditions for reimbursement to financial institutions for providing customer records to a government authority
T	Credit by Brokers and Dealers	Governs extension of credit by securities brokers and dealers, including all members of national securities exchanges; see also regulations G, U, and X

<i>Regulation</i>	<i>Subject</i>	<i>Purpose</i>
U	Credit by Banks for Purchasing or Carrying Margin Stocks	Governs extension of credit by banks to finance the purchase or the carrying of margin securities; see also regulations G, T, and X
V	Loan Guarantees for Defense Production (Dormant)	Facilitates the financing of contracts deemed necessary to national defense production
W	Vacant	
X	Borrowers of Securities Credit	Extends to borrowers who are subject to U.S. laws the provisions of regulations G, T, and U for obtaining credit within or outside the United States for the purpose of purchasing securities
Y	Bank Holding Companies and Change in Bank Control	Governs the bank and nonbank expansion of bank holding companies, the divestiture of impermissible nonbank interests, and the acquisition of a bank by individuals
Z	Truth in Lending	Prescribes uniform methods for computing the cost of credit, for disclosing credit terms, and for resolving errors on certain types of credit accounts
AA	Unfair or Deceptive Acts or Practices	Establishes consumer complaint procedures and defines unfair or deceptive practices in extending credit to consumers
BB	Community Reinvestment	Implements the Community Reinvestment Act and encourages banks to help meet the credit needs of their communities

<u>Regulation</u>	<u>Subject</u>	<u>Purpose</u>
CC	Availability of Funds and Collection of Checks	Governs the availability of funds deposited in checking accounts and the collection and return of checks
DD	Truth in Savings	Requires depository institutions to provide disclosures to enable consumers to make meaningful comparisons of deposit accounts
EE	Netting Eligibility for Financial Institutions	Defines financial institutions to be covered by statutory provisions regarding netting contracts—that is, contracts in which the parties agree to pay or receive the net, rather than the gross, payment due

Glossary of Terms

THIS GLOSSARY gives basic definitions of terms used in the text. Readers seeking more comprehensive explanations may want to consult sources listed in "Selected Readings" in this volume and textbooks in economics, banking, and finance.

- **agreement corporation** Corporation chartered by a state to engage in international banking; so named because the corporation enters into an "agreement" with the Board of Governors to limit its activities to those permitted an Edge Act corporation.

automated clearinghouse (ACH) Electronic clearing and settlement system for exchanging electronic transactions among participating depository institutions; such electronic transactions are substitutes for paper checks and are typically used to make recurring payments such as payroll or loan payments. The Federal Reserve Banks operate an automated clearinghouse, as do some private-sector firms.

- **Bank for International Settlements (BIS)** International organization established in 1930 and based in Basle, Switzerland, that serves as a forum for central banks for collecting information, developing analyses, and cooperating on a wide range of policy-related matters.

bank holding company Company that owns, or has controlling interest in, one or more banks. A company that owns more than one bank is known as a multibank holding company. (A bank holding company may also own another bank holding company, which in turn owns or controls a bank; the company at the top of the ownership chain is called the top holder.) The Board of Governors is responsible for regulating and supervising bank holding companies, even if the bank owned by the holding company is under the primary supervision of a different federal agency (the Comptroller of the Currency or the Federal Deposit Insurance Corporation).

banking organization A top holder bank holding company (consolidated to include all of its subsidiary banks and nonbank subsidiaries) or an independent bank (a bank that is not owned or controlled by a bank holding company).

bank regulation Actions to make, issue, and enforce specific rules and regulations governing the structure and conduct of banking, under the authority of legislation.

bank supervision Oversight of individual banks to ensure that they are operated prudently and in accordance with applicable statutes and regulations.

Board of Governors Central, governmental agency of the Federal Reserve System, located in Washington, D.C., and composed of seven members, who are appointed by the President and confirmed by the Senate. The Board of Governors is responsible for domestic and international economic analysis; with other components of the System, for the conduct of monetary policy; for supervision and regulation of certain banking organizations; for operation of much of the nation's payments system; and for administration of most of the nation's laws that protect consumers in credit transactions.

book-entry securities Securities that are recorded in electronic records, called book entries, rather than as paper certificates. Ownership of U.S. government book-entry securities is transferred over Fedwire. (*Compare* **definitive securities**.)

borrowed reserves Reserves that eligible depository institutions obtain by borrowing from the Federal Reserve through the discount window.

■ **Call Report** Informal name for Report of Condition and Income.

capital In banking, the funds invested in (as opposed to deposited in) a bank.

capital market The market in which corporate equity and longer-term debt securities (those maturing in more than one year) are issued and traded. (*Compare* **money market**.)

cash Currency plus coin.

central bank Principal monetary authority of a nation, which performs several key functions, including issuing currency and regulating the supply of credit in the economy. The Federal Reserve is the central bank of the United States.

check clearing The movement of a check from the depository institution at which it was deposited back to the institution on which it was written, the movement of funds in the opposite direction, and the corresponding credit and debit to the involved accounts. The Federal Reserve operates a nationwide check-clearing system.

check truncation Practice of holding a paper check at the bank at which it was deposited (or at an intermediary bank) and electronically forwarding the essential information on the check to the bank on which it was written. A truncated check is not returned to the writer.

clearing General term that may refer to check clearing or to the process of matching trades between the sellers and buyers of securities and other financial instruments and contracts.

commercial bank Bank that offers a broad range of deposit accounts, including checking, savings, and time deposits, and extends loans to individuals and businesses. Commercial banks can be contrasted with investment banking firms, such as brokerage firms, which generally are involved in arranging for the sale of corporate or municipal securities. (*Also compare savings bank.*)

commercial paper Short-term, unsecured promissory note issued by a commercial firm, a financial company, or a foreign government.

Consumer Advisory Council Statutory group composed of thirty members who represent the interests of a broad range of consumers and creditors. The council meets with the Board of Governors three times a year on matters concerning consumers and the consumer protection laws administered by the Board.

corporate bond Interest-bearing or discounted debt obligation issued by a private corporation rather than by a government or a government agency.

correspondent bank Bank that accepts the deposits of, and performs services for, another bank (called a respondent bank); in most cases, the two banks are in different cities.

credit aggregate A term sometimes used instead of debt aggregate.

credit union Financial cooperative organization of individuals who have a common bond, such as place of employment or residence or membership in a labor union. Credit unions accept deposits from members, pay interest (in the form of dividends) on the deposits out of earnings, and use their funds mainly to provide consumer installment loans to members.

currency Paper money.

- **debt aggregate** Term used informally for domestic nonfinancial sector debt, which is an aggregate measure through which the Federal Reserve monitors debt in the economy; includes outstanding credit market debt of federal, state, and local governments and of private nonfinancial sectors (including mortgages and other kinds of consumer credit and bank loans, corporate bonds, commercial paper, bankers acceptances, and other debt instruments).

definitive securities Securities that are recorded on engraved paper certificates payable to the bearers or to specific, registered owners. (*Compare* **book-entry securities**.)

demand deposit A deposit that may be withdrawn at any time without prior written notice to the depository institution. A checking account is the most common form of demand deposit.

depository institution Financial institution that obtains its funds mainly through deposits from the public; includes commercial banks, savings and loan associations, savings banks, and credit unions. (Sometimes called a depository intermediary.)

discounting Practice of deducting the interest on a loan from the principal amount before giving the borrowed funds to the borrower; the borrower receives the principal amount less the interest due over the term of the loan but repays the principal amount.

discount rate Interest rate at which an eligible depository institution may borrow funds, typically for a short period, directly from a Federal Reserve Bank. The law requires that the board of directors of each Reserve Bank establish the discount rate every fourteen days subject to the approval of the Board of Governors.

discount window (the window) Figurative expression for Federal Reserve facility for extending credit directly to eligible depository institutions (those that hold transaction deposits or nonpersonal time deposits); so named because in the early days of the Federal Reserve System, bankers would come to a Reserve Bank teller window to obtain credit.

discount window credit Credit extended by a Federal Reserve Bank to an eligible depository institution. All discount window borrowing must be secured by collateral.

- **adjustment credit** Discount window credit extended to help depository institutions handle temporary liquidity problems arising from short-term fluctuations in assets and liabilities.
- **seasonal credit** Discount window credit, typically extended to small depository institutions that have difficulty raising funds in national money markets, to help meet temporary needs for funds resulting from regular, seasonal fluctuations in loans and deposits.
- **extended credit** Discount window credit extended to help depository institutions resolve longer-term liquidity problems resulting from exceptional circumstances.

Domestic Trading Desk (the Desk) Trading desk at the Federal Reserve Bank of New York through which open market purchases and sales of government securities and certain other securities are made.

- **easing** Federal Reserve action to increase the amount of credit available to the public through the banking system; undertaken when the economy needs to be stimulated. (*Compare* **tightening**.)

Edge Act corporation Corporation chartered by the Federal Reserve to engage in international banking. The Board of Governors acts on applications to establish Edge Act corporations and also examines the corporations and their subsidiaries. Named after Senator Walter Edge of New Jersey, who sponsored the original legislation to permit formation of such organizations. (*Compare* **agreement corporation**.)

elastic currency Currency that can, by the actions of the central monetary authority, expand or shrink in amount as economic conditions warrant.

electronic funds transfer (EFT) Transfer of funds electronically rather than by check or cash. The Federal Reserve's Fedwire and automated clearinghouse services are EFT systems.

Eurocurrency deposits A generic term referring to deposits in a bank located in a country other than the one of issue of the currency in which the deposit is denominated. Despite its name, not all Eurocurrency is money deposited in European banking offices or denominated in European currencies.

Eurodollar deposits Dollar-denominated deposits in banks and other financial institutions outside the United States; includes deposits at banks not only in Europe, but in all parts of the world.

exchange market intervention Purchase or sale of the currencies of other nations by a central bank for the purpose of influencing foreign exchange rates or maintaining orderly foreign exchange markets.

- **Federal Advisory Council** Advisory group made up of one representative (in most cases a banker) from each of the twelve Federal Reserve Districts. Established by the Federal Reserve Act, the council meets periodically with the Board of Governors to discuss business and financial conditions and to make recommendations.

federal agency securities Interest-bearing obligations issued by certain federal and federally sponsored agencies, including the Federal Home Loan Banks, the Federal Farm Credit Banks, the Federal National Mortgage Association, and the Tennessee Valley Authority. Some federal agency securities are backed by the U.S. government, while others are backed only by the issuing agency.

Federal Financial Institutions Examination Council (FFIEC) Group of representatives of the federal banking regulatory agencies—the Board of Governors, the Office of Thrift Supervision, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the National Credit Union Administration—established to maintain uniform standards for examining and supervising federally insured depository institutions, bank holding companies, and savings and loan holding companies.

federal funds Short-term transactions in immediately available funds between depository institutions and certain other institutions that maintain accounts with the Federal Reserve; usually not collateralized.

federal funds rate Rate charged by a depository institution on an overnight sale of federal funds to another depository institution; rate may vary from day to day and from bank to bank.

Federal Open Market Committee (FOMC, or the Committee)

Twelve-member committee made up of the seven members of the Board of Governors; the president of the Federal Reserve Bank of New York; and, on a rotating basis, the presidents of four other Reserve Banks. The FOMC meets eight times a year to set Federal Reserve guidelines regarding the purchase and sale of government securities in the open market as a means of influencing the volume of bank credit and money in the economy. It also establishes policy relating to System operations in the foreign exchange markets.

Federal Reserve Act of 1913 Federal legislation that established the Federal Reserve System.

Federal Reserve Bank One of the twelve operating arms of the Federal Reserve System, located throughout the nation, that together with their twenty-five Branches carry out various System functions, including operating a nationwide payments system, distributing the nation's currency and coin, supervising and regulating member banks and bank holding companies, and serving as banker for the U.S. Treasury.

Federal Reserve District (Reserve District, or District) One of the twelve geographic regions served by a Federal Reserve Bank.

Federal Reserve float Float is checkbook money that appears on the books of both the check writer (the payor) and the check receiver (the payee) while a check is being processed. Federal Reserve float is float present during the Federal Reserve's check-collection process. To promote efficiency in the payments system and provide certainty about the date that deposited funds will become available to the receiving depository institution (and the payee), the Federal Reserve credits the reserve accounts of banks that deposit checks according to a fixed schedule. However, processing certain checks and collecting funds from the banks on which these checks are written may take more time than the schedule allows. Therefore, the accounts of some banks may be credited before the Federal Reserve is able to collect payment from other banks, resulting in Federal Reserve float.

Federal Reserve note Currency issued by the Federal Reserve. Nearly all the nation's circulating currency is in the form of Federal Reserve notes, which are printed by the Bureau of Engraving and Printing, a part of the U.S. Department of the Treasury. Federal Reserve notes are, by law, obligations of the U.S. government.

Federal Reserve Regulatory Service Monthly subscription service that details all statutes and regulations for which the Federal Reserve has responsibility and that keeps subscribers informed of all interpretations, Board of Governors rulings, staff opinions and commentaries, and procedural rules under which the Board operates.

Federal Reserve System The central bank of the United States, created by Congress and made up of a seven-member Board of Governors in Washington, D.C., twelve regional Federal Reserve Banks, and their twenty-five Branches.

Fedwire Electronic funds transfer network operated by the Federal Reserve. Fedwire is usually used to transfer large amounts of funds and U.S. government securities from one institution's account at the Federal Reserve to another institution's account. It is also used by the U.S. Department of the Treasury and other federal agencies to collect and disburse funds.

financial institution Institution that uses its funds chiefly to purchase financial assets, such as loans or securities (as opposed to tangible assets, such as real estate). Financial institutions can be separated into two major groups according to the nature of the principal claims they issue: nondepositories (sometimes called nondepository intermediaries), such as life insurance and property-casualty insurance companies and pension funds, whose claims are the policies they sell or their promise to provide income after retirement; and depository institutions (also called depository intermediaries), such as commercial banks, savings and loan associations, savings banks, and credit unions, which obtain funds mainly by accepting deposits from the public.

fiscal agency services Services performed by the Federal Reserve Banks for the U.S. government, including maintaining accounts for the U.S. Department of the Treasury, paying checks drawn on the Treasury, and selling and redeeming savings bonds and other government securities.

fiscal policy Federal government policy regarding taxation and spending, set by Congress and the Administration.

flexible exchange rates Arrangements in which the rate of exchange between countries' currencies (the foreign exchange rate) is allowed to fluctuate in response to market forces of supply and demand.

foreign currency operations Transactions in the foreign exchange markets involving the purchase of the currency of one nation with that of another. Also called foreign exchange transactions.

Foreign Exchange Desk Trading desk at the Federal Reserve Bank of New York through which transactions in the foreign exchange markets are conducted. The desk undertakes operations for the account of the Federal Open Market Committee and, as agent, for the U.S. Department of the Treasury and for the central banks of other nations.

foreign exchange markets Markets in which foreign currencies are purchased and sold.

foreign exchange rate Price of the currency of one nation in terms of the currency of another nation.

Full Employment and Balanced Growth Act of 1978 (Humphrey-Hawkins Act) Federal legislation that, among other things, specifies the primary objectives of U.S. economic policy—maximum employment, stable prices, and moderate long-term interest rates.

funds transfer Movement of funds between an originating financial institution and a receiving financial institution.

■ **government securities** Securities issued by the U.S. Treasury or federal agencies.

gross domestic product (GDP) Total value of goods and services produced by labor and property located in the United States during a specific period. In 1991, GDP became the U.S. government's primary measure of economic activity in the nation, replacing gross national product (GNP), which is the total value of goods and services produced by labor and property supplied by U.S. residents (but not necessarily located within the country).

Group of Seven (G-7) International group made up of seven leading industrial nations—Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States—whose finance ministers and central bank governors meet occasionally to discuss economic policy.

- **Humphrey–Hawkins Act** Informal name for the Full Employment and Balanced Growth Act of 1978, from the names of the act's original sponsors.
- **interest rate risk** Risk of gain or loss in the value of a portfolio as a result of changes in market interest rates.

International Monetary Fund (IMF) International organization established for lending funds to member nations to promote international monetary cooperation among nations, to facilitate the expansion and balanced growth of international trade, and to finance temporary balance of payments deficits, usually in conjunction with macroeconomic adjustment programs.

- **liquidity** Quality that makes an asset easily convertible into cash with relatively little loss of value in the conversion process. Sometimes used more broadly to encompass credit in hand and promises of credit to meet needs for cash.

liquidity risk In banking, risk that a depository institution will not have sufficient cash or liquid assets to meet borrower and depositor demand.

- **M1** Measure of the U.S. money stock that consists of currency held by the public, travelers checks, demand deposits, and other checkable deposits, including NOW (negotiable order of withdrawal) and ATS (automatic transfer service) account balances and share draft account balances at credit unions.
- M2** Measure of the U.S. money stock that consists of M1, certain overnight repurchase agreements and certain overnight Eurodollars, savings deposits (including money market deposit accounts), time deposits in amounts of less than \$100,000, and balances in money market mutual funds (other than those restricted to institutional investors).
- M3** Measure of the U.S. money stock that consists of M2, time deposits of \$100,000 or more at all depository institutions, term repurchase agreements in amounts of \$100,000 or more, certain term Eurodollars, and balances in money market mutual funds restricted to institutional investors.

margin requirement “Buying on margin” refers to buying stocks or securities with borrowed money (usually borrowed from a brokerage firm or bank). The margin requirement is the minimum amount (expressed as a percentage) the buyer must put up (rather than borrow). The Federal Reserve sets margin requirements.

market interest rates Rates of interest paid on deposits and other investments, determined by the interaction of the supply of and demand for funds in the money market.

matched sale–purchase transaction Transaction in which the Federal Reserve sells a government security to a dealer or a foreign central bank and agrees to buy back the security on a specified date (usually within seven days) at the same price (the reverse of a repurchase agreement). Such transactions allow the Federal Reserve to temporarily absorb excess reserves from the banking system, limiting the ability of banks to make new loans and investments.

member bank Depository institution that is a member of the Federal Reserve System. All federally chartered banks are automatically members of the System; state-chartered banks may elect to join the System.

monetary aggregates Aggregate measures through which the Federal Reserve monitors the nation’s monetary assets: M1, M2, and M3.

monetary policy A central bank’s actions to influence the availability and cost of money and credit, as a means of helping to promote national economic goals. Tools of monetary policy include open market operations, discount policy, and reserve requirements.

monetize Action by a central bank to purchase an object that is not money (for example, gold) that has the net effect of increasing bank reserves and permitting an increase in the money stock.

money Anything that serves as a generally accepted medium of exchange, a standard of value, and a means of saving or storing purchasing power. In the United States, currency (the bulk of which is Federal Reserve notes) and funds in checking and similar accounts at depository institutions are examples of money.

money market Figurative expression for the informal network of dealers and investors over which short-term debt securities are purchased and sold. Money market securities generally are highly liquid securities that mature in less than one year, typically less than ninety days. (*Compare* **capital market**.)

money stock Total quantity of money available for transactions and investment; measures of the U.S. money stock include M1, M2, and M3. (Also referred to as the money supply, or simply money.)

mutual savings bank Savings bank owned by its depositors (contrasted with a stock savings bank, which issues common stock to the public).

- **national bank** A commercial bank that is chartered by the Comptroller of the Currency; by law, national banks are members of the Federal Reserve System.

nominal interest rates Current stated rates of interest paid or earned. (*Compare real interest rates.*)

nonborrowed reserves Portion of total reserves in the banking system that have not been borrowed by depository institutions through the Federal Reserve's discount window. The Federal Reserve influences the supply of nonborrowed reserves by buying and selling securities through the Domestic Trading Desk.

nonmember bank Depository institution that is not a member of the Federal Reserve System; specifically a state-chartered commercial bank that has elected not to join the System.

nonpersonal time deposit Time deposit held by a depositor other than an individual (for example, a corporation).

- **official foreign exchange reserves** Assets denominated in foreign currencies held by the Federal Reserve and the U.S. Treasury.

open market Freely competitive market.

open market operations Purchases and sales of government securities and certain other securities in the open market, through the Domestic Trading Desk at the Federal Reserve Bank of New York as directed by the Federal Open Market Committee, to influence the volume of money and credit in the economy. Purchases inject reserves into the banking system and stimulate growth of money and credit; sales do the opposite.

outright transaction "Permanent" sale, purchase, or redemption of securities by the Federal Reserve in the open market, to adjust the supply of reserves in the economy over the longer run. (Contrasts with transactions intended to adjust the supply of reserves only temporarily, including **repurchase agreements** and **matched sale-purchase transactions.**)

over the counter Figurative term for the means of trading securities that are not listed on an organized stock exchange such as the New York Stock Exchange. Over-the-counter trading is done by broker-dealers who communicate by telephone and computer networks.

- **paper** General term for short-term debt instruments such as commercial paper.

payments system Collective term for mechanisms (both paper-backed and electronic) for moving funds, payments, and money among financial institutions throughout the nation. The Federal Reserve plays a major role in the nation's payments system through distribution of currency and coin, processing of checks, electronic transfer of funds, and the operation of automated clearinghouses that transfer funds electronically among depository institutions; various private organizations also perform payments system functions.

portfolio Collection of loans or assets, classified by type of borrower or asset. For example, a bank's portfolio might include loans, investment securities, and assets managed in trust; the loan portfolio might include commercial, mortgage, and consumer installment loans.

presentment fee Fee that a bank receiving a check imposes on the bank collecting payment.

- **real interest rates** Interest rates adjusted for the expected erosion of purchasing power resulting from inflation. Technically defined as nominal interest rates minus the expected rate of inflation.

reciprocal currency (swap) networks Short-term reciprocal arrangements among the Federal Reserve, the central banks of certain other nations, and the Bank for International Settlements. By drawing on a swap the Federal Reserve, in effect, can obtain foreign currency to purchase dollars in the foreign exchange markets, thereby increasing the demand for dollars and the foreign exchange value of the dollar. Likewise, the Federal Reserve can temporarily provide dollars to other central banks by means of swap arrangements.

Report of Condition and Income Financial report that all banks, bank holding companies, savings and loan associations, Edge Act and agreement corporations, and certain other types of organizations must file with a federal regulatory agency. Informally termed a Call Report.

repurchase agreement (RP, or repo) Transaction in which one party purchases, from another party, a government security for immediate delivery and simultaneously agrees to deliver back the security at a predetermined price on a specified future date; may be an overnight RP or a term RP. RPs allow the Federal Reserve to inject reserves temporarily into the banking system, by adding to the level of nonborrowed reserves, and to withdraw these reserves as soon as the need has passed.

required clearing balance Amount kept by a depository institution in an account at a Federal Reserve Bank, in addition to its required reserve balance, to ensure that it can meet its daily transaction obligations without overdrawing its required reserve account and thereby incurring a penalty. Required clearing balances earn credits that can be used to pay for services provided by the Federal Reserve.

required reserve ratio Percentage of reservable liabilities that depository institutions must set aside in the form of reserves.

reservable liabilities Bank deposits subject to reserve requirements. Transaction deposits, nonpersonal time deposits, and Eurocurrency liabilities are all reservable deposits; the required reserve ratios for nonpersonal time deposits and Eurocurrency liabilities were set at zero in December 1990.

reserve requirements Requirements set by the Board of Governors for the amounts that certain financial institutions must set aside in the form of reserves. Reserve requirements act as a control on the expansion of money and credit and may be raised or lowered within limits specified by law (lowering reserve requirements allows more bank lending and money growth; raising requirements, less lending and money growth).

reserves A depository institution's vault cash (up to the level of its required reserves) plus balances in its reserve account (not including funds applied to its required clearing balance).

- **required reserves** Funds that a depository institution is required to maintain as vault cash or on deposit with a Federal Reserve Bank; required amount varies according to required reserve ratios set by the Board of Governors and the volume of reservable liabilities held by the institution.
- **required reserve balance** Portion of its required reserves that a depository institution must hold in an account at a Federal Reserve Bank
- **excess reserves** Amount of reserves held by an institution in excess of its reserve requirement and required clearing balance.

■ **savings bank** Depository institution historically engaged primarily in accepting consumer savings deposits and in originating and investing in securities and residential mortgage loans; now may offer checking-type deposits and make a wider range of loans.

savings bond A nonmarketable debt obligation of the U.S. government, issued in denominations of \$50 to \$10,000, that is sold to the public through depository institutions and Federal Reserve Banks.

savings and loan association (s&l) Historically, depository institution that accepted deposits mainly from individuals and invested heavily in residential mortgage loans; although still primarily residential lenders, s&ls may now offer checking-type deposits and make a wider range of loans.

securities Paper certificates (definitive securities) or electronic records (book-entry securities) evidencing ownership of equity (stocks) or debt obligations (bonds).

settlement In banking, the process of recording the debit and credit positions of two parties in a transfer of funds. Also, the delivery of securities by a seller and the payment by the buyer.

shock Unanticipated or unusual event that has a noticeable impact on the economy or a financial system.

special drawing rights (SDRs) Type of international reserve asset created by the International Monetary Fund and allocated, on occasion, to the nations that are members of the IMF.

state bank Bank that is chartered by a state; may or may not be a member of the Federal Reserve System.

subsidiary Company in which another corporation (called the parent corporation) owns controlling stock interest or voting control.

System Open Market Account The Federal Reserve's portfolio of government (and certain other) securities from which it conducts open market operations under the overall supervision of the Manager of the System Open Market Account, subject to the policies and rules of the Federal Open Market Committee.

systemic risk Risk that a disruption (at a firm, in a market segment, to a settlement system, or in a similar setting) will cause widespread difficulties at other firms, in other market segments, or in the financial system as a whole.

- **thrift institution** A general term encompassing savings banks, savings and loan associations, and credit unions.

Thrift Institutions Advisory Council Group established by the Board of Governors after passage of the Depository Institutions Deregulation and Monetary Control Act of 1980 to obtain information and opinions on the needs and problems of thrift institutions. Made up of representatives of savings and loan associations, savings banks, and credit unions.

tightening Federal Reserve action to reduce the amount of credit available to the public through the banking system; undertaken when inflation is a concern. (*Compare* **easing**.)

time deposit Funds deposited in an account that has a fixed term to maturity and technically cannot be withdrawn before maturity without advance notice (for example, a certificate of deposit). Most time deposits earn interest.

transaction deposit A checking account or similar deposit account from which transfers of funds can be made. Demand deposit accounts, NOW (negotiable order of withdrawal) accounts, ATS (automatic transfer service) accounts, and credit union share draft accounts are examples of transaction accounts.

Treasury Direct Service provided to the U.S. Department of the Treasury whereby Federal Reserve Banks hold book-entry Treasury securities purchased by individuals.

Treasury tax and loan (TT&L) accounts Interest-bearing checking accounts that the U.S. Department of the Treasury maintains at depository institutions, primarily commercial banks, to hold deposits of federal taxes paid by businesses and individuals. The Federal Reserve Banks monitor the accounts and, on daily instructions from cash managers at the Treasury Department, transfer funds to the department's account at the Federal Reserve to cover the government's daily operating expenses.

- **U.S. Treasury securities** Interest-bearing obligations of the U.S. government issued by the U.S. Department of the Treasury as a means of borrowing money to meet government expenditures not covered by tax revenues. There are three types of marketable Treasury securities—bills, notes, and bonds.
 - **Treasury bill (T-bill)** Short-term U.S. Treasury security having a maturity of up to one year and issued in denominations of \$10,000 to \$1 million. T-bills are sold at a discount: Investors purchase a bill at a price lower than the face value (for example, the investor might buy a \$10,000 bill for \$9,700); the return is the difference between the price paid and the amount received when the bill is sold or it matures (if held to maturity, the return on the T-bill in the example would be \$300). T-bills are the type of security most frequently used in Federal Reserve open market operations.
 - **Treasury note** Intermediate-term security having a maturity of one to ten years and issued in denominations of \$1,000 or more. Notes pay interest semiannually, and the principal is payable at maturity.
 - **Treasury bond** Long-term security having a maturity of ten years or longer and issued in denominations of \$1,000 or more. A thirty-year bond is sometimes referred to as a long bond. Bonds pay interest semiannually, and the principal is payable at maturity.

The Treasury Department also issues several types of nonmarketable securities, including savings bonds.

- **vault cash** Cash kept on hand in a depository institution's vault to meet day-to-day business needs, such as cashing checks for customers; can be counted as a portion of the institution's required reserves.

- **wire transfer** Electronic transfer of funds; usually involves large dollar payments.

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