THE FEDERAL RESERVE SYSTEM

PURPOSES & FUNCTIONS

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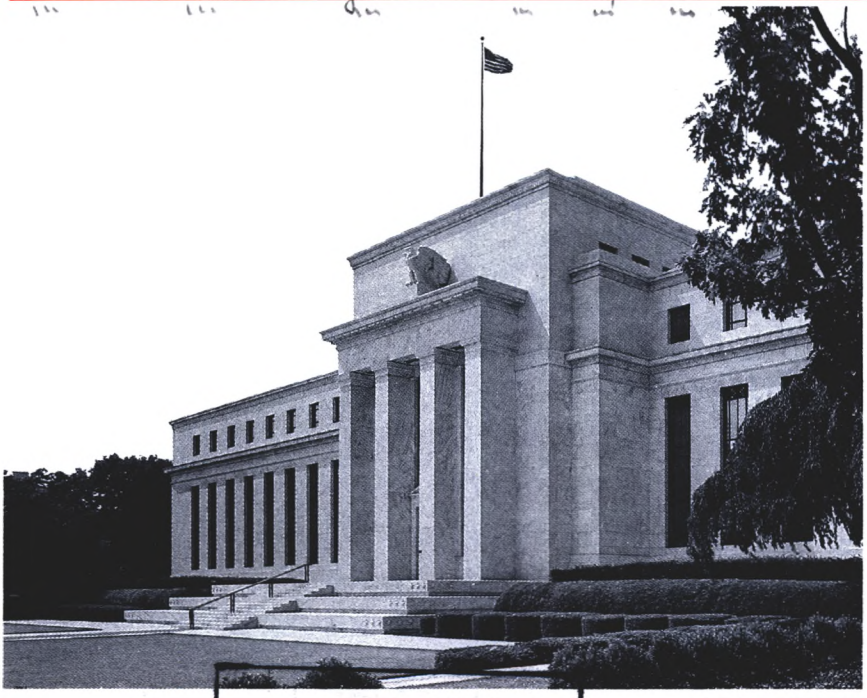

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Acknowledgments

This edition of *The Federal Reserve System: Purposes & Functions*, its seventh, has been completely rewritten by members of the staff of the Board of Governors of the Federal Reserve System to reflect the evolution over the past decade of Federal Reserve policies and practices in the monetary, regulatory, and other areas, given changes in the legislative framework and in the structure of the financial system. Stephen H. Axilrod, Staff Director for Monetary and Financial Policy, had principal responsibility for preparation of the book. Major contributions were made by Edward C. Ettin, Deputy Director, Division of Research and Statistics; Dale W. Henderson, Associate Director, Division of International Finance; Donald L. Kohn, Deputy Staff Director for Monetary and Financial Policy; David E. Lindsey, Deputy Associate Director, Division of Research and Statistics; Brian Madigan, Senior Economist, Division of Research and Statistics; Lorin S. Meeder, formerly Associate Director, Division of Federal Reserve Bank Operations; Samuel Pizer, Staff Adviser, Division of International Finance; Naomi P. Salus, Special Assistant to the Board, Office of Board Members; and Richard Spillenkothen, Assistant Director, Division of Banking Supervision and Regulation. Mendelle T. Berenson, Chief of the Economic Editing Section, Division of Research and Statistics, edited the manuscript; Nancy Steele, Economist, Office of Staff Director for Monetary and Financial Policy, verified the text; and Barry E. Huber, Design Manager, Graphic Communications Section, Division of Data Processing, was responsible for graphic design.

The Federal Reserve: Central Bank of the United States

The Federal Reserve System was created by the Federal Reserve Act, passed by the Congress in 1913 in order to provide for a safer and more flexible banking and monetary system. For about a hundred years before the creation of the Federal Reserve, periodic financial panics had led to failures of a large number of banks, with associated business bankruptcies and general economic contractions. Following the studies of the National Monetary Commission, established by the Congress a year after the particularly severe panic of 1907, several proposals were put forward for the creation of an institution designed to counter such financial disruptions. After considerable debate, the Federal Reserve System was established. Its original purposes were to give the country an elastic currency, provide facilities for discounting commercial credits, and improve the supervision of the banking system.

From the inception of the Federal Reserve System, it was clear that these original purposes were aspects of broader national economic and financial objectives. Over the years, stability and growth of the economy, a high level of employment, stability in the purchasing power of the dollar, and reasonable balance in transactions with foreign countries have come to be recognized as primary objectives of governmental economic policy. Such objectives have been articulated by the Congress in the Employment Act of 1946, and more recently in the Full Employment and Balanced Growth Act of 1978. The Federal Reserve Act has also been amended over the years to enable the System to function more effectively in helping to attain the nation's economic goals, with key amendments set forth in the Banking Act of 1935, the 1970 amendments to the Bank Holding Company Act, the International Banking Act of 1978, the Full Employment and Balanced Growth Act of 1978, and the Depository Institutions Deregulation and Monetary Control Act of 1980.

The Federal Reserve contributes to the attainment of the nation's economic and financial goals through its ability to influence money and credit in the economy. As the nation's central bank, it attempts to ensure that growth in money and credit over the long run is sufficient to encourage growth in the economy in line with its potential and with reasonable price stability. In the short run the Federal Reserve seeks to adapt its

policies to combat deflationary or inflationary pressures as they may arise. And as a lender of last resort, it has the responsibility for utilizing the policy instruments available to it in an attempt to forestall national liquidity crises and financial panics.

Because a sound financial structure is an essential ingredient of an effective monetary policy and a growing and prosperous economy, the Federal Reserve has also been entrusted with many supervisory and regulatory functions. Among other things, it is responsible for the amount of credit that may be used for purchasing or carrying equity securities; it regulates the foreign activities of all U.S. banks and the U.S. activities of foreign banks; it administers the laws that regulate bank holding companies; it supervises state-chartered member banks; and it establishes rules to ensure that consumers are adequately informed and treated fairly in certain credit transactions.

Most countries today have a central bank whose functions are broadly similar to those of the Federal Reserve. The Bank of England, for example, has been in existence since the end of the seventeenth century; the Bank of France was established in 1800 by Napoleon I; the Bank of Canada began operations in 1935. Each of these banks conducts its nation's monetary policy, although, depending on the historical, economic, and political circumstances surrounding its establishment and subsequent development, its specific responsibilities differ from the others', as do its role and its degree of independence within the government.

Role of the Federal Reserve in Government

It is often said that the United States has an independent central bank. This is true in the sense that decisions of the Federal Reserve do not have to be ratified by the President or by one of his appointees in the executive branch of the government. But the Federal Reserve must report to the Congress, and thereby to the people as a whole, on its policies. All appointments to the Board that governs the Federal Reserve System, including the designation of the Chairman and Vice Chairman from among the members, are made by the President by and with the consent of the Senate. In view of these circumstances and because the Federal Reserve works within the framework of the overall objectives of economic and financial policy established by the government, it is more accurate to characterize the System as "independent within government."

As it carries out its responsibilities, the Federal Reserve is in continual contact with other policymaking groups within the government. The

Chairman of the Board of Governors generally represents the Federal Reserve in such policy discussions. He appears before the relevant committees of the Congress to report on Federal Reserve policies, the System's views about the state of the economy, financial developments, and other matters. Under the Full Employment and Balanced Growth Act of 1978, twice a year he presents to the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Banking, Finance and Urban Affairs the System's monetary policy objectives, expectations about the performance of the economy, and the relationships of monetary objectives to the economic goals and policies of the administration and the Congress. The Chairman meets from time to time with the President of the United States and regularly confers with the Secretary of the Treasury and the Chairman of the Council of Economic Advisers. The Chairman is frequently asked to serve on government-wide policy bodies, such as the Depository Institutions Deregulation Committee.

In addition to serving in areas related primarily to domestic operations, the Chairman of the Board of Governors is a member of the National Advisory Council on International Monetary and Financial Problems of the U.S. government, which includes the heads of other relevant U.S. agencies, and he is also the alternate U.S. governor of the International Monetary Fund. As a member of the U.S. delegation to key international conferences, the Chairman also presents the central bank's views on matters of international financial and economic policy.

Other members of the Board of Governors also participate in governmental discussions of various domestic and international issues, ranging from the formulation of U.S. positions on such matters as reform of the international monetary system to proposals for restructuring U.S. financial regulations. Board members frequently testify before the Congress on a variety of issues of concern to the Federal Reserve. A member of the Board selected by the Chairman serves on the Federal Financial Institutions Examination Council, which also has representatives from the Federal Deposit Insurance Corporation, the Federal Home Loan Bank Board, the Office of the Comptroller of the Currency, and the National Credit Union Administration. This group is charged by the Congress with establishing more uniform examination standards for depository institutions. At scheduled intervals, the Board members meet with the members of the Council of Economic Advisers. A luncheon meeting with Treasury officials is generally held each week, attended, as availability permits, by the Chairman or Vice Chairman of the Board of Governors and perhaps another Board member, and by the Deputy Secretary of the Treasury or the Under Secretary of the Treasury for Monetary Affairs, as well as by senior staff of both institutions.

Members of the Board's staff are in close touch with their counterparts throughout the government. They have frequent, informal contacts with the staffs of such agencies as the Council of Economic Advisers, the Treasury, and the Office of Management and Budget on economic matters, and with those of the Treasury, the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the Federal Home Loan Bank Board, and the National Credit Union Administration on regulatory and legal matters.

Structure of the Federal Reserve System

Our nation's central bank is a complex organization, whose principal components are the Board of Governors of the Federal Reserve System, the Federal Open Market Committee, and the Federal Reserve Banks. The organization of the System is depicted in chart 1.1.

Board of Governors

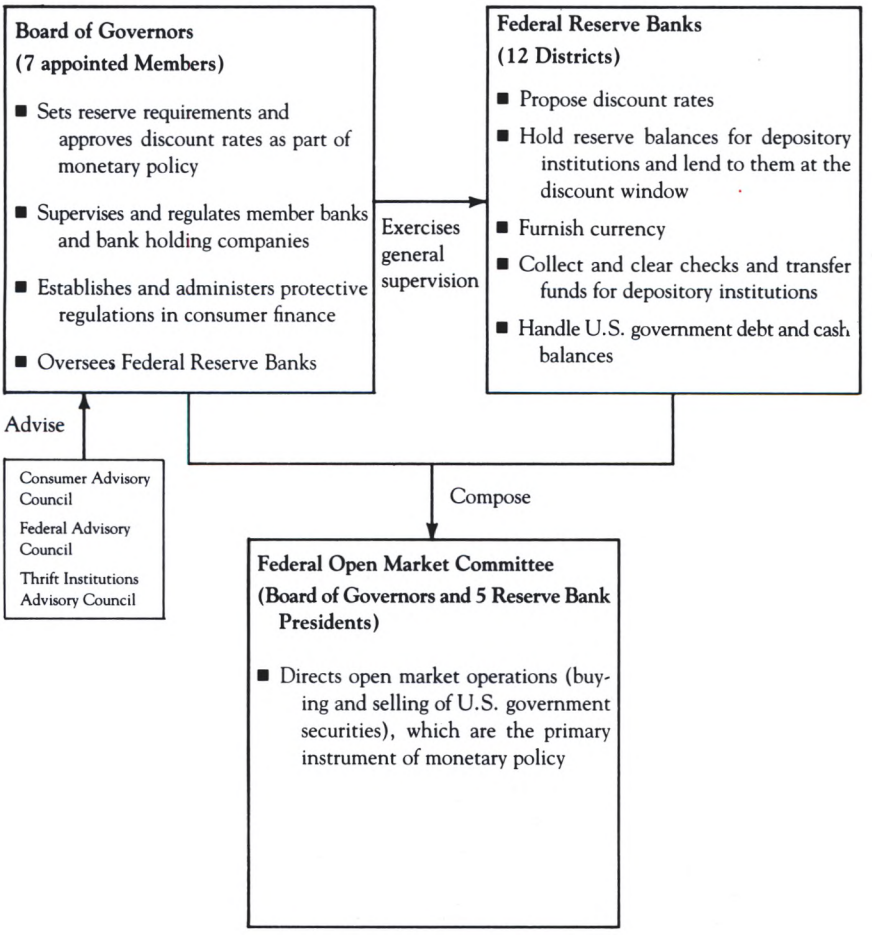
The apex of the Federal Reserve's organization is the Board of Governors in Washington. The Board's prime function is the formulation of monetary policy. In addition, the Board has broad supervisory and regulatory responsibilities over the activities of various banking institutions and the operations of the Federal Reserve Banks. The Board also has responsibilities in the area of the nation's payments mechanism and for federal consumer credit regulations.

The Board is an agency of the federal government. It consists of seven members appointed by the President of the United States and confirmed by the Senate. The full term of a Board member is fourteen years, and the seven terms are arranged so that one expires in every even-numbered year. A member may not be reappointed after having served a full term. The Chairman and the Vice Chairman of the Board are named for four-year terms by the President from among the Board members, and they may be redesignated as long as their terms as Board members have not expired. These designations are also subject to confirmation by the Senate.

The members of the Board constitute a majority of the Federal Open Market Committee (FOMC), which directs the System's open market operations and thereby the general course of monetary policy. In addition to its FOMC functions, the Board reviews and approves discount rate

actions of the Federal Reserve Banks and issues regulations governing the administration of the discount window at those Banks. The Board also may use reserve requirements as a monetary policy instrument by exercising its authority to vary certain reserve ratios of depository institutions within ranges prescribed by law.

Chart 1.1
Organization of the Federal Reserve System



The Board exercises broad supervisory authority over the operations of the twelve Federal Reserve Banks. This authority includes oversight of their activities in providing services to depository institutions and of their examination and supervision of certain banking institutions. Each of the Banks must submit its budget to the Board for approval. Certain expenditures—such as those for construction or major alterations of Bank buildings and for the salaries of the Banks' presidents and first vice presidents—are subject to the Board's specific approval. The Board also approves the appointments of the president and the first vice president of each Federal Reserve Bank.

The Board has supervisory and regulatory responsibilities over banks that are members of the Federal Reserve System, bank holding companies, bank mergers, international banking facilities in the United States, Edge act and agreement corporations, foreign activities of member banks, and activities of the U.S. branches and agencies of foreign banks. The Board also sets margin requirements, which limit the use of credit for purchasing or carrying securities. In addition, the Board plays a key role in assuring the smooth functioning and continued development of the nation's vast payments system. Another area of Board responsibility involves the implementation by regulation of major federal laws governing consumer credit such as the Truth in Lending Act, the Equal Credit Opportunity Act, and the Home Mortgage Disclosure Act.

The Board is required to submit a number of reports to the Congress, including an annual report on its operations and special reports twice each year on the state of the economy and the System's objectives for the growth of money and credit. The Board also makes available detailed statistics and other information about the System's activities through a variety of publications such as the monthly *Federal Reserve Bulletin.* Materials relating to the Board's regulatory functions are presented in another publication, the *Federal Reserve Regulatory Service.* The Board pays the expenses of carrying out its duties not out of funds appropriated by the Congress but out of assessments upon the Federal Reserve Banks. Each year a public accounting firm audits the Board's financial accounts. Those accounts are also subject to audit by the General Accounting Office.

Federal Open Market Committee

Open market operations are the principal instrument used by the Federal Reserve to implement national monetary policy. According to statute the Federal Open Market Committee is responsible for determining what

transactions the Federal Reserve will conduct in the open market. These transactions, conducted in government and federal agency securities, provide or absorb reserves of depository institutions. In addition to operations in the domestic securities market, the FOMC authorizes and directs operations in foreign exchange markets for major currencies.

The FOMC comprises the seven members of the Board of Governors and five Reserve Bank presidents, one of whom is the president of the Federal Reserve Bank of New York. The other Bank presidents serve one-year terms on a rotating basis. By statute the Committee determines its own organization, and by tradition it 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. The Committee annually determines its schedule of meetings and most recently has adopted a regular schedule of eight meetings per year in the Board's offices in Washington; in addition, telephone consultations or other meetings may be held as needed.

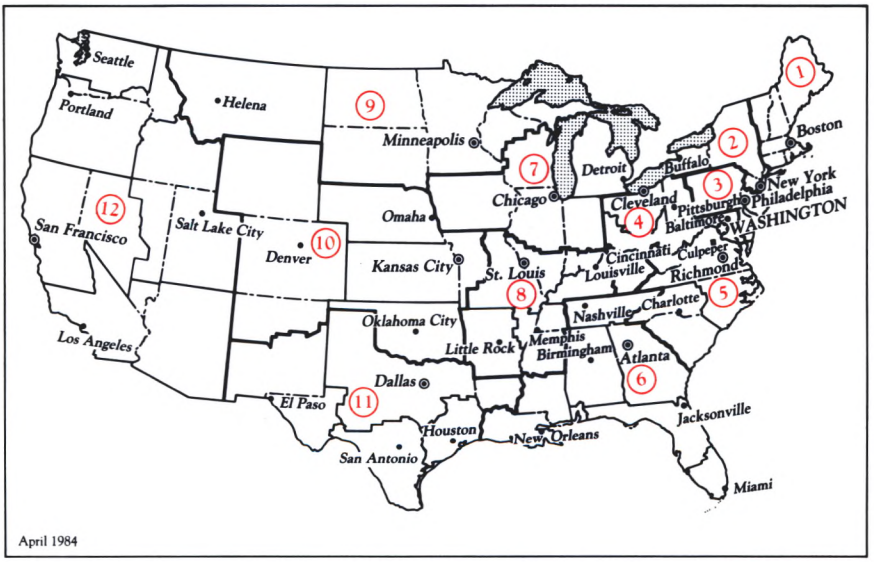
Federal Reserve Banks

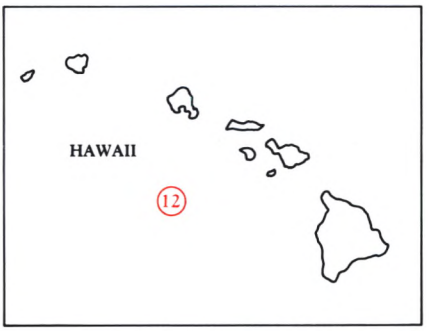
Other functions of the Federal Reserve System—including operation of the payments mechanism, distribution of coin and currency, examination of banks, and fiscal-agency functions for the Treasury—are implemented through a network of twelve Federal Reserve Banks located in Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas, and San Francisco. Branches of Reserve Banks have been established in twenty-five other cities. The Board's offices in Washington are a headquarters-type facility. The boundaries of the twelve Federal Reserve Districts and the locations of the various Reserve Banks and their Branches are shown on the accompanying map.

Each Reserve Bank has its own board, consisting of nine outside directors. As provided by law, three Class A directors, who represent member banks, and three Class B directors, who represent the public, are elected by the member banks in each Federal Reserve District. The Board of Governors appoints three Class C directors, who also represent the public, and it designates one of these three as chairman and another as deputy chairman of the Bank's board. No Class B or Class C director may be an officer, director, or employee of a bank, nor may Class C directors be stockholders of a bank. Each Branch of a Reserve Bank has its own board of directors, comprising five or seven members. The majority (three or

four, as the case may be) are appointed by the head-office directors, and the others by the Board of Governors.

The Federal Reserve System





LEGEND

- Boundaries of Federal Reserve Districts
- Boundaries of Federal Reserve Branch territories
- Board of Governors of the Federal Reserve System
- Federal Reserve Bank cities
- Federal Reserve Branch cities
- Federal Reserve Bank facility

The directors of each Reserve Bank oversee the operations of their Bank subject to the overall supervision of the Board of Governors; and, subject to approval by the Board, they establish the discount rates that their Bank charges on collateralized loans to depository institutions. The directors appoint, and recommend the salaries of, the Bank's president and first vice president, subject to final approval by the Board of Governors.

The Federal Reserve Banks derive their earnings primarily from interest on their proportionate share of the System's holdings of securities acquired through open market operations and, to a much lesser extent, from interest on System holdings of foreign currencies and on their loans to depository institutions. In addition, since 1981, earnings of the Federal Reserve Banks have included fees for various services that they provide to depository institutions; pricing of Federal Reserve services was mandated by the Depository Institutions Deregulation and Monetary Control Act of 1980.

Earnings of Federal Reserve Banks are allocated first to the payment of expenses (including assessments by the Board of Governors to defray its expenses), the statutory 6 percent dividend on Federal Reserve stock that member institutions are legally required to purchase, and any additions to surplus necessary to maintain each Reserve Bank's surplus equal to its paid-in capital stock. Remaining earnings are then paid into the U.S. Treasury. About 95 percent of the Reserve Banks' net earnings have been paid into the Treasury since the Federal Reserve System was established. In 1983, net System earnings totaled $15.0 billion, and payments to the U.S. Treasury amounted to $14.2 billion. Should a Reserve Bank be liquidated, its surplus—after all obligations had been met—would become the property of the U.S. government.

Member Banks

At the end of 1983, about 5,700 commercial banks—out of a total of nearly 15,000 in the country—were members of the Federal Reserve System. These member banks accounted for 70 percent of all commercial bank deposits and about 40 percent of the deposits at all depository institutions (commercial banks, savings banks, savings and loan associations, and credit unions). National banks, which are chartered by the Comptroller of the Currency, are required by law to be members of the System. Commercial banks chartered by any of the fifty states may elect to become members if they meet the requirements established by the

Board of Governors. The member banks own all the stock of the Reserve Banks and may vote for the three Class A and three Class B directors. However, ownership of stock does not carry with it the usual attributes of control and financial interest.

The Depository Institutions Deregulation and Monetary Control Act of 1980 subjects all depository institutions to the reserve requirements of the Federal Reserve System. Reserves must be maintained against transaction-type accounts, nonpersonal time deposits, and borrowings from banking offices abroad. At the end of 1983, in addition to the 5,700 member commercial banks, about 33,300 nonmember institutions were subject to System reserve requirements, including about 9,100 nonmember commercial banks, 400 foreign-related banking institutions, 150 Edge act and agreement corporations, and 23,700 thrift institutions—savings banks, savings and loan associations, and credit unions. Many smaller institutions whose reservable liabilities do not exceed an exempted amount have, by statute, zero reserve requirements. Depository institutions with deposit liabilities that are subject to reserve requirements, whether members or nonmembers, have access to the discount window. All depository institutions that are eligible for federal deposit insurance may use System services.

Advisory Committees

To help it deal with its complex and varied responsibilities, the System makes use of advisory and working committees. The Federal Reserve Act provides for a Federal Advisory Council consisting of one member from each Federal Reserve District. The board of directors of each Reserve Bank annually selects one council member, usually a prominent banker in the District. The council is required by law to meet in Washington at least four times a year. It confers with the Board of Governors on economic and banking developments and makes recommendations regarding the activities of the Federal Reserve System.

Another statutory advisory group is the Consumer Advisory Council, which usually meets with the Board of Governors four times each year. The council has thirty members. Some represent the interests of the financial industry and consumers, and some are academic and legal specialists in consumer matters.

After passage of the Depository Institutions Deregulation and Monetary Control Act of 1980, the Board of Governors established the Thrift Institutions Advisory Council, whose purpose is to provide information

and views on the special needs and problems of thrift institutions. This advisory group comprises representatives of savings banks, savings and loan associations, and credit unions.

Monetary Policy and the Economy

The basic goal of monetary policy, as noted in chapter 1, is to ensure that, over time, expansion in money and credit will be adequate for the long-run needs of a growing economy at reasonably stable prices. Over the shorter run, monetary policy is also conducted so as to combat cyclical inflationary or deflationary pressures.

Monetary policy is far from the only influence on the economy. Fiscal policy—that is, the policy of the federal government with respect to taxation and spending—has an important impact on demands for goods and services and on credit market conditions. In the private sector, the wage and price policies of business and labor affect the degree of inflationary pressures. Exogenous price shocks, such as the huge rises in oil prices of the 1970s or sharp increases in agricultural prices because of droughts, affect the overall price level. And policies of foreign countries, through their impact on demands for goods produced in the United States, on world commodity prices, or on international credit conditions, also influence our economy. Finally, expectations—for example, of inflation or of budget deficits—may also influence the economy and credit conditions by affecting the willingness to spend of businesses and consumers and the attitudes of borrowers and lenders.

How Monetary Policy Works: A Schematic Overview

Monetary policy encompasses actions taken by the Federal Reserve that affect the availability and cost of depository institutions' reserves and thereby influence overall monetary and credit conditions. These institutions are required to hold reserves in the form of cash in their vaults or of deposits at a Federal Reserve Bank equal to certain fractions of their various types of deposits; under current law, the bulk of required reserves is held against transaction deposits—that is, deposits that have unlimited checking privileges. The depository system as a whole can obtain reserves to support deposits as a consequence either of changes in the Federal Reserve's security portfolio brought about through open market operations

(described in chapter 3) or of borrowing by depository institutions at the Federal Reserve's discount window (described in chapter 4). The Federal Reserve influences the amount of reserves mainly by open market operations, the primary tool of monetary policy, but it also acts through adjustments to the discount rate (which affect the cost of borrowing) and on occasion changes in reserve requirement ratios.

How the effects of monetary policy actions are diffused through financial markets and the economy may be understood by envisioning a change in the demand for reserves (as influenced by actions of the public and depository institutions) relative to their supply (as influenced by the Federal Reserve). Suppose that there were a strong increase in the public's demand for money and credit generated by an economy that was starting to overheat. This would be reflected in an increase in the demand by depository institutions for reserves required to support the additional deposits, particularly transaction accounts, that businesses and consumers would need to finance the expansion in spending.

As these demands for reserves pressed against the supply of reserves, interest rates would tend to rise, at first especially in short-term markets, as institutions sought additional funds. Depository institutions, forced to compete more aggressively for the existing supply of reserves, would bid up interest rates in the federal funds market (the market in which institutions lend excess reserve balances to other institutions, mainly on an overnight basis); they would also sell off securities from their portfolios and offer higher yields on such managed liabilities as large negotiable time deposits. Depository institutions might also borrow more reserves from the Federal Reserve discount window in the process of making an orderly adjustment to the given supply of reserves that the Federal Reserve was providing at its own initiative through open market operations. As market interest rates rose, the Federal Reserve might also increase the discount rate so as to reduce the incentive for institutions to borrow the reserves at the discount window.

The rise in interest rates would work, over time, to hold the demand for reserves in line with supply. It would do so as the higher interest rates associated with the portfolio adjustments by depository institutions, including a stiffening of loan terms, reduced the public's demand for money and credit. The adjustment process would also affect financial and product markets more generally. For instance, longer-term interest rates would tend to rise, thereby restraining demand for investment goods, such as housing and plant and equipment. A rise in shorter-term consumer finance rates would work to restrain demand for consumer durable goods. The dollar would also tend to appreciate on exchange markets, thereby

inducing both U.S. and foreign residents to shift their spending away from U.S. goods and toward foreign goods. These adjustments would all take place with varying time lags, depending in part on expectations of various borrowers, lenders, and spenders; but in the end, restraint on reserves and money in the face of an inflationary upsurge in aggregate demand would act to keep the economy from overheating and would thereby limit upward pressures on interest rates.

If, in contrast to the process described above, the increased demand for money, credit, and reserves were accommodated by the Federal Reserve—by increasing reserves supplied through open market operations in line with demand—the initial upward pressure on interest rates might be relieved. But this relief would be only temporary. The ensuing rapid expansion in money would finance a surge in spending and raise expectations of inflation. The change in expectations, and the subsequent emergence of actual inflation, would sooner or later be reflected in higher market interest rates. Lenders would demand an inflation premium to protect the real value of their capital, and borrowers would become willing to pay it out of expected inflation-enlarged earnings. Under these conditions the rise in interest rates would, because of inflation, be greater than in the first example, in which money and reserves were restrained relative to emerging excessive demands.

The preceding examples illustrate the impact of an increase in the demand for reserves relative to supply if an economy began overheating. Opposite effects on interest rates would be felt should the economy weaken rather than overheat. As credit and money demands began to fall relative to the amount of reserves being supplied, interest rates would decline as depository institutions acquired financial assets with the surplus funds. Institutions would also take the opportunity to reduce borrowed reserves at the discount window. With a lag, these rate reductions and the associated depreciation of the dollar on exchange markets would, as reserve growth was maintained over time, tend to stimulate spending and demands for money and credit—which would in turn limit the declines of interest rates.

Guides for Monetary Policy

The interaction of the demand for and supply of reserves affects conditions in a wide range of financial markets. The impacts are transmitted to the reserve positions of depository institutions, to the money supply, to a variety of interest rates, to exchange rates, and to credit flows. Federal

Reserve actions affecting reserves influence all these financial variables in one degree or another; thus the issue arises as to which variables may best serve as guides to the Federal Reserve in implementing monetary policy—because they most consistently indicate whether policy is attuned to ultimate economic objectives.

Money-supply guides work most effectively when the ways the public holds cash and liquid balances are not being substantially affected by institutional and structural changes in financial markets. The example in the last section assumes the absence of such structural distortions so that the demand for money moves in close correspondence with changes in the aggregate demand for goods and services. Maintenance over time of reserve growth consistent with a money-supply guide helps to stabilize the economy at large and to keep inflationary, or deflationary, pressures in check in the face of changes in demands for money and credit.

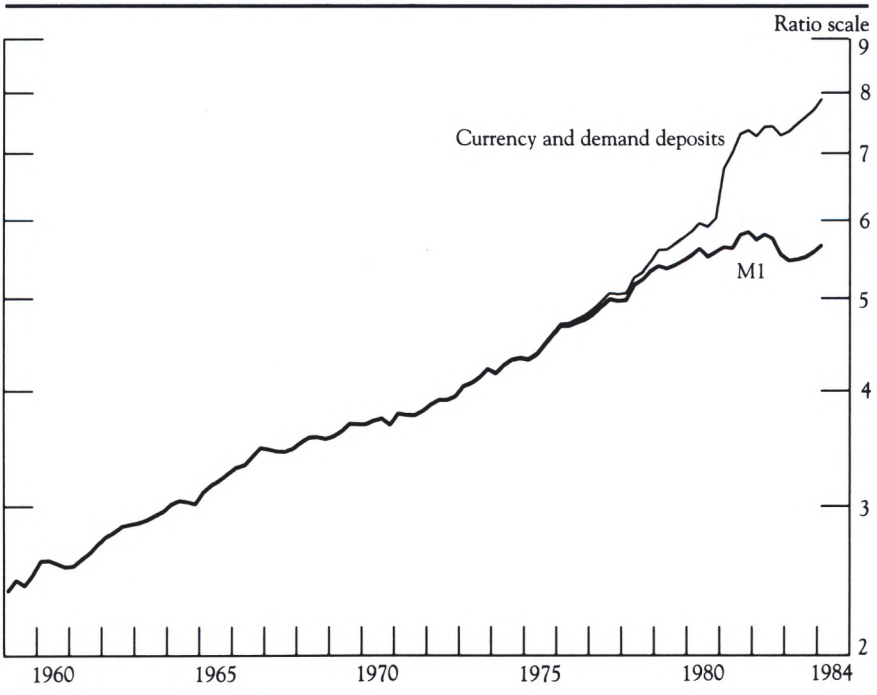
However, when institutional changes are under way, or when for other reasons substantial changes occur in the public's propensity to hold money relative to income—such as the emergence of precautionary cash demands in periods of economic disturbance—money-supply guides may become less effective. Institutional and other changes that substantially alter the demand for money relative to income are reflected in changes in the velocity or turnover of money (that is, in the ratio of nominal gross national product to the money stock) that are out of keeping with historical patterns. For instance, over a period of time after the introduction on a nationwide basis of interest-bearing savings accounts against which checks could be written (termed negotiable order of withdrawal, or NOW accounts) at the beginning of 1981, the public shifted a very large amount of funds out of demand deposits into the new accounts. As a result, the velocity of a transaction-money measure including essentially only currency and demand deposits rose very rapidly as a lower volume of demand deposits was being held in relation to given levels of income (see chart 2.1).

Because NOW accounts serve a transaction purpose, the measure of transaction money—M1—needed to be redefined to include such accounts. However, NOW accounts are also a repository for the public's longer-run savings, and to that extent they respond, in ways that may be quite different from the response of a purely transaction deposit, to such factors as changes in wealth, interest rate differentials among financial assets, and the overall propensity to save. Thus the behavioral characteristics of M1 were affected by the inclusion of assets that served broader functions for the public, beyond transaction needs. Such a structural change necessarily increases uncertainty in interpretation of a monetary aggregate,

at least until new patterns of behavior have had time to be established and recognized.

Uncertainties were particularly great in the latter part of 1982 and in 1983, when the velocity of M1 first declined much more than it usually does in the contractionary phase of an economic cycle and then rebounded less than is usual in the early quarters of an expansion. This change in the pattern may have reflected strong precautionary demands for cash in a period of particular economic uncertainty as well as the sharp decline in short-term market interest rates that occurred as the rate of inflation dropped off substantially; this decline in rates greatly lowered the cost—in terms of earnings forgone—of holding liquid balances, and also longer-term savings, in NOW accounts that were subject to a 5¼ percent interest ceiling. The introduction around the end of 1982 of two highly liquid

Chart 2.1
Velocity of M1, 1959–84



Quarterly data, seasonally adjusted.

deposit accounts bearing a market interest rate also contributed to uncertainties in interpretation. The new Super NOW account had unlimited transfers and was included with other transaction accounts in narrow money; a new money market deposit account offered limited transaction features and was appropriately included only in broad money, though it was competitive in some degree with transaction accounts in M1.

When institutional changes substantially affect money demand relative to income, rigid adherence to money targets will produce undesirable economic results. For example, restraint on reserves in the face of an upward shift in money demand relative to income generated by institutional changes would tighten money market and credit conditions inappropriately since no associated increase would have occurred in the public's demands for goods, services, and credit. Thus the associated rise in interest rates, and in the foreign exchange value of the dollar, would weaken economic activity instead of serving as a stabilizing force.

Under those circumstances, economic results would be more satisfactory if the Federal Reserve provided the reserves needed to support greater money growth rather than resisting the rise in money demand. As the supply of money was adjusted to a shift in demand occasioned by institutional change, interest rates, and also exchange rates, would tend to remain relatively stable, and such disturbances in money demand would not adversely affect spending behavior.

By contrast, when the demand for goods and services shifts—that is, when the public or the government changes its spending propensities at any given level of interest rates—the money supply is more effective as a target. An example of such a shift is an intended expansion in the federal government's budgetary deficit, generated either by a tax cut or by programs to increase governmental spending. Changes in demand for goods and services at given levels of interest rates may also be initiated in the private sector—by, for example, technological innovations or changes in attitudes related to inflationary or other expectations. When such shifts occur, holding interest rates stable by allowing money and credit aggregates to move in tandem with spending will offer no resistance to inflationary or contractionary forces in the economy.

The problems with interest rates as a guide to policy are seen most clearly under inflationary conditions. Inflation and the uncertainties associated with it distort the relationship between nominal interest rates and spending behavior. By and large, spending decisions are influenced more by real interest rates than by the nominal interest rates that can be influenced temporarily and at the margin by Federal Reserve policy. The real interest rate a borrower expects to pay on a particular loan is the

difference between the nominal rate charged and the rate of inflation the borrower expects over the life of the loan. But since expected rates of inflation are subjective and extremely difficult to measure, in an inflationary environment it is harder to discern the real interest rate that is associated with a given nominal interest rate and thus harder to predict the borrowing and spending behavior that will result from any particular level of nominal interest rates. Moreover, these relationships may be complicated further by the effects of taxes. Even without the distortions of inflation, the relationship between nominal interest rates and spending is extremely difficult to predict, so that a policy that aims at a particular nominal interest rate runs the risk of inadvertently contributing to the inflation or deflation that it is aimed at countering.

Even in periods of evident disturbances in money demand, when money market conditions or interest rates more broadly may seem to be desirable guides to policy, disturbances or shifts in the demands for goods and services are also likely to develop. As a result, despite uncertainties in money demand, the money supply will still be a relevant guide to monetary policy, though flexibility will be needed in setting and attaining monetary growth targets.

Because they perceive difficulties with both the money supply and interest rates as targets for monetary policy, some observers have suggested that the Federal Reserve aim at a particular nominal level of economic activity, presumably one consistent with attainment of reasonable price stability over time. The ultimate objectives of monetary and other public policies are, of course, economic growth, high and rising levels of employment, and reasonable price stability. But these objectives are influenced not only by monetary policy but also by fiscal policies, by wage, price, and spending policies in the private sector, and by economic developments abroad. In any event, monetary policy has only an indirect influence on the achievement of economic goals. Moreover, it is not adaptable to year-by-year targeting of the nation's income because lags between changes in the financial variables that are most directly influenced by policy and changes in economic activity are often relatively long and vary with economic conditions and expectations. The contribution of monetary policy itself to the nation's ultimate economic goals is best indicated by the behavior of those financial aggregates, such as monetary aggregates, that are reasonably subject to control or at least to strong influence via the availability and cost of reserves to the depository system; but that behavior must be assessed in light of structural changes in the financial system that affect the public's preferences for and use of various forms of money and credit.

Information on Monetary Policy and Its Relation to the Economy

While the formulation and implementation of policy necessarily entail evaluation of all aspects of the financial system, the real economy, and international economic and financial conditions, since the mid-1970s the Federal Reserve has also been announcing annual objectives for the growth rates of the monetary and credit aggregates. The current provisions of the Federal Reserve Act, as amended by the Full Employment and Balanced Growth Act of 1978, require the Board of Governors of the Federal Reserve System to report to the Congress twice each year as to ". . . objectives and plans of the Board of Governors and the Federal Open Market Committee with respect to the ranges of growth or diminution of the monetary and credit aggregates. . . ." This section of the act also states that "Nothing in this Act shall be interpreted to require that the objectives and plans. . . [for] the monetary and credit aggregates . . . . be achieved if the Board of Governors and the Federal Open Market Committee determine that they cannot or should not be achieved because of changing conditions: [p]rovided [t]hat . . . the Board of Governors shall include an explanation of the reason for any revisions to or deviations from such objectives and plans."

The reports to the Congress are made in February and July. They contain an extended discussion of the economic factors—such as wage and price trends, consumer and business spending, economic developments abroad, governmental tax and spending policies, credit market flows, and institutional change—that interact with monetary policy to influence the course of economic activity. They also review the behavior of the money and credit aggregates in the period just past in relation to previously announced objectives and to the changing economic and financial conditions that influenced attainment of these objectives and their appropriateness.

In providing a basis for evaluating the newly announced monetary and credit objectives in relation to the nation's ultimate economic goals, the reports also show the range and a measure of the central tendency of projections by FOMC members of rates of growth in nominal GNP, real GNP, and prices, and of the unemployment rate one to two years ahead. These projections are conditioned on the objectives and plans for monetary and credit aggregates and prospects for the stance of fiscal policy. The plans for the monetary and credit aggregates are also related, as required by law, to the short-term goals for the nation contained in the

most recent Economic Report of the President and to any short-term goals that may be approved by the Congress. In these ways, the twice-yearly reports by the Federal Reserve to the Congress also contribute to an evaluation of the interaction and coordination of monetary and fiscal policies.

Measures of Monetary and Credit Aggregates

The Federal Reserve has developed a number of money and credit measures that are useful in the interpretation of monetary conditions, some of which have also served, in one degree or another, as targets or guides for monetary policy. These measures unavoidably represent a compromise among various alternative concepts that takes into account the availability of the necessary raw data and the not always clear empirical evidence from statistical tests relating various money and credit measures to other economic variables.

The definitions of money published by the Federal Reserve are shown in table 2.1. They attempt to distinguish between money that is oriented to transactions and money that includes other highly liquid balances that serve a variety of purposes. Distinctions between transaction and other balances, or among near-money assets generally, based, say, on differences in liquidity, have always been somewhat arbitrary. Individual financial assets have characteristics that cause them to shade into one another over a wide spectrum rather than to differ sharply from one another. In recent years these distinctions have become even more blurred as regulatory changes and market innovations have led to a proliferation of new deposit instruments and liquid assets, some usable directly as a means of payment and others convertible readily and inexpensively into a transaction balance.

Definitions of the money supply were fundamentally altered in 1980 following a period of rapid financial innovation and regulatory change that eroded the meaningfulness of the previous measures. The new definitions reflected particularly the growing importance in the monetary system of depository institutions other than commercial banks and the increasing importance of all depository institutions and certain other intermediaries as issuers of claims held by the public in lieu of deposits. Relatively minor adjustments have been made on occasion since that time, largely to reflect evolving financial practices, further regulatory changes, and new sources of information. But because financial innova-

Table 2.1
Measures of the Money Stock and Liquid Assets, March 1984

Billions of dollars, seasonally adjusted except as noted

Aggregate and component	Amount
M1	535.3
Currency	150.9
Travelers checks of nonbank issuers	5.0
Demand deposits	244.0
Other checkable deposits at all depository institutions	135.4
M2[1]	2,230.0
M1	535.3
Overnight RPs issued by commercial banks[2]	47.0
Overnight Eurodollars held by U.S. residents at overseas branches of U.S. banks[2]	11.3
Money market mutual fund shares (general-purpose and broker/dealer, taxable and nontaxable)[2]	144.8
Savings deposits at all depository institutions	305.5
Money market deposit accounts at all depository institutions[2]	392.5
Small-denomination time deposits at all depository institutions[3]	803.4

tion is an ongoing process, at some point it may be necessary to modify these definitions further, or even to adopt substantially new ones.

The narrowest measure of money—M1—is designed to include balances that are commonly used in payment for purchases of goods and services—that is, assets thought to be held primarily to carry out transactions. Thus M1 consists of currency, travelers checks, demand deposits, and interest-bearing accounts with unlimited checking authority. It and the broader measures of money exclude balances held by the U.S. government as well as foreign governments and official institutions on the ground that the amount of their balances is not related to the size of spending and transactions in the United States.

The broader measure of money—M2—encompasses, besides M1, financial assets that are extremely liquid, that can be converted into transaction balances with relative ease or to a limited degree can be used directly for transactions, or whose nominal values are for the most part fixed. This measure thus includes a variety of accounts and instruments such as money market deposit accounts offered by depository institutions,

Table 2.1, continued

Aggregate and component	Amount
M3[1]	2,767.8
M2	2,230.0
Large time deposits at all depository institutions[4]	347.9
Money market mutual funds (institution-only)[2]	45.0
Term RPs at all depository institutions[2, 5]	55.9
Term Eurodollars held by U.S. residents[2]	93.9
L	3,273.6
M3	2,767.8
Bankers acceptances	42.4
Commercial paper	145.4
Savings bonds	72.2
Short-term Treasury obligations	245.8

1. M2 and M3 both differ from the sums of their components because of consolidation adjustments and the seasonal adjustment technique. The consolidation adjustment for M2 represents the amount of demand deposits and vault cash at commercial banks owned by thrift institutions that is estimated to be used in servicing their time and savings deposits. The consolidation adjustment for M3 is the estimated amount of overnight repurchase agreements and overnight Eurodollars held by institution-only money market mutual funds. The nontransaction component in M2 and the nontransaction component in M3 alone are seasonally adjusted only as aggregates. The individual seasonally adjusted series included in these nontransaction components in the table are not used in calculating seasonally adjusted M2 or M3.
2. Not seasonally adjusted.
3. Time deposits in amounts of less than $100,000; includes retail repurchase agreements.
4. Time deposits in amounts of $100,000 or more.
5. Excludes retail repurchase agreements.

other time and savings deposits in these institutions, overnight Eurodollar accounts held by U.S. residents, overnight repurchase agreements issued by banks, and shares in certain money market funds. On the other hand, the measure does not include balances that are clearly held for long-term purposes (such as individual retirement and Keogh accounts). Also excluded are certain important liquid assets, such as Treasury bills and commercial paper, whose nominal values are subject to market risk.

The broadest measure of the money stock—M3—adds to M2 certain other liquid assets that are held mostly by large asset holders, such as time deposits and certain other instruments through which funds are loaned in large denominations ($100,000 or more) to depository institutions at

Table 2.2
Derivation of Domestic Nonfinancial Debt Outstanding, March 1984

Billions of dollars, seasonally adjusted, except as noted

Item in calculation	Amount
Total credit market debt	6,464.1
LESS:	
a. Debt of foreigners	243.6
b. Debt of financial sectors	805.7
EQUALS:	
Debt of domestic nonfinancial sectors	5,414.8
Borrowing sector	
a. U.S. government	1,224.0
b. State and local governments	378.0
c. Nonfinancial business	1,871.6
d. Households	1,941.2

a term longer than overnight, term Eurodollars held by U.S. residents, and shares in money market funds that are generally restricted to institutions. Borrowings by depository institutions in these forms represent funds that can be readily managed and varied in line with changes in funding needs, given credit demands and other deposit flows.

In addition to these measures of the money stock, which have served as annual targets for monetary policy, the Federal Reserve also publishes a broader measure of liquid assets, L. This measure includes a variety of short-term market instruments such as bankers acceptances, commercial paper, and marketable Treasury and agency obligations with original maturities of less than twelve months. It has not served as a target for monetary policy partly because data on it are not available as promptly as are those on the money measures and partly because, compared with the money measures, its components are less influenced by Federal Reserve policy and more by decisions of borrowers about the sectors of the market in which they wish to raise funds.

All of the monetary and liquid-asset aggregates focus on the asset side of the public's balance sheet. Debt measures, on the other hand, focus on credit advanced to the public. In 1983, the Federal Open Market Committee indicated that it would monitor, along with the monetary

Table 2.2, continued

Item in calculation	Amount
MEMORANDA	
Bank credit (loans and investments of commercial banks)	1,641.5
LESS:	
a. Bank credit to financial sectors	101.1
b. Bank credit to foreigners	33.2
c. Regulated security credit	32.5
EQUALS:	
Bank holdings of domestic nonfinancial debt	1,474.7
Credit extended by other depository institutions[1]	995.7
LESS:	
Credit extended by other depository institutions to financial business[2]	141.1
EQUALS:	
Holdings of other depository institutions of domestic nonfinancial debt	854.6
Share of domestic nonfinancial debt held directly by selected institutions (percent)	
a. Commercial banks	27.2
b. Other depository institutions	15.8
c. All others	57.0

1. Savings and loan associations, savings banks, and credit unions.
2. Securities of federally sponsored credit agencies and mortgage pools.

aggregates, a broad measure of debt, encompassing the borrowing of all domestic nonfinancial sectors: federal and state and local governments, nonfinancial businesses, and households. This series, whose derivation is shown in table 2.2, is especially valuable as a source of information about financial markets and about monetary policy pressures at times when the monetary aggregates are being distorted by regulatory changes or innovations or by changes in the public's preferences for financial assets.

The debt of domestic nonfinancial sectors reflects demands for goods and services in the United States better than does a measure of total debt. The latter includes borrowing by foreigners in this market that may finance activity abroad, as well as borrowing by domestic financial institutions

that represents financial intermediation rather than underlying credit demands. On the other hand, narrower credit measures, such as credit advanced by banks or all depository institutions, also shown in table 2.2, have relevance for particular markets, but do not reveal overall credit demands in view of the ease with which many borrowers can shift between institutional and market sources of funds.

The Implementation of Monetary Policy: Open Market Operations

Open market operations, carried out under the general direction of the Federal Open Market Committee, are the most powerful and flexible monetary policy tool of the Federal Reserve. They determine the amount of nonborrowed reserves available to the depository system. The operations are coordinated with discount window and reserve requirement policies to the end of attaining the monetary policy objectives of the Committee and the Board of Governors. A detailed description of open market operations, which involve the purchase and sale in the open market principally of U.S. government securities, is the subject of this chapter.

After each of its meetings, the Federal Open Market Committee (FOMC) issues a directive to the Federal Reserve Bank of New York to guide open market operations in the period before the next meeting. The FOMC has designated the Federal Reserve Bank of New York as its agent in executing open market transactions and has selected a Manager for Domestic Operations, who is also a senior officer of the New York Bank, to conduct the operations. Over the years, the directive has emphasized varying approaches to the implementation of policy, depending in part on the economic and financial conditions of the period and the degree of emphasis being placed on money and credit aggregates, reserves, and money market conditions as guides to the stance of monetary policy and as tools in the day-to-day implementation of policy. But whatever basic policy approach is reflected in the Committee's decision, the directive needs to, and does, provide operating instructions to guide the Manager's decisions about the day-to-day purchase and sale of securities.

The directive adopted by the FOMC at a given meeting is made public shortly after the next meeting of the Committee. It is released along with the policy record summarizing the Committee's assessment of the country's economic and financial position at the time of the meeting and the discussion by the members of the appropriate course for policy during the period ahead. The votes of individual members are recorded; if any member dissents, a statement of the reasons for that dissent is also included. Publication of the record of Committee discussion and of policy decisions

keeps the public and the financial community informed on a continuing basis about considerations influencing the implementation of policy.

Establishing Reserve Objectives for Operations

Because open market operations have their initial impact on the reserve base of the depository system—and directly on nonborrowed reserves—the objectives for monetary policy are translated into reserve guidelines to form a basis for the Manager's day-to-day decisions. (The various measures of reserves are explained in the box that follows.) Before October 1979, the daily provision of reserves was guided in large part by efforts to produce a certain degree of ease or tautness in bank reserve positions and in money market conditions thought to be consistent with objectives specified for, say, the money supply or credit (in those years expressed in terms of bank credit). The degree of ease or tautness in money market and reserve conditions was signified by the behavior of the federal funds rate—the interest rate that banks and other depository institutions charge for surplus reserves that they lend to one another—and by the extent to which the depository system found itself "short" of reserves and thus had to borrow them from the discount window or run down excess reserves. If the money supply grew more than was desired, the Manager was typically instructed to seek some degree of increased tautness in money market conditions and reserve positions; if it expanded less than was desired, he was usually instructed to seek more ease.

Changes in the pressure on the money market and short-term interest rates were attained by varying the extent to which the demand for reserves to support deposits was accommodated through the provision of nonborrowed reserves. When additional ease was sought, the Manager purchased more securities than he otherwise would have done. This action raised nonborrowed reserves and thereby lowered the amount of reserves that banks needed to borrow at the discount window and simultaneously decreased the pressure to borrow in the federal funds market. As a result, interest rates in that market, and in short-term markets generally, tended to fall. When additional tightness was needed, securities were sold, or fewer securities were bought; these actions lowered nonborrowed reserves, raised the need to borrow at the discount window, increased demands in the federal funds market, and tended to cause short-term interest rates to rise.

Control of the money supply under this type of operating procedure relied on the ability to estimate the relationship between the money

market conditions that guided provision of nonborrowed reserves and the amount of money the public was willing to hold at the associated levels of interest rates. Because uncertainties in this relationship appeared to be worsening as the inflationary environment of the late 1970s altered behavioral patterns, the Committee adopted a change in procedure for implementing open market operations in October 1979. That was a time of ebbing confidence in the dollar both at home and abroad, and the procedural change, which entailed a shift to aggregate reserves as the focus for operations, was designed to provide greater assurance that growth in the nation's money supply would be restrained to combat inflation.

The new operating procedure involved setting a predetermined target path for nonborrowed reserves based on the FOMC's objectives for the money supply over the period. Provision of reserves consistent with this path was expected to offer more effective control over the money supply than provision of reserves guided in the first instance by efforts to maintain a particular set of money market conditions. The relationship between the money supply and a reserve path (the multiplier relationship) was expected to be more reliable under the conditions of the time than the relation between money demand and interest rates.

This procedure implied greater freedom for interest rates to vary in the short run as needed to keep money growth on target over time. Changes in the demand for reserves, given predetermined nonborrowed reserves, were more or less automatically reflected in the amount of reserves that had to be borrowed at the discount window by depository institutions and in pressures on money market interest rates, particularly the federal funds rate. These changes set in motion an adjustment process on the part of the public and depository institutions that, as indicated in chapter 2, worked to bring money growth back toward target. Also, the path of nonborrowed reserves could be, and was, raised or lowered to further ease or restrain the supply of reserves relative to demand if that seemed necessary to keep the money supply, and in the process the total of reserves (borrowed and nonborrowed) that support it, on target over the longer run.

In that context, it is important to understand the role played by various reserve measures—total reserves and the monetary base as well as nonborrowed reserves—in the implementation of monetary policy. While attainment of objectives for the monetary and credit aggregates over time entails consistent growth of total reserves, as well as of the total monetary base, there are practical difficulties in attempting to control such reserve aggregates through open market operations, particularly in the short run. Only the nonborrowed component of reserves is determined through the

Reserve Concepts

RESERVE ASSETS are those that, by statute, can be used to satisfy reserve requirements. The Federal Reserve Act specifies only two such assets: *VAULT CASH*—the currency and coin held by depository institutions in their cash drawers and vaults; and *RESERVE BALANCES WITH FEDERAL RESERVE BANKS*—accounts of depository institutions with their Reserve Banks (other than the required clearing balances institutions hold that are related to services provided by the Federal Reserve). No other asset may count as reserves. Reserves must be posted over a fourteen-day *MAINTENANCE PERIOD* (which runs from a Thursday to the second Wednesday). *TOTAL RESERVES* are measured as the sum of reserve balances with Reserve Banks plus the part of vault cash holdings actually used to meet reserve requirements. (The vault cash that can be so used in a current maintenance period is not determined by current vault cash holdings but is equal to actual vault cash held in a two-week period approximately four weeks earlier.)

Total reserves also can be apportioned into two components: The first, *REQUIRED RESERVES*, is the minimum amount of total reserves that a depository institution must hold. This minimum amount is determined by the application of *RESERVE RATIOS*, specified percentages of certain liabilities of depository institutions called *RESERVABLE LIABILITIES* (see chapter 4). To determine required reserves, reservable liabilities are averaged over a fourteen-day interval called a *COMPUTATION PERIOD* (which runs from a Tuesday to the second Monday). The fourteen-day *COMPUTATION PERIOD* for transaction deposits ends two days before the end of the associated reserve maintenance period, while the fourteen-day computation period for other reservable liabilities ends thirty days before the end of the associated reserve maintenance period. The second compo-

initiative of the Federal Reserve in open market operations. In carrying out operations, the System Account Manager supplies reserves through the purchase or sale of securities in the open market that are effectively paid for by adding to or subtracting from a depository institution's reserve balance at the Federal Reserve. The remaining component of total reserves—borrowed reserves—depends on the initiative of depository institutions. (The movements of total reserves and its key components are illustrated in chart 3.1, along with several interest rates.)

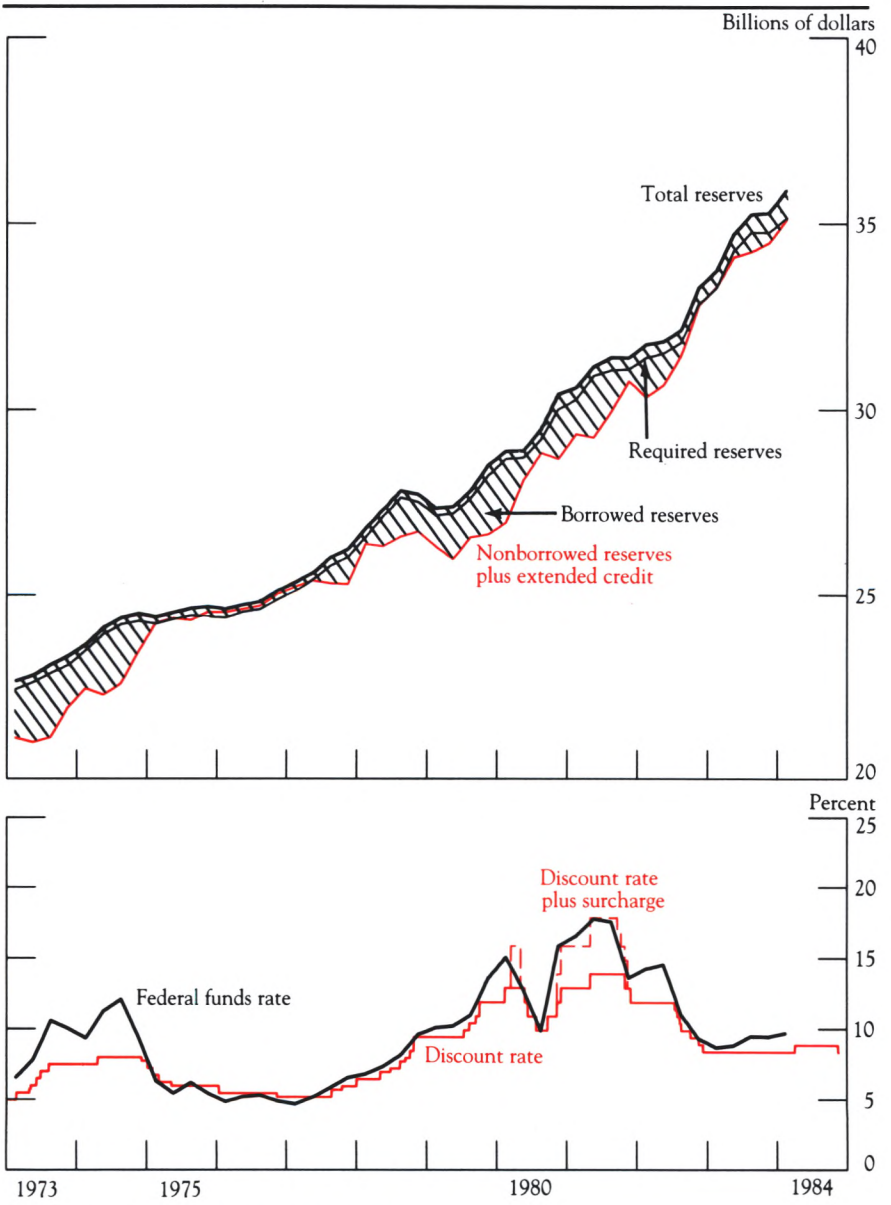
nent of total reserves is *EXCESS RESERVES,* the amount by which total reserves exceed required reserves. If required reserves exceed total reserves, the difference is called *DEFICIENT RESERVES.* Deficiencies not offset by surpluses in surrounding maintenance periods (within allowable limits) are subject to a penalty.

Total reserves are provided in two forms. The first is *NONBORROWED RESERVES*—reserves that the depository system can obtain only from the Federal Reserve System through open market operations (or through a variety of "technical" factors affecting the Federal Reserve's balance sheet—discussed in the appendix—which the Federal Reserve takes into account in conducting open market operations). The second form is *BORROWED RESERVES*—loans to depository institutions by Federal Reserve Banks credited to the institutions' reserve balances with the Reserve Banks. These loans are sometimes called *DISCOUNTS AND ADVANCES* (see chapter 4), or borrowings from the "discount window."

Another reserve-related measure is the *MONETARY BASE.* The monetary base may be measured as the sum of reserve balances with Federal Reserve Banks plus service-related balances plus *CURRENCY IN CIRCULATION*—that is, currency circulating outside the Federal Reserve and the Treasury. The monetary base also may be viewed as total reserves plus service-related balances plus the surplus of vault cash holdings over required reserves of institutions satisfying requirements wholly through vault cash plus currency in the hands of the nonbank public (the currency component of the money supply). These two measures of the monetary base are not exactly equal, owing to a generally small difference between the amount of vault cash currently held by institutions that have required reserve balances at Federal Reserve Banks and their lagged vault cash used to satisfy current reserve requirements. The *NONBORROWED MONETARY BASE* is the monetary base less borrowed reserves.

The amount of total reserves depends on the interaction between open market operations and the borrowing of reserves from the discount window at the initiative of depository institutions. Given the administrative regulations governing access to the discount window (explained in chapter 4), the demand for such borrowing varies with the relation of short-term market interest rates to the discount rate and with a variety of special, temporary influences on the reserve position of individual institutions. While variations in borrowing at the discount window may at times need

Chart 3.1
Measures of Reserves and Interest Rates, 1973–84



Quarterly data. Data on reserves are seasonally adjusted.

to be offset through open market operations if money growth is to remain on track over the longer run, at other times such borrowing helps assure the appropriate provision of reserves. For example, additional reserves provided through the discount window may satisfy a need for more reserves related not to excessive growth in money but to, say, unexpected shifts among deposits subject to varying reserve requirements that increase the amount of reserves needed to support a given money supply. In addition, changes in borrowing also usefully cushion markets from sharp and potentially destabilizing volatility in face of transitory variations in money demand or longer-run shifts in demand that are appropriate to accommodate.

The monetary base is a broader concept than total reserves and essentially comprises the Federal Reserve's liability for currency in circulation and its liability for reserve balances. Currency in circulation, which accounts for nine-tenths of the base, is appropriately provided at the demand of the public and of depository institutions (which hold currency as vault cash). For that reason the base, even the nonborrowed base, has not been a suitable objective for day-to-day control through open market operations. Efforts to control the base risk undesired movements in the money supply as well as sharp variations in money market conditions. For example, if an unexpected rise in currency in circulation were offset by an equivalent decline in reserves—as would be entailed by a target for the total monetary base—the money supply would contract by a large multiple of the drop in reserves (because the fractional reserve system permits a given amount of reserves to support a much larger amount of deposits).

Emphasis on reserve aggregates, and in practice a nonborrowed reserves path, as the guide for day-to-day open market operations is most useful when the monetary aggregate to be controlled is closely related to reserves (as is M1 because transaction deposits are subject to reserve requirements) and the significance of emerging trends in that aggregate for overall economic performance is not subject to unusual uncertainty. However, when institutional and structural changes are altering the demand for money relative to income or are increasing uncertainties in interpreting the movements in money, a more flexible day-to-day approach to the provision of reserves will be needed than is implied by adherence to a reserve path. Such factors were particularly pronounced in late 1982 and early 1983, and uncertainties have persisted, though to a lesser degree, in association with the continuing process of adaptation to the deregulation of deposit interest rate ceilings and with experience with the public's attitudes toward new deposit instruments under varying economic

and financial conditions. Thus, beginning in late 1982, a more judgmental approach was adopted to the implementation of monetary policy through open market operations.

Under such circumstances, emerging evidence about the outlook for economic activity and prices and conditions in financial markets necessarily has to be taken more into account in assessing the significance to be attached to movements in the various aggregates for the implementation of monetary policy. In the process, relatively more weight in policy implementation may be given to the broader money and credit aggregates, which are less directly connected to the reserve base than is M1, but which may at times be less affected by institutional change. With more flexible management of nonborrowed reserves, an expansion or contraction of M1 relative to target, for example, may not be permitted to lead automatically to offsetting increases or decreases in pressure on reserve positions (as would be the case if a predetermined path for nonborrowed reserves were maintained). This approach may be appropriate because the broader aggregates are on track, because analysis suggests that a fundamental shift in the velocity of money is under way, or because more time is required to evaluate the significance of money movements in the context of current economic and financial conditions.

In general, no one approach to the implementation of open market operations is likely to be satisfactory under all of the economic and financial circumstances that monetary policy may face. In decades past, the approach to policy implementation has been adapted in light of such factors as the need to combat inflation, efforts to encourage sustainable economic growth, uncertainties related to institutional change, and evident shifts in the public's attitudes toward, and use of, money. The more that economic and financial conditions warrant emphasis on a monetary aggregate objective that is closely related to the reserve base, such as M1, the greater is the emphasis that may be placed on guiding open market operations by relatively strict targeting of reserve aggregates. In other circumstances, a more flexible approach to reserve management is required.

Security Transactions of the Central Bank

A Federal Reserve security transaction changes the reserve base of the banking or 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 reserve base.

When the Federal Reserve purchases securities from any seller, it pays, in effect, by issuing a check on itself. The seller's bank, on receipt of the check, presents the check to the Federal Reserve for payment; and the Federal Reserve, in turn, honors the check by increasing the reserve account at the Federal Reserve Bank of the seller's 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 results in a reduction in the reserve account of the buyer's bank at the Federal Reserve Bank with no offsetting increase in the reserve accounts of any other bank. The total reserves of the banking system decline in this case.

It is this characteristic of Federal Reserve purchases and sales of assets—the dollar-for-dollar change in the reserves of the banking system—that makes open market operations so important. Through these operations the Federal Reserve can change the amount of reserves available to depository institutions and thus influence the rate of growth of money and, at the margin, conditions in credit markets.

A central bank conceivably 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 central bank must be able both to buy and to sell on a timely basis, 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. Operations are also undertaken from time to time in federal agency securities and, until recently, in bankers acceptances.[1] The U.S. government securities market, in which aggregate trading averages many billions of dollars a day, is the broadest and most

1. There are statutory limitations on the types of securities that the Federal Reserve may buy or sell. These essentially confine transactions to U.S. government securities, to obligations issued or guaranteed by agencies of the United States, and to a limited number of short-term instruments. Effective July 2, 1984, the Federal Reserve discontinued repurchase agreements on bankers acceptances, recognizing that the market for these private instruments had reached a scale of activity that no longer required or justified continuing Federal Reserve support. In 1977, the Federal Reserve had ceased buying these instruments on an outright basis.

active of U.S. financial markets. Transactions are handled "over the counter," with the great bulk of orders placed with specialized dealers (both bank and nonbank) that make markets in Treasury securities. Although most dealer firms are located physically in New York City, a network of telephone and wire services links dealers and customers—regardless of their location—to form a nationwide market.

The large volume of secondary trading in government securities reflects in part the sheer size of the outstanding marketable federal debt—over one trillion dollars at the end of 1983. But it also reflects the widespread use of these securities, which are free from the risk of default, to provide liquidity in the portfolios of investors: financial and nonfinancial businesses, state and local governments, foreign official institutions, and individuals. This use is encouraged by the heavy concentration of Treasury issues in relatively short maturities: almost half of these issues mature within one year and over three-fourths within five years.

The outstanding amount of federal agency securities and the volume of trading in these issues have also grown substantially.[2] Inasmuch as such issues are considered fairly close substitutes for Treasury issues, government securities dealers have generally extended their market-making to the federal agency sector. These developments have enabled the Federal Reserve to execute some open market transactions in federal agency issues, although such activity represents a relatively small share of the System's total market transactions.

Factors Other than Open Market Operations Influencing Reserves

The Manager's purchases and sales are not the only factors that affect nonborrowed reserves. Other influences beyond the immediate control of the Federal Reserve cause reserves to rise and fall, and they must be taken into account by the Manager in his implementation of the Committee's Directive. These technical factors are discussed in detail in the appendix to this chapter, but their implications for open market operations should be noted.

2. Federal and federally sponsored agency debt totaled around $240 billion at the end of 1983. The bulk of the latter consists of securities of federally sponsored housing and farm credit agencies. These entities, while privately owned, were organized by acts of Congress and operate in close collaboration with the federal government. The Federal Home Loan Banks, the Federal National Mortgage Association, and the various agencies of the Farm Credit System fall in this category.

The movement of the technical factors that affect reserves—principally currency in circulation, Federal Reserve float, and Treasury and foreign official balances at Federal Reserve Banks—must be forecast in order to determine what would happen to reserves if the Manager engaged in no operations. Fluctuations in some of these technical factors, such as currency in circulation, are attributable mainly to pronounced seasonal influences—for example, the tendency for individuals to hold more currency during the holiday shopping season late in the year—and thus their impact on nonborrowed reserves is fairly predictable. A rise of currency in circulation drains reserves from the depository system, while a decline provides them; for example, a depositor brings currency to his bank, which in turn credits the amount to the customer's deposit account and to the bank's reserves.

Other factors affecting reserves, such as Federal Reserve float, are more affected by random occurrences—for instance, transportation difficulties due to winter storms—and thus are more difficult to predict. A rise in float, which represents the difference between checks credited to banks' reserve accounts and those not yet collected, adds to reserves, while a decline reduces reserves.

Two staffs, one at the Federal Reserve Bank of New York and one at the Board of Governors in Washington, prepare independent projections of these technical factors and their effect on the level of nonborrowed reserves for the next few days and for several weeks to come. These projections are revised each day in light of new information. The Manager uses the projections and estimates in formulating his plan for open market operations. Although the Manager is not "in the market" every day, he usually engages in operations several times each week.

Because technical factors can provide or absorb a sizable amount of reserves over an operating period, observers cannot determine the stance of policy simply by observing the volume of transactions by the Manager or even whether they are purchases or sales. If technical factors are, on balance, adding to or drawing down reserves in amounts consistent with the Committee's objectives, the Manager will take no action at all, being content with the levels of nonborrowed reserves that will come about without his intervention. More likely, he will have to undertake a large volume of operations to neutralize technical factors and to obtain desired levels of nonborrowed reserves. Indeed, most of the Manager's operations are "defensive" in the sense that they offset the various market forces that are pushing the level of nonborrowed reserves in a direction inconsistent with the attainment of the Committee's objectives.

Table 3.1
Transactions of the System Open Market Account, 1982 and 1983

Millions of dollars

Type of security and type of transaction	1982	1983
U.S. government securities		
Outright transactions		
Treasury bills		
Gross purchases	17,067	18,888
Gross sales	8,369	3,420
Redemptions	3,000	2,400
Coupon issues maturing within 1 year		
Gross purchases	312	484
Gross sales	0	0
Exchanges, maturity shifts, or redemptions	3,131	2,421
Coupon issues maturing within 1 to 5 years		
Gross purchases	1,797	1,896
Gross sales	0	0
Exchanges or maturity shifts	−2,720	−3,892
Coupon issues maturing within 5 to 10 years		
Gross purchases	388	890
Gross sales	0	0
Exchanges or maturity shifts	−44	500
Coupon issues maturing beyond 10 years		
Gross purchases	307	383
Gross sales	0	0
Exchanges or maturity shifts	−367	1,058
Total outright transactions		
Gross purchases	19,870	22,540
Gross sales	8,369	3,420
Redemptions	3,000	2,487

The Manager's Open Market Techniques

The Manager presents his operating plan for the day in a telephone conference call each morning with a Reserve Bank president who is currently a member of the Federal Open Market Committee and with

Table 3.1, continued

Type of security and type of transaction	1982	1983
Matched transactions		
Gross sales	543,804	578,591
Gross purchases	543,173	576,908
Repurchase agreements		
Gross purchases	130,774	105,971
Gross sales	130,286	108,291
Federal agency obligations		
Outright transactions		
Gross purchases	0	0
Gross sales	0	0
Redemptions	189	292
Repurchase agreements		
Gross purchases	18,957	8,833
Gross sales	18,638	9,213
Bankers acceptances		
Repurchase agreements, net	1,285	−1,062
Net change in total System holdings	**9,773**	**10,897**

senior staff at the Board of Governors. After this call, all Committee members are promptly informed of the actions the Manager expects to take during the day in light of Committee objectives and developing financial conditions. The operations of the System Open Market Account in 1982 and 1983 are shown in table 3.1.

The Manager uses two general approaches to the execution of operations. The approach selected depends on the particular reserve situation. When projections of reserve factors indicate that a need to supply reserves to, or withdraw them from, the depository system seems likely to persist, the Manager may make outright purchases or sales of securities. If the need is to withdraw reserves, maturing securities held in the System's portfolio also may be allowed to mature without replacement.

When the need to alter reserves appears to be only temporary—either because the projections suggest that reserves provided today will soon

need to be withdrawn to offset expected seasonal movements in technical reserve factors, or because the near-term outlook for reserves is subject to marked uncertainty—the Manager typically will employ special methods that have only a temporary effect on the aggregate supply of reserves. Thus, as explained later in this chapter, when the need is for temporary provision of reserves, "repurchase agreements" are employed; when it is for temporary withdrawal, "matched sale–purchase transactions" are used.

When the Manager has decided to undertake a particular operation, staff members at the Trading Desk of the Federal Reserve Bank of New York contact the primary dealers making markets in Treasury and federal agency securities. In fulfilling their obligation to make regular markets, the dealers stand ready to quote firm bid and offer prices on such securities and to do business at those prices on whichever side of the market the customer wishes. Because approximately three dozen dealers that make active markets in U.S. government and federal agency securities have trading relationships with the Trading Desk, the Desk normally encounters no difficulty in completing its large orders promptly.[3]

Outright Purchases and Sales

System transactions on an outright basis typically occur through an auction process in which dealers are requested to submit bids or offers for securities of the type and maturity that the Manager has elected to sell or buy that day. Once dealer tenders have been received, they are arrayed according to price. The Manager then accepts amounts bid or offered in sequence, taking the highest prices bid for sales and the lowest prices offered for purchases, until the desired size of the whole transaction is reached.

Not all outright transactions occur through the dealer market. The Federal Reserve acts as agent for a number of official agencies, such as foreign central banks, in making dollar investments. If orders from such

3. Of the firms that were active as primary government securities dealers in 1983, about one-third were special departments of major money market banks. Among the nonbank dealers, several were large, integrated brokerage houses that operate as investment bankers and traders in a number of different sectors of the securities markets, including equity as well as fixed-income securities. Other firms specialize mainly in the Treasury and federal agency markets, perhaps along with involvement in related money market instruments. But most dealer houses participate in more than one market sector, and their willingness to respond promptly through arbitraging transactions when yield relationships are changing the total structure of market rates helps to link developments in the various sectors of the market.

an agency coincide with the System's need to supply or absorb reserves, the Manager may simply execute the customer order directly with the System Account. Because the staff of the Desk keeps a continuous record of bid and offer prices being quoted by dealers for the full list of Treasury securities, customer orders can be readily executed directly with the System's portfolio at the midpoint of "going" prices.

Most of the System's outright transactions, whether in the dealer market or directly with foreign official accounts, take place in Treasury bills. From time to time the System extends its purchases beyond Treasury bills to include intermediate- and long-term U.S. government securities and federal agency issues, but in recent years it has not had occasion to sell such issues.

The New York Trading Desk at Work

Repurchase Agreements

In situations that call only for temporary additions to bank reserves, the Manager engages in short-term repurchase agreements (RPs) with dealers; that is, the System buys securities from the dealers, who agree to repurchase them by a specified date at a specified price. Because the added reserves will automatically be extinguished when the RPs mature, this arrangement is a way of injecting reserves on a short-term basis.

Repurchase agreements for the System Account may be dated to terminate in one to fifteen business days. However, most mature within seven days, and dealers usually have the option to terminate agreements before maturity.[4] The absorption of reserves from premature withdrawals of dealer RPs may also suit the needs of the System. Such withdrawals often occur when there is a greater than anticipated availability of reserves to depository institutions, which tends to reduce the borrowing costs dealers face elsewhere.

Whenever the Manager arranges RPs with dealers, the distribution among dealers is determined by auction. To help ensure enough offers from dealers to enable the System to meet its reserve objectives, dealers are also encouraged to seek securities for RPs from customer sources (that is, nondealer holders of U.S. government securities) in addition to whatever amounts the dealers may have in their own inventories. Individual dealers may enter several offers at various interest rates. The Manager arrays 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.

The "foreign RP pool" makes possible a related technique often used by the Desk. The foreign pool consists of the RP orders that foreign central banks and other official correspondents place with the System as a means of investing dollar balances overnight. If, in accommodating these orders, the Manager sold securities out of the System Account (which would be done with an agreement that they will be resold to the System), reserves would be drained because the inflow of dollars to the foreign accounts would not be returned to the market. However, the Manager may also pass all or some of these orders through to the market, arranging the foreign RPs with dealers instead of with the System Account and thus avoiding the potential reserve-draining effect of the transactions

4. On occasion, the Desk has arranged "fixed-term" RPs, which have no option for early withdrawal.

(that is, the dollar balances would be returned to the market but to different owners). Dealers compete for foreign-customer RPs in a manner similar to that used for System RPs.

Sale–Purchase Transactions

When the Manager for Domestic Operations faces a temporary need to absorb rather than provide bank reserves, matched sale–purchase transactions with dealers are employed. These transactions involve a contract for immediate sale to, and a matching contract for subsequent purchase from, each participating dealer; the maturities of such arrangements usually do not exceed seven days. The initial sale causes surplus reserves to be drained from the banking system; later, when the System purchase is implemented, the flow of reserves is reversed.

Matched sale–purchase transactions are typically arranged in Treasury bills. The Desk selects a bill in which the System 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 sell them back for delivery on a subsequent day. The Desk then accepts the most advantageous bids, up to the point that sufficient reserves are withdrawn. In many cases, dealers serve as intermediaries between their customers (perhaps banks with excess funds) and the Federal Reserve when the Desk arranges matched sale–purchase transactions.

The Federal Reserve Balance Sheet and the Reserve Equation

This appendix examines the individual factors that affect reserve aggregates. Most factors, such as changes in Treasury deposits at Federal Reserve Banks or in currency in circulation, respond to decisions made outside the Federal Reserve. However, the Federal Reserve by and large can offset the impact of such factors on the overall availability of reserves by altering the System's holdings of securities, which are under its direct control. The first section of this appendix explains the consolidated balance sheet of the Federal Reserve Banks. The second section derives a tool called the "reserve equation," which incorporates both the Federal Reserve's consolidated balance sheet and the Treasury's monetary accounts, and specifies all of the factors that affect reserves.

Consolidated Balance Sheet of the Reserve Banks

The consolidated balance sheet of the Federal Reserve Banks provides an accounting summary of all phases of Federal Reserve Bank operations. This balance sheet, also known as the statement of condition of the Federal Reserve Banks, is published every Thursday to show the condition of the Reserve Banks as of the preceding Wednesday. The statement appears the next day (Friday) in many daily newspapers around the country. The balance sheet in table 3.A.1 is a condensed form of the statement for March 28, 1984.

Major Asset Accounts

The *GOLD CERTIFICATE ACCOUNT* (item 1 in the table) represents, in effect, warehouse receipts issued to the Reserve Banks by the Treasury against its gold holdings. In return the Reserve Banks issue an equal value of credits to the Treasury deposit account (item 9b), computed at the statutory price of $42.22 per fine troy ounce. Because all gold held by the Treasury as of the date of table 3.A.1 has been monetized in this fashion,

Table 3.A.1
Consolidated Statement of Condition of All Federal Reserve Banks, March 28, 1984

Millions of dollars

Account	Amount
Assets	
1. Gold certificate account	11,114
2. Special drawing rights certificate account	4,618
3. Coin	515
4. Loans	718
5. Securities	154,228
a. Bought outright	154,228
b. Held under repurchase agreement	0
6. Cash items in process of collection	8,181
7. Other assets	9,076
Total assets	**188,450**
Liabilities	
8. Federal Reserve notes	153,617
9. Deposits	22,297
a. Depository institutions	17,766
b. U.S. Treasury, general account	3,838
c. Foreign official accounts	187
d. Other	506
10. Deferred availability cash items	6,941
11. Other liabilities and accrued dividends	2,301
Total liabilities	**185,156**
Capital accounts	
12. Capital paid in	1,498
13. Surplus	1,465
14. Other capital accounts	331
Total liabilities and capital accounts	**188,450**

the Federal Reserve Banks' gold certificate account of $11.1 billion represents the nation's entire official gold stock. New gold certificate credits may be issued only if the Treasury acquires additional gold or if the statutory price of gold is increased. If the gold stock is reduced, the Treasury must redeem an equal value of gold certificates from the Federal Reserve in exchange for a reduced Treasury deposit at the Federal Reserve.

A Federal Reserve asset item closely related to the gold certificate account is the *SPECIAL DRAWING RIGHTS CERTIFICATE ACCOUNT* (item 2). Special drawing rights (SDRs) are created by the International Monetary Fund (IMF), after agreement by a large majority of the members of the IMF, to serve as a supplement to the international monetary reserves of the members of the Fund; SDRs are allocated to the members in accordance with the size of the members' quotas, but without any payment. SDRs received by the U.S. government are, by law, held by the 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).[5]

COIN (item 3) represents only the amount of coins issued by the Treasury that the Reserve Banks hold. When the Treasury issues additional coin, the Federal Reserve credits the Treasury deposit account (item 9b) and increases its own holdings 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 withdraw coin from the Reserve Banks, their deposits with the 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 System's portfolio of *SECURITIES* (item 5) comprises mainly U.S. government securities (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—item 10, deferred availability cash items. Items 6 and 10 are both "suspense items"—accounts that reflect a trans-

5. Since 1974, the International Monetary Fund has calculated the daily value of the SDR using a weighted average of the 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 March 28, 1984—the date of table 3.A.1—the ESF held $0.7 billion of nonmonetized SDRs, while the Federal Reserve held $4.6 billion of monetized SDRs.

action in process. When a Federal Reserve Bank receives a check for collection, CIPC is raised. Unless the depository institution receives reserves the same day, the volume of deferred availability cash items also rises.[6] 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 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 a little more than 80 percent of total Reserve Bank liabilities at the end of March 1984.[7]

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. Certain service-related balances are required for clearing checks and other instruments of institutions whose reserve balances by themselves are not large enough to handle clearings. Other service-related balances are required to compensate the Reserve Bank for Federal Reserve float. Reserve balances are much larger in volume than service-related balances and, together 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 the *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

6. Intraterritory checks (that is, checks involving a payor and a payee depository served by the same Federal Reserve office) generally are credited the same day the check is received by the Federal Reserve. Such payment is effected by directly debiting and crediting the depositories' accounts at the Federal Reserve Bank, and there need be no entry in the two suspense accounts discussed above.
7. 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.

at depository institutions, in which the Treasury initially deposits its receipts from taxes and from the sale of securities. When such transfers occur, 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.

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. The credit is deferred according to schedules that allow some time for out-of-town checks to be transferred 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. Since the time actually taken to collect a check may be longer than that allowed in the schedule, the depositing institution's reserve balance often is 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 the deposits of 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 the subscription is equal to 6 percent of the bank's current capital stock and surplus. Of this amount 3 percent is *CAPITAL PAID IN* (item 12), and 3 percent 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 annum on the value of their paid-in stock. Ownership of Reserve Bank stock may not be transferred, nor may the owning institution use its shares as collateral for loans.

The *SURPLUS ACCOUNT* (item 13) represents retained net earnings of the Reserve Banks, while the *OTHER CAPITAL ACCOUNTS* (item 14) reflect the unallocated net earnings for the current year up 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. As previously noted, virtually all net earnings of Federal Reserve Banks over the years have been paid to the U.S. Treasury.

The Reserve Equation

The "reserve equation," shown in table 3.A.2, provides a useful framework for analyzing how reserves are determined. This equation specifies all the factors that can influence the supply of reserves. Items 1 through 7 in the equation are the factors that determine reserve balances of depository institutions held at Reserve Banks in the current reserve maintenance period. Items 1 through 3 are the sources supplying funds that potentially could end up as reserve balances with Federal Reserve Banks. Items 4 through 7 are the uses other than reserve balances that absorb potential reserve funds. Item 8, reserve balances, is, of course, the remaining factor using such reserve funds. Indeed, the amount of reserve balances is determined in the reserve equation as the difference between total sources supplying 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, reviewed earlier in the appendix. In the reserve equation, reserve balances are, of course, separated from service-related balances and adjustments (item 6c), rather than combined in deposits of depository institutions (item 9a on the Federal Reserve's balance sheet). Deferred availability cash items (item 10 in the Federal Reserve's balance sheet) are subtracted from cash items in process of

collection (item 6) to measure directly the asset Federal Reserve float (item 1c in the reserve equation). 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 determining reserve balances also incorporates the Treasury monetary accounts, which reflect the Treasury holdings of gold and 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 add unmonetized gold and Treasury currency outstanding (including coin) to both sides of the Federal Reserve balance sheet, and to subtract coin held by the Federal Reserve from both sides of this 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, item 2a) consists of the gold certificate account plus any unmonetized gold. Currency in circulation (a use, item 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 (item 5), comprises 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.)

Sources of Reserve Funds

When the source items increase, they provide reserve funds. For example, an increase in the first item, 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 item) would reduce reserve balances, other things unchanged.

Reserve Bank credit is the largest factor on the sources side of the bank reserve equation, as table 3.A.2 shows. By far the most important component of Reserve Bank credit is the System's portfolio of securities (item 1a), which accounted for 94 percent of Reserve Bank credit as of March 1984. Securities holdings are the only item in the reserve equation over which the Federal Reserve has direct control. Borrowing at the discount

Table 3.A.2
Reserve Equation

Monthly averages, in millions of dollars

Factor	March 1984	Change from March 1983
Sources (factors supplying reserve funds)	200,302	13,483
1. Reserve Bank credit	168,704	12,821
a. Security holdings	158,164	14,025
b. Loans	905	55
c. Float	961	−987
d. Other assets	8,674	−272
2. Monetary reserves		
a. Gold stock	11,115	−23
b. Special drawing rights certificate account	4,618	0
3. Treasury currency outstanding	15,865	685
LESS:		
Uses other than reserve balances (factors absorbing reserve funds)	180,954	16,304
4. Currency in circulation	168,318	13,738
5. Treasury cash holdings	489	6
6. Deposits, other than reserve balances, with Federal Reserve Banks	6,442	1,712
a. Treasury deposits	4,012	651
b. Foreign deposits	229	−15
c. Service-related balances and adjustments[1]	1,622	1,044
d. Other deposits	579	32

window—another component of Reserve Bank credit—takes place at the initiative of depository institutions.

The significance of the float component (item 1c) hinges not so much on the total amount of potential reserve funds it provides, which is relatively small compared with other components of Reserve Bank credit, as on the size and frequency of changes in its level. Sometimes, float varies erratically from one week to the next, especially in winter, when bad weather may hinder the shipment of checks. Float is one of the most

Table 3.A.2, continued

Factor	March 1984	Change from March 1983
7. Miscellaneous accounts, liabilities, and capital	5,705	847
EQUALS:		
8. Reserve balances with Federal Reserve Banks[2,3]	19,348	−2,821[4]
PLUS:		
9. Vault cash used to satisfy reserve requirements[5]	16,794	923
EQUALS:		
10. Total reserves	36,142	−1,898
a. Nonborrowed reserves	35,190	−2,058
b. Borrowed reserves	952	160

1. Consists of required clearing balances and adjustments to compensate for float, both of which are included in item 9a in table 3.A.1 but excluded from item 8 in this table.
2. Components do not exactly add to this total because the factors affecting reserves are monthly averages of daily data, while reserve balances, as well as the remaining items in the table, are prorated monthly averages of data from fourteen-day reserve maintenance periods. This explains the discrepancy between lines 1b and 10b, which represent the same concept.
3. Includes excess clearing balances but excludes service-related balances and adjustments—required clearing balances and adjustments to compensate for float—which make up item 6c.
4. The declines in reserve balances with Federal Reserve Banks and total reserves since March 1983 reflect the net change in the level and deposit coverage of reserve ratios under the terms of the Depository Institutions Deregulation and Monetary Control Act of 1980 (see chapter 4); for member banks the reserve ratios for transaction deposits were generally phased down and coverage of time deposits reduced, and for nonmember institutions the reserve ratios were generally phased up.
5. Data on vault cash used to satisfy reserve requirements are on a lagged basis because vault cash held in a previous computation period is eligible to satisfy reserve requirements in the current reserve maintenance period (see chapter 4).

difficult items in the reserve equation to predict because of its volatility (see chart 3.A.1).

Uses of Reserve Funds

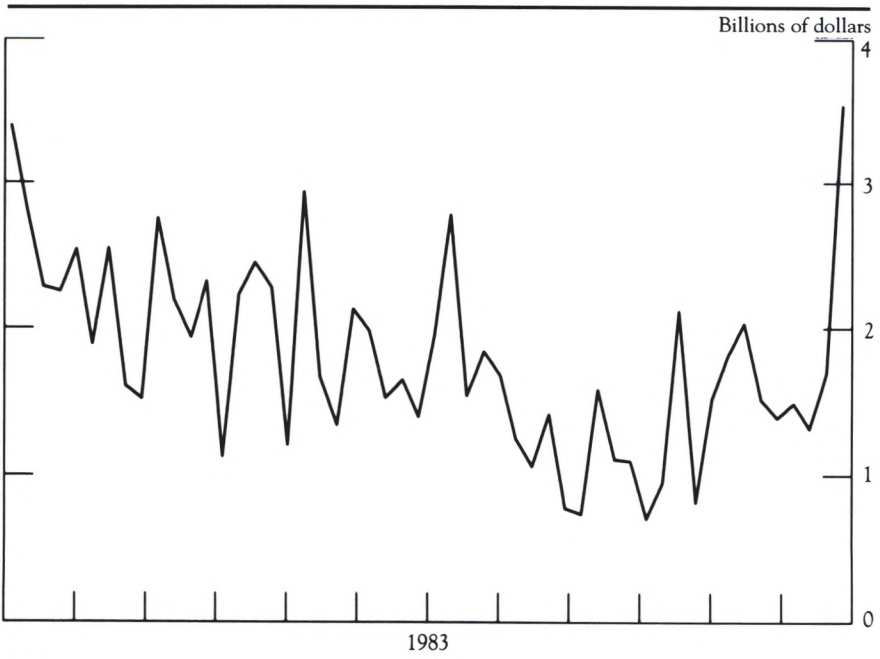
An increase in any of the use items, other than reserve balances, absorbs funds that otherwise could be held as reserve balances. For example, if other items were unchanged, a rise in currency in circulation (item 4) would be accompanied by a decline in reserve balances, as depository

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, responding to both long-run growth and cyclical movements of the economy. However, there also are sizable seasonal swings in demands for currency, especially around major holidays (see chart 3.A.2). 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 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 (item 6a) and service-related balances and

Chart 3.A.1
Federal Reserve Float



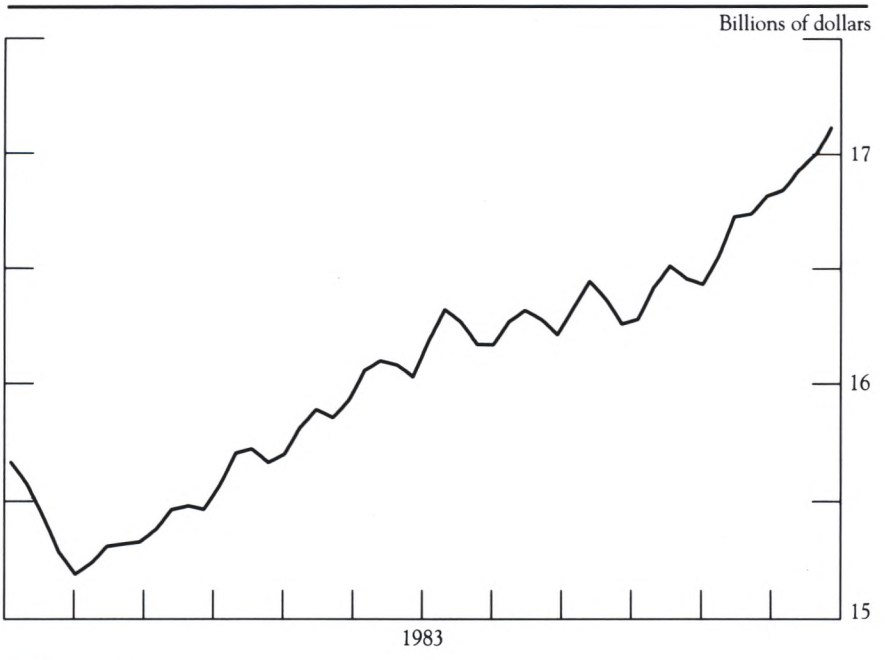
Weekly averages.

adjustments of depository institutions (item 6c) also absorb potential reserve funds. Week-to-week changes in these items can be sizable, even though their levels are relativey low.

Total Reserves

Reserve balances with Federal Reserve Banks (item 8) form only one component of the total reserves available to depository institutions; vault cash (item 9) must be added to reserve balances to derive total reserves (item 10). Vault cash held during an earlier 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. Some smaller institutions hold vault cash in excess of their reserve requirements; such surplus holdings in the lagged computation period are not included

Chart 3.A.2
Currency in Circulation



Weekly averages.

in the vault cash component of total reserves (item 9), which consists only of that portion of vault cash held two computation periods earlier that is used to satisfy reserve requirements in the current maintenance period. Total reserves decreased $1,898 million from March 1983 to March 1984; nonborrowed reserves decreased by $2,058 million, while borrowing from the Federal Reserve by depository institutions increased by $160 million.

Implementation of Monetary Policy: Other Instruments

This chapter focuses on operations of the Federal Reserve discount window, including establishment of the discount rate, and on reserve requirements against deposits at banks and thrift institutions. Changes in the discount rate and in reserve requirements are the monetary instruments that the Federal Reserve can employ, along with open market operations, to implement national monetary policy.

The Reserve Bank Discount Window

Lending reserve funds through the discount window was originally conceived to be the principal instrument of central banking operations, but, on an ongoing basis, open market operations have long since displaced the window in this role. For some time, the window has served mainly to complement open market operations in the day-to-day implementation of monetary policy. However, the availability of credit at the discount window—particularly as such credit can help relieve liquidity strains when the country's banking and financial system may be under stress—performs the vital function of helping to assure the basic stability of our banking and financial system.

Before passage of the Monetary Control Act of 1980 (MCA), only banks that were members of the Federal Reserve System had regular access to the discount window.[1] The MCA extended reserve requirements to nonmember institutions and at the same time provided that any such institution having deposits reservable under the act (transaction accounts and nonpersonal time deposits) would have access to the discount window on the same basis as member institutions. These institutions include domestic nonmember commercial banks, U.S. branches and agencies of foreign banks, savings banks, savings and loan associations, and credit unions. Individuals, partnerships, and corporations other than depository

1. The MCA is title I of the Depository Institutions Deregulation and Monetary Control Act of 1980 (P.L. 96-221).

institutions may be granted access to the discount window "in unusual and exigent circumstances;" no direct lending to such borrowers has been undertaken since the 1930s. If these loans to nondepositories are not collateralized by U.S. government securities, the law requires an affirmative vote of at least five Board members.

A very large number of depository institutions are member banks or hold reservable deposits—about 15,000 banks and about 24,000 thrift institutions (including credit unions) with total deposits of $2½ trillion at the end of 1983—and thus have regular access to the discount window at their initiative. The Federal Reserve System serves as lender of last resort, and depository institutions are expected to draw on reasonably available alternative sources of funds before coming to the discount window. It is apparent that the volume of borrowed reserves could vary widely if each institution were free to tap the Federal Reserve Banks' discount windows without restriction. A pattern of large and volatile borrowing by depository institutions would run the risk of eroding the System's ability to control the reserve base of depository institutions and to achieve national monetary and credit objectives.

Credit at the discount window is subject to administrative constraints set forth in Regulation A of the Board of Governors of the Federal Reserve System. The uniform framework for lending established under this regulation is implemented by the individual Reserve Banks through their discount, or lending, officers and credit committees. The policy guidelines are general, in recognition of the wide range of circumstances that may give rise to borrowing needs. They are designed to enable discount officers to exercise judgment in the administration of lending and to respond flexibly to the needs of individual institutions. Implementation of discount window policy is coordinated by Reserve Bank lending officers and by members of the Board's senior staff. This coordination helps to minimize regional differences of interpretation. Lending guidelines and the way they are applied do not change, regardless of the monetary policy stance of the Federal Reserve.

The availability of borrowed reserves at the discount window permits individual depository institutions, as well as the depository system as a whole, to adjust in an orderly fashion to sizable fluctuations in deposits and loan demand. Most borrowing at the window is for very short periods, often just overnight, because institutions are expected to adapt to economic and financial circumstances without relying on Federal Reserve credit on a regular basis. Such very short-term borrowing is called adjustment credit. Institutions also have access to more extended credit from the Federal Reserve under special conditions—such as the seasonal need

of a smaller institution without ready access to the national money market, emergency needs that may be related to the particular circumstances of an individual institution, or a prolonged need caused by liquidity strains at an institution whose portfolio is largely in longer-term assets. The various lending programs of the Federal Reserve are reviewed in detail below, following a brief description of certain mechanics of borrowing.

Mechanics of Borrowing

Technically, a depository institution has two ways of borrowing funds from its Reserve Bank: by means of a discount or by means of an advance. Although the two methods are different, it has become customary to refer to both as "discounting," and, by extension, to refer to the interest rate set on such borrowing as the "discount rate."

A discount, in a technical sense, entails a sale to a Reserve Bank by a depository institution of loans and similar assets that carry that institution's endorsement. An advance is a loan by a Reserve Bank to the borrowing institution on its note secured by adequate collateral. At one time discounts were by far the more important means of access to Federal Reserve credit, but today, because of the ease of operation, virtually all funds flowing through the discount window do so by means of advances.

All advances must be secured to the satisfaction of the Reserve Bank providing the credit. Satisfactory collateral generally includes securities of the U.S. government and of federal agencies, 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 who seek short-term adjustment credit may be permitted to hold their own collateral appropriately earmarked.

Adjustment Credit

Funds obtained at the discount window as short-term adjustment credit historically have accounted for the great bulk of borrowing from the Reserve Banks. The average level of such borrowings since 1975, along with seasonal and other extended credit, is given in table 4.1. Adjustment borrowing tends to be heaviest and most widespread during periods of tight credit. Even then, since institutions turn to the discount window

Table 4.1
Discount Window Borrowing, by Type, 1975–83

Annual average in millions of dollars

Year	Adjustment credit	Seasonal credit	Other extended credit	Total[1]
1975	144	24	28	195
1976	64	18	2	84
1977	405	56	0	461
1978	750	121	0	871
1979	1,187	151	*	1,339
1980	1,153	72	191	1,416
1981	1,073	183	105	1,361
1982	746	136	170	1,052
1983	554	112	373	1,039

1. Details may not add to totals because of rounding.
* Less than $500,000.

only after tapping other reasonably available sources of funds, the average level of aggregate borrowing from the Federal Reserve naturally amounts to only a very small fraction of the total loans and investments of eligible depository institutions—generally less than one-tenth of one percent.

Appropriate reasons for adjustment borrowing include the coverage of sudden, unforeseen deposit outflows, the need to counter temporary and unexpected difficulties in obtaining funds from other sources, and, in some circumstances, the accommodation of unexpected increases in loan demand. Adjustment borrowing therefore tends to be used mainly by institutions that have volatile checking account liabilities or that are heavily involved in relatively short-term lending. Adjustment credit would not be considered appropriate for such purposes as financing speculative loans and investments, substituting Federal Reserve credit for the borrowing institution's capital, financing lending in the federal funds market, acquiring securities or other money market paper at a profit, refinancing existing indebtedness to private lenders at a lower rate, or avoiding relatively expensive money market funding.

In judging whether a user is relying unduly on adjustment borrowing, the Reserve Bank discount officer takes into account the institution's indebtedness in relation to its total deposits, the frequency and duration of its past borrowing, any special circumstances affecting its current position, and efforts it has made to obtain funds from other reasonably

available sources. In addition to private market sources, savings and loan associations and savings banks that are members of the Federal Home Loan Bank System can look to this special industry lender for liquidity assistance, and many credit unions also have the option of borrowing from a special industry lender. Institutions that have access to such sources are expected to turn to them for funds before seeking assistance from the Federal Reserve.

Large institutions in particular have many options for obtaining funds on a daily basis, including international markets. When such institutions make use of adjustment credit, they generally repay their loans on the next business day. Borrowing by smaller institutions, which have fewer alternative sources of funds, can extend over several days, or at times a bit longer. Very frequent requests for loans and requests for renewals of loans are closely scrutinized and may be discouraged, particularly if the institution has a pattern of borrowing frequently or for extended periods.

Extended Credit for Seasonal Purposes

Seasonal credit from the discount window is designed primarily to assist small institutions that lack effective access to national money markets. Such an institution must also demonstrate a seasonal need that arises from a recurring pattern of movement in deposits or loans; it must meet a part of its seasonal needs from its own resources (the part required for larger institutions represents a greater share of average deposits than does that for small institutions); and, if it is not a bank, it must also make use of seasonal credit assistance available from a special industry lender. In practice, seasonal credit has been limited essentially to institutions with deposits of $250 million or less.

Without an assured source of seasonal credit, these smaller institutions typically would accumulate short-term securities as a pool of liquidity on which they could draw to meet peak seasonal needs for funds. To the extent that resources were tied up in this way during the off-peak season, some needs for credit for desirable projects might not be accommodated.

Of the institutions that have used the seasonal borrowing privilege, most are lenders that do a substantial volume of business in farm or resort areas. For some users, seasonal credit lines may be available for periods extending over a number of months. Whenever possible, institutions are expected to arrange with their Reserve Banks for seasonal credit in advance of their actual need for funds.

Other Extended Credit

Extended credit advanced for other than seasonal purposes is designed to meet two general types of needs. The first involves a depository institution that is experiencing liquidity strains owing largely to exceptional circumstances or practices that are affecting that institution alone. Such strains may arise from a number of causes. They may be triggered, for example, by developments over which the management of the affected institution has no control—such as the closing of a key industrial plant in a small town or a natural disaster. Or they may result from a series of bad management decisions. The nature of the Federal Reserve response to requests for credit from institutions facing these types of problems will depend importantly on whether the problems appear to be correctable, whether the borrowing is likely to be repaid on a timely basis, and whether failure of the institution would risk serious damage to the public interest in the market the lender serves.

Depending on the circumstances, the Federal Reserve may elect to provide extended credit either to help support an explicit program of management and financial reform (with a view to returning the depository institution to a sound basis over a period of time) or to make available bridge financing while arrangements are being completed for a merger with a stronger institution or an orderly closing of the institution. In such cases, the Federal Reserve works closely with the appropriate federal and state supervisory agencies. While the cases involving large banks have perhaps received the greatest publicity, most cases of extended credit in this general category involve small institutions.

A depository institution experiencing problems of the type described above that has access to a special industry lender is expected to seek extended credit assistance from that lender before turning to the Federal Reserve. This expectation reflects the view that the special industry lender will be thoroughly familiar with the evolution of the institution's problem. In appropriate circumstances, however, the Federal Reserve is prepared to supplement the efforts of the special industry lender in helping to meet the liquidity problems of the troubled institution.

Extended credit is also provided to meet protracted liquidity problems that arise when money market conditions cause special difficulties for depository institutions whose portfolios are largely invested in long-term assets. Although some commercial banks have such portfolios, they are most common to savings and loan associations and savings banks, which

invest a large proportion of their funds in long-term residential mortgages. These institutions have in the past often been under liquidity pressure in periods of rising short-term market interest rates, when savers have shifted funds out of deposits into market instruments. However, the deregulation of rates that may be paid on deposits has given these institutions more flexibility in managing liquidity by enabling them to offer market rates and thus to retain deposits.

Extended credit was provided under this program to a number of thrift institutions in late 1981 and the first half of 1982 to help mitigate liquidity strains. Before providing extended credit, the Reserve Banks consult with the agency that supervises the affected institution—in the case of savings and loan associations, the appropriate Federal Home Loan Bank—to determine, among other things, whether funds are available from other sources, including a special industry lender. As with extended credit to meet the exceptional liquidity problems of a particular institution, this type of extended credit from the discount window is made available on condition that the borrower adopt an appropriate plan to restore liquidity and to repay the loan within a reasonable period.

The Discount Rate

The interest rate charged by each Reserve Bank on its loans is established by its Board of Directors, subject to review and determination by the Board of Governors. The Federal Reserve Act originally envisioned that the discount rate of each Reserve Bank would be set to reflect the banking and credit conditions in its District. Over the years, however, the progressive integration of regional credit markets into a fluid national market has gradually produced a national perspective for discount rate determination. As a result, the twelve Reserve Banks now post a uniform structure of discount rates except during the short periods when some Reserve Banks already have changed their rate, but the boards of other Reserve Banks have not yet met to take such action.

The basic discount rate applies to all loans made under the programs of adjustment and seasonal credit. This rate also applies to other extended credit for an initial period, currently sixty days. However, the rate on extended borrowing is raised above the basic rate according to a schedule if the credit is outstanding over a longer period; an alternative flexible rate that takes into account rates on market sources of funds may be established at a certain point in the rate schedule. When extended credit

provided to a particular institution is expected to be outstanding for an unusually long time in relatively large amounts, the period for which each rate in the extended credit rate structure applies may be shortened. The discount rate that would be applicable to loans made to individuals, partnerships, and corporations in unusual and exigent circumstances would be established at the time of the loan.

Surcharges above the basic discount rate have been applied at times to adjustment borrowing by larger institutions that were making frequent use of such credit. In 1980 and 1981, the Federal Reserve applied a surcharge (varying between 2 and 4 percent) to adjustment borrowing by institutions with deposits of $500 million or more that had borrowed in successive weeks or that had borrowed more than four times in a thirteen-week period. The purpose was to encourage prompter portfolio adjustments by these institutions.

The basic discount rate and related rates are adjusted from time to time in light of changing market conditions and to complement open market operations and the thrust of monetary policy generally. Although institutions may borrow from the Federal Reserve only temporarily and under restricted conditions, and they are reluctant to borrow frequently, a discount rate that is low relative to market rates makes it more likely that institutions will come to the window. Thus depository institutions will tend to increase their borrowing when market interest rates rise relative to the discount rate, and to curtail borrowing when market rates fall.

As market interest rates and the level of borrowing change, the discount rate is generally adjusted to help control the volume and profitability of borrowing by depository institutions. Changes in the discount rate are made judgmentally rather than automatically and may lag changes in market rates to a degree.

At times, changes in the level of borrowing may simply reflect temporary responses of the depository system to transitory demands for money and credit. Or such changes may help to keep money and credit from deviating substantially from policy objectives by providing or absorbing reserves when the demand for excess reserves or the amount of required reserves needed to support a given level of deposits has changed unexpectedly and therefore could not be fully taken into account in open market operations. Under all those circumstances, an adjustment in the discount rate would needlessly exacerbate money market pressures, and indeed might be counterproductive.

At other times, however, an adjustment in the discount rate may be desirable to reinforce open market operations. This might be the case when a rising (or falling) level of borrowing was contributing to sustained

strength (or weakness) in money and credit growth relative to policy objectives. In a period of excessive money growth, for instance, a rise in the discount rate would reduce incentives to borrow from the Federal Reserve and help accelerate institutions' portfolio adjustments that work to reduce expansion in credit and money. In that way a rise in the discount rate would complement the restraining effect of open market operations on nonborrowed reserves.

The immediate response of market interest rates to a change in the discount rate—the "announcement effect"—will depend in part on the extent to which the change has been anticipated. To the degree that short-term rates have moved in anticipation of an adjustment in the discount rate, the actual change may have relatively little impact on market conditions, given the amount of reserves being supplied through open market operations. The response of market rates generally to a discount rate change will be largest when the market views the adjustment as signaling a shift in the Federal Reserve's evaluation of the underlying condition of the economy and of money and credit demands. In general, changes in the discount rate must be interpreted in the context of surrounding economic and financial conditions and in light of the way they complement other policy actions.

Reserve Requirements

Since 1980, all depository institutions in the United States—commercial and savings banks, savings and loan associations, credit unions, U.S. agencies and branches of foreign banks, and Edge act and agreement corporations—must meet reserve requirements set by the Federal Reserve and hold the reserves in the form of vault cash or deposits at Federal Reserve Banks. Reserves are held against transaction accounts and nonpersonal time deposits, as well as against funds raised abroad through foreign affiliates or other foreign banks for domestic use. Before 1980, reserves were required only of member banks (and were held against all deposits at those banks). But from the mid-1970s on, the old structure of reserve requirements was rapidly becoming outdated. Regulatory change and competitive pressures during a period of high interest rates were fostering the growth of deposits, especially the newly introduced interest-bearing transaction deposits, at institutions other than member banks. Thus reserve requirements needed to be applied to a broad group of institutions for more effective monetary control—to make it more likely

that the amount of reserves supplied by the Federal Reserve would be reasonably closely related to the supply of money in the economy.

Structure of Reserve Requirements

Under the Monetary Control Act of 1980, the Federal Reserve Board may impose reserve requirements on transaction deposits and on nonpersonal time deposits solely for the purpose of implementing monetary policy. These requirements must be applied uniformly to all similar accounts at all depository institutions. The Board 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. Reserve requirements on nonpersonal time deposits may be differentiated by maturity, subject to the overall limits of zero to 9 percent on the ratio of required reserves to nonpersonal time deposits given in the act. There are no overall limits on reserves against net foreign borrowing by depository institutions.

The range of reserve ratios permitted under the MCA and the initial levels of those ratios established by the Board are shown in table 4.2. The highest reserve requirements authorized and imposed are those on transaction accounts, which include demand deposits and interest-bearing accounts with unlimited checking privileges. The Board may modify the reserve ratio on transaction accounts within a range of 8 to 14 percent. Relatively low reserve requirements have been placed on nonpersonal time deposits and net foreign borrowings. Under the act, the Federal Reserve has no authority, except in extraordinary circumstances, to impose reserves against personal time deposits.

Reserve requirements have been structured to bear less heavily on smaller institutions than on larger ones. At every institution a small amount of reservable liabilities is exempt from any reserve requirement, and transaction accounts up to a certain level are subject to relatively low reserve requirements. These levels are adjusted annually to reflect the growth in deposits, and in 1984, the first $2.2 million of reservable liabilities was exempt from any requirements, and transaction deposits up to $28.9 million had a reserve ratio of only 3 percent.[2]

Under extraordinary circumstances, the Board is also empowered by the MCA to establish reserve requirement ratios beyond the ranges shown in the table. Specifically, with the concurrence of no fewer than five

2. The Congress originally set these reserve requirement break points at $2 million and $25 million, and required the annual adjustment.

Table 4.2
Reserve Ratios, September 1984

Percent

Type of liability	Initial ratios after phase-in of Monetary Control Act[1]	Permissible range[2]
All reservable liabilities		
$0–2.2 million[3]	0	. . .
Transaction accounts[4]		
$0–28.9 million[5]	3	3
More than $28.9 million	12	8–14
Time and savings deposits		
Personal	0	0
Nonpersonal, by maturity[6]		0–9
Less than 1½ years	3	
1½ years or more	0	
Net liabilities to foreign banking offices[7]	3	At the discretion of the Board

1. The schedule of phase-in of the reserve requirement ratios in this column is as follows: U.S. agencies and branches of foreign banks—August 1982; member banks and Edge and agreement corporations—February 1984; former member banks that withdrew from the Federal Reserve System between July 1, 1979, and March 31, 1980—October 1985; nonmember commercial banks, savings and loan associations, savings banks, and credit unions—September 1987 (except for institutions in Hawaii—January 1993).
2. Except under certain conditions; see text.
3. The Garn–St Germain Depository Institutions Act of 1982 (P.L. 97-320) provided that $2 million of reservable liabilities (transaction accounts, nonpersonal time deposits, and Eurocurrency liabilities) of each depository institution was subject to a zero percent reserve requirement. The act also instructed the Board to adjust the amount of reservable liabilities subject to this zero percent requirement each year for the next succeeding calendar year by 80 percent of the percentage increase in the total reservable liabilities of all depository institutions, measured on an annual basis as of June 30. No corresponding adjustment is to be made in the event of a decrease. Effective January 12, 1984, the amount of the exemption was established at $2.2 million.
4. Reservable transaction accounts are demand deposits, NOW accounts, automatic transfer accounts, share draft accounts, and any other account at a depository institution on which the account holder is permitted to make withdrawals by negotiable or transferable instruments, payment orders of withdrawal, and telephone and preauthorized transfers (in excess of three per month) for the purpose of making payments to third persons or others. Reserves are required on net transaction accounts. These amounts are derived by deducting from total transaction accounts the sum of cash items in process of collection and demand deposits due from domestic depository institutions. Money market deposit accounts, and other similar accounts, that permit up to six preauthorized, automatic, or other transfers per month (no more than three of which may be checks) are classified as time deposits and are subject to reserves as such.
5. The Monetary Control Act of 1980 requires that the amount of transaction accounts against which the 3 percent reserve requirement applies be modified annually by 80 percent of the percentage change in transaction accounts held by all depository institutions determined as of June 30 each year. Effective December 29, 1983, the amount was established at $28.9 million.
6. Nonpersonal deposits are those nontransaction accounts that are transferable or in which the beneficial interest is held by a depositor that is not a natural person.
7. Net liabilities to foreign banking offices include net borrowings from related foreign offices, gross borrowings from unrelated foreign depository institutions, loans to U.S. residents by foreign offices of U.S. depository institutions, and sales of assets by U.S. depository institutions and U.S. offices of foreign banks to their foreign offices.

Board members, and after consultation with the other agencies that supervise depository institutions, the Board may impose a supplemental reserve requirement of up to 4 percentage points on transaction accounts if such an action is essential for the conduct of monetary policy. Unlike reserves required under the regular schedule, such reserve balances would earn interest from the Federal Reserve. Furthermore, with an affirmative vote of no fewer than five members, and after consultation with the appropriate committees of the Congress, the Board may, for periods of up to 180 days, impose ratios outside the bounds shown in the table and apply requirements to other classes of liabilities.

Since February 1984, depository institutions have been required to maintain a given level of reserves on average over a fourteen-day period ending every other Wednesday. The reserve requirement against transaction deposits is essentially contemporaneous while that against other reservable liabilities is lagged;[3] the average level of reserves that must be held during a reserve maintenance period is computed by applying the appropriate reserve ratios to the level of transaction accounts held on average over the fourteen days ending two days before the end of the reserve maintenance period and to the average level of other reservable liabilities over a two-week period ending about two weeks before the reserve maintenance period begins. Different reserve maintenance periods were set for transaction and other liabilities so that current changes in most non-M1 liabilities would not affect the relationship between current reserve availability and the current level of deposits in M1, the measure of money that encompasses deposits on which unlimited transactions are permitted.

To provide flexibility for depository institutions in case of sudden, unexpected changes in reserve positions that may occur late in a reserve maintenance period, the Federal Reserve offers reserve carry-forward options within certain limits. Excess reserves of up to 2 percent of reserve and clearing-balance requirements over a fourteen-day maintenance period may be carried forward into the next fourteen-day maintenance period to help satisfy that period's reserve requirements;[4] any deficiency in reserves up to 2 percentage points of an institution'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

3. From 1968 to early 1984, all reserve requirements were lagged, and reserves were held on a weekly basis against deposits two weeks earlier.
4. Clearing balances are required of institutions to gain access to Federal Reserve services, and the level of required clearing balances is related to usage of these services. See chapter 7.

maintenance period.[5] A penalty equal to the discount rate plus 2 percentage points is levied against reserve deficiencies beyond the carry-forward amount. Such deficiencies occur rarely, of course, because depository institutions must by law meet their reserve requirements.

Reserve Requirements and Monetary Policy

Reserve requirements are important for the conduct of monetary policy because they form the link between Federal Reserve open market operations on the one hand and the supply of money and the cost and availability of credit on the other. Open market operations, supplemented by borrowing at the discount window, determine the total volume of reserves available to depository institutions, while reserve requirement ratios dictate the maximum quantity of reservable deposits that the reserve base can support.

The reserve requirement structure of the MCA is oriented particularly toward control of M1. Certain other accounts with transaction features—such as accounts with money market mutual funds—by law are not subject to reserve requirements and are not included in M1; but they are included, along with time and savings deposits generally, in broader measures of money. The structure of reserve requirements is oriented less to the control of these broad measures because the bulk of those deposits included do not bear reserve requirements set by the Federal Reserve. Thus the reserve base is most useful as a fulcrum for monetary control when policy can focus relatively more on M1 than on other monetary and credit aggregates. Because nonpersonal time deposits and funds raised abroad, which banks can readily manage to accommodate to changing bank credit demands, are subject to reserve requirements, the Federal Reserve can—by changing reserve requirements—influence their cost and can alter the cost of raising funds in domestic markets as compared with that in foreign markets.

The linkage between reserves and deposits or money tends to be more predictable when reserve requirements are "binding"—that is, when the required reserves are in excess of cash balances that depository institutions would have held voluntarily—and when reserves in excess of requirements are at frictional levels. As a result of low or nonexistent reserve

5. To help smooth the transition from the lagged reserve structure in effect before February 1984 to the present contemporaneous structure, the maximum carry-forward was established as the larger of $25,000 or 3 percent until August 1984, 2½ percent until January 1985, and 2 percent thereafter.

requirements for smaller institutions, the vast majority of depository institutions can meet their obligations with vault cash that they would hold in any case for daily operating needs. However, most transaction accounts are held at institutions that cannot meet all of their reserve requirements through vault cash but also must hold reserve balances at Federal Reserve Banks, and are therefore "bound." Excess reserves are usually kept at frictional levels because institutions want to minimize their holdings of reserves, which are nonearning assets.

The predictability of the linkage between reserves and money also improves when the various components of the money concept to be controlled are subject to the same reserve ratios, so that shifts between different types of deposits in that money measure or among institutions of varying size or type do not alter the relationship between reserves and those deposits. The MCA introduced a reserve requirement structure that moved in that direction for M1, but legislative exemptions for institutions holding small amounts of reservable liabilities and lower reserve requirements on transaction deposits under a certain level leave room for deposit shifts to affect the average relationship between required reserves and transaction deposits in the aggregate.

Reserve requirement ratios can be changed to help implement monetary policy. A rise in reserve requirements reduces the volume of deposits that can be supported by a given level of reserves and, in the absence of other actions, tends to reduce the money supply and raise the cost of credit. A decline in reserve requirements leaves depository institutions initially with excess reserves, which can induce an expansion of bank credit and deposit levels and a decline in interest rates.

Adjustments to reserve requirements are not, however, well suited to the day-to-day implementation of monetary policy. Changes were infrequent before the MCA was passed. And up to September 1984, there had been no discretionary changes since the phase-in of reserve requirements for all institutions under the MCA began in November 1980, except for a minor change affecting the maturity of nonpersonal time deposits subject to reserve requirements. Even small adjustments to reserve ratios have substantial effects on required reserves. To avoid large, sudden impacts on deposits and credit, changes in reserve ratios have been at least partially offset by open market operations at the time of implementation or have tended to be made when large seasonal changes were taking place in the demand for reserves. More generally, reserve requirements are an important variable in banks' business calculations, and frequent changes in them would unnecessarily complicate financial planning by these institutions.

As a result, the tendency has been to use changes in reserve requirements mainly for their "announcement" effect—to underline a particular policy direction and to influence the public's perception of the thrust of monetary policy. In addition, reserve requirements on large certificates of deposit or net Eurodollar borrowing have been adjusted to affect the cost and availability of credit extended by banks or to influence the relative cost of domestic and foreign sources of funds. On occasion, higher reserve requirements have been applied only to the increment in these managed liabilities as a means of slowing the expansion of bank credit.

Other Policy Tools

In addition to the general monetary instruments that affect the availability and cost of the reserves of depository institutions, the Federal Reserve in the past has had authority to establish ceilings for interest rates on time and savings deposits and to implement selective credit controls. Before passage of the Depository Institutions Deregulation Act of 1980 (DIDA), ceiling rates on time and savings deposits had been administered on a coordinated basis by the Board of Governors for member banks, by the Federal Home Loan Bank Board for insured savings and loan associations, and by the Federal Deposit Insurance Corporation for insured nonmember commercial and savings banks.[6] The structure of ceiling rates was designed to contribute to equitable competition for interest-bearing deposits as the institutions adapted to changing economic and financial circumstances. To administer the phase-out of ceiling rates in an orderly fashion by no later than 1986, the Depository Institutions Deregulation Committee—comprising the Secretary of the Treasury, the Chairman of the Board of Governors, and the heads of the other agencies that regulate depository institutions—was established by the DIDA; the authority of individual regulatory agencies to set ceiling rates was transferred to this committee.

There is no legislative authority at present for selective credit controls (apart from margin requirements on stocks, discussed below). The Credit Control Act, which expired in June 1982, provided that "[w]henever the President determines that such action is necessary or appropriate for the purpose of preventing or controlling inflation generated by the extension of credit in an excessive volume, the President may authorize the Board [of Governors] to regulate and control any and all extensions of credit."

6. The DIDA is title II of the Depository Institutions and Monetary Control Act of 1980 (P.L. 96-221).

The Board, in response to a request from the President, administered certain control programs under this authority in the spring of 1980. Previously, the Federal Reserve had been given the responsibility for administering consumer credit regulations during the World War II and Korean war periods; in the latter period, selective regulation was extended to real estate credit.

The Securities Exchange Act of 1934 and its amendments authorize the Board of Governors to regulate the use of credit for purchasing or carrying securities. In exercising its responsibility, the Board imposes limits on the amount of such credit that may be provided by brokers and dealers (Regulation T), banks (Regulation U), and other lenders (Regulation G). To prevent borrowers from obtaining more credit abroad than lenders are permitted to supply in this country, as well as to improve compliance generally, all U.S. persons who use securities credit are required to comply with the Board's margin regulations (Regulation X). Margin regulations apply to transactions in stock and in related instruments such as options, warrants, and bonds convertible to stock.

The main purpose of margin requirements is to inhibit undue fluctuations in stock prices that might be fostered by the excessive use of credit in the purchase of securities or by highly leveraged short sales or transactions in options. Although sharp changes in stock prices are always possible, restrictions on the use of credit may limit cumulative price increases and decreases and reduce the risk that fluctuations in the stock market will have destructive effects on financial markets and the economy generally, as well as on the individual investor.

The regulations on securities credit set forth the maximum amount of credit that a lender may advance against most stock pledged as collateral, when the purpose of the loan is to purchase stock.[7] For example, if the Federal Reserve margin requirement were 60 percent, an investor who wanted to buy $10,000 worth of stock would have to put up $6,000 in cash. In effect, the regulations would allow the investor to borrow no more than $4,000 to finance the purchase. Similar margin is required if securities are sold short—that is, when someone sells securities that he does not own. In the case of options, the "writer"—that is, the original seller—is also subject to a margin that is based on the value of the underlying securities if he does not already have an offsetting position in those securities.

7. The regulations apply to "margin stocks," which are corporate equity securities traded on a national exchange such as the New York Stock Exchange, or included in the Federal Reserve's "List of OTC Margin Stocks."

The Federal Reserve's regulations establish margin requirements that apply only at the time a security is bought or sold. Therefore, if stock is bought on margin and its price subsequently falls, the regulations do not require the investor to put up additional collateral or to pay off part of his loan in order to restore the original relationship between the loan and the now lower value of the underlying collateral. Similarly, any increase in the Federal Reserve's margin requirement applies only to future transactions, so that an investor does not have to post additional collateral or pay off loans associated with margin transactions made under the earlier, lower requirement. However, most broker/dealers have maintenance requirements, and may require additional collateral or cash at any time. For example, the New York Stock Exchange requires its members to issue a margin call—that is, to call for more money—whenever a customer's net equity falls below 25 percent of the market value of stocks held in a margin account; and many individual brokerage firms use maintenance margins that are somewhat higher.

The Federal Reserve in the International Sphere

The U.S. economy is an important, interdependent part of the world economy. Public policies and economic developments in this country have a major influence beyond our borders. At the same time, policies and economic developments abroad have significant effects on our economy. The U.S. dollar continues to play a leading role in international monetary arrangements: it is the currency most used in international transactions and most widely held in official reserves.

These international relationships affect the operations and activities of the Federal Reserve in various ways. In deciding on the monetary policy that is appropriate for achieving basic domestic economic goals, the Board of Governors and the Federal Open Market Committee consider the information conveyed by the record of U.S. international transactions, movements in exchange rates, and other international economic developments. In addition, the Federal Reserve has specialized instruments and powers that have direct influence on international financial variables and the activities of international banks. The Federal Reserve also can undertake foreign exchange transactions, in cooperation and consultation with the U.S. Treasury. These transactions, and similar ones by foreign central banks involving dollars, may be facilitated by foreign currency "swap" arrangements between the Federal Reserve and certain other central banks. In the regulatory area, the ongoing internationalization of banking has led to new responsibilities for the Federal Reserve, as well as to changes in existing regulations. Finally, the Federal Reserve works with other agencies of the U.S. government in the conduct of international financial policy, supports those agencies in this country's participation in various international organizations, and maintains relations with other central banks on subjects of mutual concern.

Monetary Policy and International Economic Developments

The general instruments of monetary policy—open market operations, the discount rate, and reserve requirements—are employed essentially to

attain basic domestic economic objectives. A monetary policy that encourages economic growth, high levels of employment, and reasonable price stability at home will also contribute most effectively to stable international conditions. At the margin and for short periods, when it is consistent with the achievement of domestic objectives, the use of general monetary instruments may be adapted in light of external factors; for instance, the timing of a discount rate action may be affected.

In formulating monetary policy the Board of Governors and the FOMC use information on international factors. Changes in public policies or economic conditions abroad that may affect the U.S. economy are evaluated in assessing the stance of U.S. monetary policy, as are movements in international variables like the exchange rate.

Movements in dollar exchange rates can be helpful in distinguishing among interpretations of the same economic event—for example, assessing whether a tendency for interest rates to rise reflects inflationary expectations or an increase in the demand for bank reserves. If inflationary expectations worsened, a decline in the nominal exchange rate of the dollar could be expected to accompany a rise in interest rates. On the other hand, if the demand for reserves rose relative to supply, an appreciation of the dollar would be the likely accompaniment of rising interest rates.

On some occasions a change in the exchange rate would reinforce other signals that suggested the need for a change in monetary policy. For example, in late 1979 a marked deterioration of the dollar on exchange markets was one of the important signs that increases in expected inflation were affecting U.S. financial and goods markets. This development contributed to the adoption of the new reserves operating procedure designed to assure closer control over money growth.

On other occasions a change in the exchange rate would not signal a need to alter monetary policy. Suppose there were a surge in public or private spending at a time when the economy was approaching capacity. Given an unchanged path of bank reserves, the associated increase in demand for money and credit would cause a rise in interest rates, with an accompanying tendency for the dollar to appreciate on exchange markets. These changes in interest rates and the exchange rate would work to restrain inflationary pressures. As the dollar appreciated, home and foreign demand would be shifted away from U.S. goods, and prices of imported goods would be held down. Resisting the appreciation of the dollar by adopting a more expansionary path for bank reserves and the money supply would simply magnify the inflationary effect of the original surge in demand.

Foreign Currency Operations

The Federal Reserve has engaged in foreign currency operations since 1962, in addition to the transactions that it has executed for customers since the 1950s. The foreign currency operations of the Federal Reserve are directed by the FOMC, acting in close cooperation with the Treasury, which has overall responsibility for the management of U.S. international reserves. The Manager for Foreign Operations at the New York Federal Reserve Bank acts as the agent for both the Committee and the Treasury in carrying out U.S. foreign currency operations. The policy of the FOMC with regard to foreign currency operations is embodied in its Authorization for Foreign Currency Operations and its Foreign Currency Directive.

The nature and scope of foreign currency operations have evolved in response to changes in the international monetary system, the most important of which was the transition in the early 1970s from the Bretton Woods system of fixed exchange rates to a system of flexible exchange rates. In the period of flexible exchange rates, the main aim of Federal Reserve foreign currency operations (as provided for in the Foreign Currency Directive) has been to counter disorderly conditions in exchange markets through intervention operations, carried out primarily in the New York foreign exchange market. During some periods of downward pressure on the dollar, the Federal Reserve has purchased dollars (sold foreign currency), thereby absorbing some of the selling pressure on the market value of the dollar. Similarly, sales of dollars (purchases of foreign currency) have at times been undertaken to counter upward pressure on the dollar's foreign exchange value. The Federal Reserve Bank of New York may also carry out transactions in the U.S. foreign exchange market as an agent for the accounts of foreign monetary authorities.

Intervention operations involving dollars, whether initiated by the Federal Reserve or by a foreign authority, do not alter the supply of reserves available to U.S. depository institutions. In other words, the intervention is "sterilized" in that it does not lead to a change in the domestic reserve base different from any that would have taken place in the absence of the intervention.

Suppose the Federal Reserve wants to counter downward pressure on the dollar. It draws down, say, its deutsche mark balances (an asset on the Federal Reserve balance sheet) at the Bundesbank—the German central bank—and sells deutsche marks for dollars, temporarily reducing the supply of dollar bank reserves. However, unless an explicit decision has been made to lower dollar bank reserves, the Federal Reserve routinely

uses the dollars it has acquired to purchase a dollar security, thereby restoring the supply of dollar bank reserves to its former level.

The Bundesbank may or may not allow the Federal Reserve's intervention operation to affect deutsche mark bank reserves. In order to avoid an increase in deutsche mark bank reserves, the Bundesbank must sterilize by selling a deutsche mark security in the open market. The net effect of a Federal Reserve intervention operation that is sterilized by both the Federal Reserve and the Bundesbank is to reduce the supply of dollar securities and increase the supply of deutsche mark securities available to the private sector.

Dollar interventions initiated by foreign central banks also leave the U.S. domestic reserve base unaffected either because they do not entail changes in the Federal Reserve's balance sheet or because any such changes are routinely offset. 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 have no impact on bank reserves. If a foreign central bank sold dollars from its holdings at the Federal Reserve or sold dollars borrowed from the Federal Reserve through the "swap" network described below, those transactions would, in and of themselves, affect bank reserves. However, in either case the impact would be offset as a matter of course by Federal Reserve sales of domestic securities.

"Swap" Network

A major feature of the foreign currency operations of both the Federal Reserve and foreign central banks has been the "swap" network, which consists of reciprocal short-term credit arrangements between the Federal Reserve and certain foreign central banks. These arrangements enable the Federal Reserve to borrow the foreign currencies it needs for intervention operations to support the dollar and enable the partner foreign central banks to borrow the dollars they need to support their own currencies. Swap transactions are implemented through the New York Federal Reserve Bank, acting as an agent for the Federal Reserve System.

A swap transaction involves both a spot (immediate delivery) transaction, in which the Federal Reserve exchanges dollars for foreign currency, and a simultaneous forward (future delivery) transaction, in which the two central banks agree to an exchange of currencies in the opposite direction three months in the future. The Federal Reserve might initiate a swap transaction (make a swap drawing) at times when it needs the

foreign currency obtained (borrowed) in the spot half of the swap transaction to finance intervention sales of foreign currency in support of the dollar. In order to repay the drawings at maturity, the Federal Reserve would need to reacquire the foreign currency. Such acquisitions have usually been accomplished by subsequently 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 swap transaction to finance sales of dollars to support its own currency, and subsequently meets its obligation to deliver dollars to the Federal Reserve by reacquiring dollars in the market.

The first swap line was established with the Bank of France in March 1962. Similar agreements were subsequently made with other central banks, and the size of existing credit lines has been increased from time to time. At the end of 1983, the Federal Reserve had swap agreements with fourteen foreign central banks and the Bank for International Settlements (BIS) totaling $30.1 billion. Eleven foreign central banks and the BIS have made swap drawings since the establishment of the network. Foreign drawings were relatively more frequent and on a larger scale in the 1960s than in the 1970s; there were no foreign central bank swap drawings in the years 1971–72 and 1977–80 and only a small drawing early in 1981, but large drawings were made in 1982 in connection with the liquidity crisis in Mexico. The Federal Reserve has made swap drawings on nine foreign central banks and the BIS at various times.

The purpose and scope of the 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 regime of managed flexible exchange rates that emerged after the suspension of gold convertibility in 1971, the United States began to intervene in exchange markets. Federal Reserve swap drawings were used to finance much of this intervention. The size of U.S. intervention operations and Federal Reserve swap drawings increased sharply after November 1, 1978, when U.S. authorities announced a program designed to correct an excessive depreciation of the dollar through large-scale intervention and other measures. Federal Reserve swap drawings peaked in October 1979, when drawings totaled $3.8 billion. After the middle of 1980, the dollar tended to strengthen in exchange markets, and together with the Treasury, the Federal Reserve sold dollars against foreign currencies. In part, these currencies were acquired to cover outstanding issues of securities by the Treasury denominated in foreign currencies. Early in 1981, the United States curtailed its official exchange market

operations, though remaining ready to enter the market when needed to counter disorderly conditions.

Other U.S. Foreign Currency Resources

In the early years of floating exchange rates, U.S. support for the dollar was financed almost exclusively by Federal Reserve swap drawings. However, in the period of sizable U.S. interventions from November 1978 through early 1981, Treasury resources financed about half of total U.S. support for the dollar, with the remainder financed through swap drawings by the Federal Reserve. The Treasury acquired foreign currency resources in part through its own swap arrangement with the Bundesbank, but mainly through drawings on the International Monetary Fund (IMF), sales of special drawing rights (SDRs), and issuance of securities denominated in foreign currencies.[1] Over the period 1979–80, the Treasury issued a total of $5.2 billion equivalent of securities denominated in marks and $1.2 billion equivalent of securities denominated in Swiss francs with maturities ranging between two-and-one-half years and four years; these securities have since been retired.

As of the end of 1983, the United States held foreign currency reserves totaling $6.3 billion equivalent: the Federal Reserve held foreign currency balances of $3.7 billion, and the Exchange Stabilization Fund of the Treasury held the remaining $2.6 billion.

Internationalization of Banking

International banking has grown vigorously over the past two decades. During this period, international trade and investment have expanded more rapidly than world economic activity. In addition, the oil price increases of the middle and late 1970s generated surplus funds for some countries and the desire to borrow on the part of others. In response to these and other conditions, U.S. and foreign banks not only continued traditional business with nonresidents at their own domestic offices, but

1. Special drawing rights in the International Monetary Fund are unconditional credit lines created on occasion by agreement of the members of the Fund to supplement their international reserve assets. SDRs are allocated to members in accordance with an accepted formula.

also rapidly expanded activity in each other's national markets and in the Eurocurrency markets. The location of foreign banking business depended on such factors as the business needs of customers, the scope of operations permitted by the legal and regulatory framework, and tax considerations.

The Anatomy of Internationalization

Part of the international activity of U.S.-chartered banks consists of lending to and accepting deposits from foreign customers at the banks' domestic offices (including their international banking facilities, which are discussed below); however, the bulk of the international business of these banks takes place at their foreign offices. Total assets of the foreign branches, net of claims on related offices, increased by 200 percent from the end of 1973 to December 1983, reaching a level of more than $300 billion (chart 5.1). Some operations of the branches involve transactions with U.S. residents, particularly with their own head offices, but most branch activity is with foreign customers.

In addition to branches located offshore, U.S. banks have used foreign-incorporated subsidiaries, either wholly owned or jointly owned with other banks, to expand their activities. The foreign subsidiaries of U.S. banks have grown rapidly in recent years: total assets of foreign subsidiaries, net of claims on related offices, increased from less than $20 billion in December 1973 to an estimated $68 billion in December 1983.

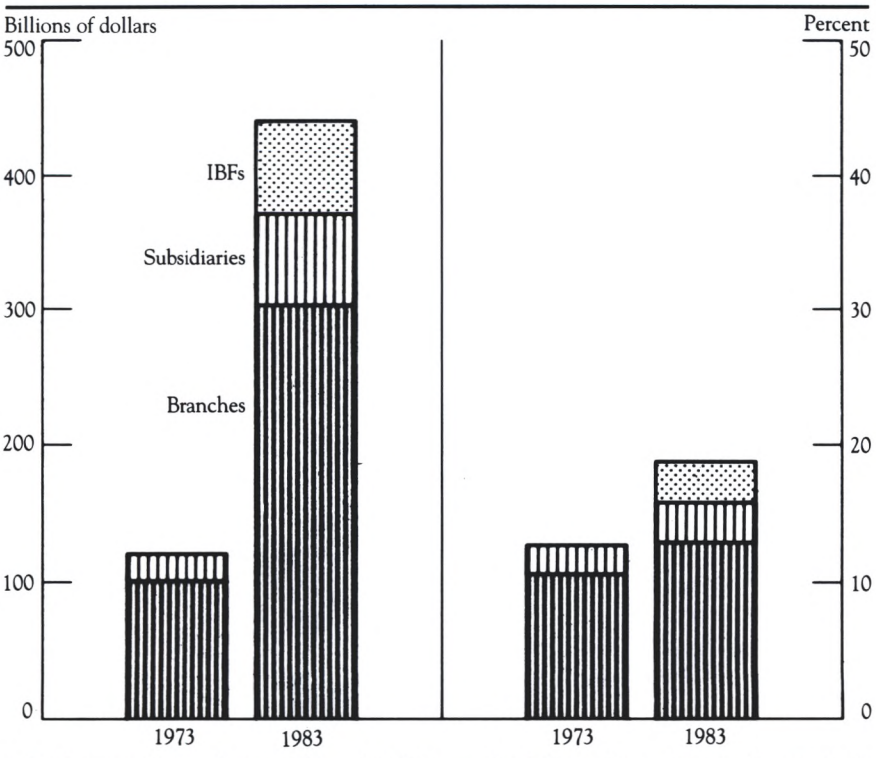
Most of the activity at foreign branches and subsidiaries is Eurocurrency business—that is, taking deposits and lending in currencies other than that of the country in which the banking office is located. Eurobanking is usually free of reserve requirements and some other constraints, although, as explained below, the Federal Reserve imposes reserve requirements on certain Eurobanking activities of banks with offices in the United States.

The U.S. dollar is the most widely used Eurocurrency, both generally and at foreign branches and subsidiaries of U.S. banks. At the end of 1983, foreign branches of U.S. banks had dollar liabilities to unrelated entities of about $237 billion, or some three-quarters of their total liabilities to such entities.

Multinational banks borrow and lend in the interbank market both to adjust the maturity structure of their portfolios and to free themselves from the need to balance exactly their liabilities to and claims on nonbanks. A substantial portion of both the liabilities and assets of the foreign branches of U.S. banks consists of deposits placed with, or accepted from, the offices of other banks.

The expansion of U.S. banks abroad beginning in the 1960s had a counterpart in the rapid growth of foreign bank operations in the United States in the 1970s. At the end of 1983, about 225 foreign banks from 52 countries operated more than 500 agencies, branches, and subsidiary commercial banks in the United States. The growth of the assets of U.S. offices of foreign banks is shown in chart 5.2. These offices actively participate in domestic money markets and in the market for loans to large businesses.

Chart 5.1
Total Assets at Foreign Offices and IBFs of U.S.-Chartered Banks, Dollar Volume and Percentage of Worldwide Assets of U.S.-Chartered Banks, December 1973 and December 1983[1]

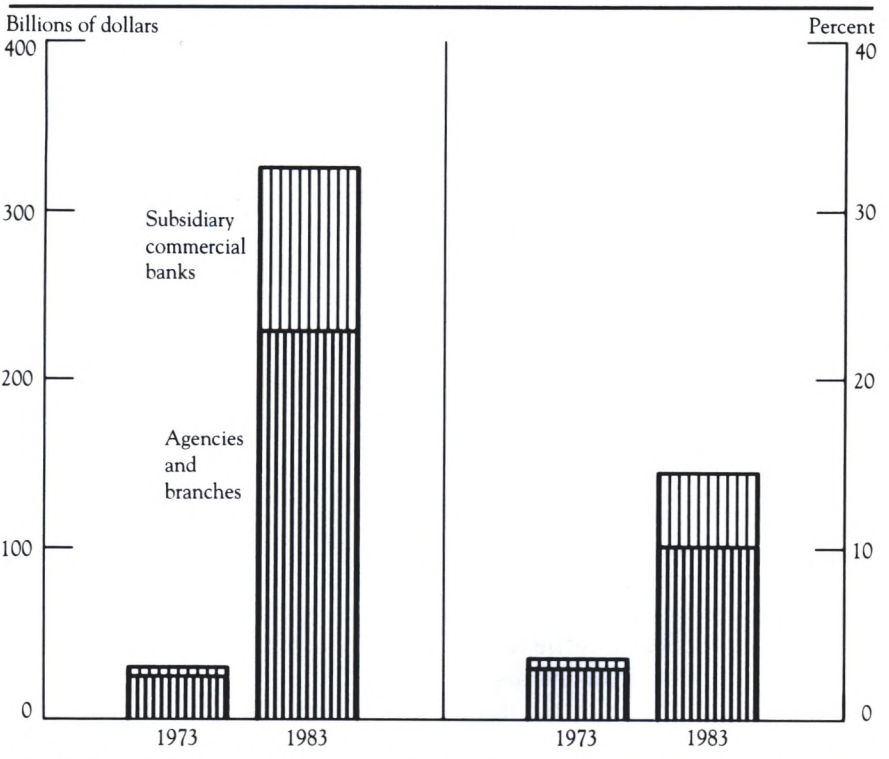


1. Total assets at foreign offices and IBFs exclude claims on related offices—that is, claims on the parent bank and its foreign branches and subsidiaries.

In recent years foreign bank and nonbank investors have gained access to the U.S. banking market by acquiring controlling interests in U.S.-chartered banks. As of December 1983, foreign investors of all types were the majority owners of about 135 U.S. banks, including several large banks, with total assets of $125 billion in their U.S. offices.

The responsibilities of the Federal Reserve for the supervision and regulation of the international activities of U.S. banks, and for the U.S. activities of foreign banks, are discussed in chapter 6.

Chart 5.2
Total Assets at U.S. Offices of Foreign Banks, Dollar Volume and Percentage of Total Assets of Banking Institutions in the United States, December 1973 and December 1983[1]



1. Banking institutions include U.S.-chartered banks (including U.S. subsidiaries of foreign banks) and U.S. agencies and branches of foreign banks.

Eurobanking, U.S. Monetary Aggregates, and U.S. Reserve Requirements

The network of foreign affiliates developed by U.S. banks has facilitated the holding of Eurodollar deposits by nonbank U.S. residents. Such deposits (held not only at foreign branches of U.S. banks but also at foreign banks abroad) have increased rapidly, especially in recent years, reaching $125 billion by the end of 1983. Because they are close substitutes for deposits at domestic banks, Eurodollar deposits of nonbank U.S. residents at foreign branches of U.S. banks are included in the U.S. monetary aggregate M3, and those having very short (one-day) maturities are also included in M2.[2]

Similarly, foreign borrowings used by banks as part of their managed liabilities in their U.S. operations have been integrated into data on banks' sources of funds, and credit obtained abroad by U.S. nonbanks can be regarded as one of the sources of credit for the U.S. economy. In general, the Eurodollar market has become an important source of funds for many U.S. banks and for some U.S. corporations with direct access to Euromarket financing. However, Eurodollar funding frequently substitutes for other types of funding rather than adding to the total.

To facilitate monetary control and maintain competitive balance between Eurodollar and domestic funding, the Board of Governors imposed a reserve requirement on Eurodollars in 1969. The structure and level of the Eurodollar reserve requirement were altered on several occasions in the 1970s, and again in November 1980, as a step in the implementation of the Monetary Control Act of 1980. As explained in chapter 4, at present net Eurodollar borrowings by banking offices in the United States and direct lending to U.S. borrowers from foreign offices of U.S. banks are subject to reserve requirements comparable to those on nonpersonal time deposits.

The Board of Governors has broad authority to establish reserve requirements on liabilities of foreign offices of U.S. banks and other U.S. depository institutions. However, the close integration of world financial markets, the active competition among financial institutions based in different countries, and the high degree of substitutability among various types of financial instruments would limit the effectiveness of reserve requirements imposed on the liabilities of foreign offices of U.S. depository institutions alone.

2. See chapter 2.

International Banking Facilities

Since December 1981, the Board has permitted U.S.-chartered depository institutions, U.S. agencies and branches of foreign banks, and U.S. offices of Edge act or agreement corporations to establish international banking facilities (IBFs) in the United States. The regulatory environment of IBFs has much in common with that of foreign branches of U.S.-chartered banks.[3] IBFs conduct a loan and deposit business with foreign residents, including foreign banks, and with other IBFs without being subject to reserve requirements or to interest rate ceilings. Funds advanced to a U.S. banking office from its IBF are subject to the Eurodollar reserve requirement in the same manner as funds advanced from its foreign offices.

However, IBFs have been subjected to a number of restrictions that do not apply to foreign branches of U.S. banks. Most of these restrictions were imposed to keep IBF activity from complicating the conduct of domestic monetary policy. An IBF may not accept deposits from or make loans to any U.S. resident except another IBF and the entity establishing the IBF. IBFs are not permitted to issue negotiable instruments because such instruments might be purchased by U.S. residents in the secondary market. In addition, accounts of IBF foreign nonbank customers are required to have a minimum maturity of two days so that they will not be close substitutes for demand deposits at domestic banking offices.

3. IBFs are exempted by statute from insurance requirements of the Federal Deposit Insurance Corporation. A number of states—New York, California, Illinois, and Florida, among them—have encouraged banking institutions to establish IBFs by granting favorable tax treatment under state or local law to IBF operations.

Supervisory and Regulatory Functions

Recognizing the importance of a sound banking system to the health of the economy and financial markets, the Federal Reserve Act cited as one of its purposes "to establish a more effective supervision of banking." The Federal Reserve System shares this responsibility with other federal banking agencies but is unique in its combination of monetary policy and regulatory roles.

In its role as the central bank and as lender of last resort the Federal Reserve has a basic responsibility for the financial stability of the economy. Intrinsic to this responsibility is a concern for the strength and stability of the banking system and for the consistency of the banking structure with the needs of monetary policy. The Federal Reserve brings to its decisions on supervisory and regulatory matters a wide perspective on the financial markets and an awareness of the general effects that actions affecting depository institutions may have on other sectors of the economy. Experience gained in the process of supervision and regulation also enables monetary policy decisions to be made against the background of a more practical and knowledgeable assessment of how such decisions will flow through and interact with the banking and depository system and financial markets generally.

The Federal Reserve's responsibilities for supervising and regulating the activities of depository institutions in the United States include (1) supervision and regulation of state-chartered banks that are members of the Federal Reserve System, all Edge act and agreement corporations, and all bank holding companies;[1] (2) supervision and regulation of the U.S. activities of foreign banking organizations under the International Banking Act of 1978; (3) regulation of the U.S. commercial banking structure through administration of the Bank Holding Company Act of 1956 as amended and, along with other federal agencies, the Bank Merger Act of 1960 and the Change in Bank Control Act of 1978; and (4) regulation of the foreign activities of all U.S. commercial banking organizations that are members of the Federal Reserve System or that conduct their foreign activities through an Edge corporation.

1. Edge act and agreement corporations are discussed below.

The Congress has also assigned to the Federal Reserve regulatory responsibilities for a number of consumer protection statutes, whose coverage oftens extends well beyond banks to other financial institutions and creditors. Generally, the purpose of these statutes—such as the Truth in Lending Act, the Fair Credit Billing Act, and the Equal Credit Opportunity Act—is to ensure that consumers, including bank customers, are adequately informed and are treated in a fair and nondiscriminatory manner when they engage in financial transactions.

Although the terms "bank regulation" and "bank supervision" are often used interchangeably, they actually refer to distinct, but complementary activities. Bank regulation is the formulation and issuance by authorized agencies of specific rules or regulations, under governing law, for the structure and conduct of banking. These laws and regulations establish a framework for bank behavior that fosters the maintenance of a safe and sound banking system and the fair and efficient delivery of services to bank customers. Bank supervision is concerned primarily with the safety and soundness of individual banks, and involves general and continuous oversight to ensure that banks are operated prudently and in accordance with applicable statutes and regulations.

Federal Supervisory Structure

Several governmental bodies share the responsibility for supervising and regulating depository institutions. This supervisory structure has evolved in part out of the complexity of the U.S. financial system, with its many kinds of depository institutions and numerous chartering authorities. It is also the product of the wide variety of federal and state laws and regulations designed to remedy a succession of problems that U.S. commercial banks and nonbank depository institutions have faced over the past century. Three federal bodies—the Federal Reserve, the Office of the Comptroller of the Currency (OCC), and the Federal Deposit Insurance Corporation (FDIC)—with related but somewhat different bank regulatory functions now share authority with bank supervisors of the fifty states in a so-called dual banking system that allows for the chartering, supervision, and regulation of commercial banking organizations at both the federal and the state levels.

This structure involves some overlap of responsibilities. For example, the OCC grants charters to national banks and also has the principal

responsibility for their regulation and supervision, but by statute the Federal Reserve has a general regulatory and supervisory responsibility for the operations of all banks that are members of the Federal Reserve System—including national banks because they are required by law to be members. Similarly, the FDIC has authority over both member and insured nonmember banks because by statute the deposits of national banks and of state-chartered member banks must be federally insured. In practice, however, the several state and the three federal supervisory agencies have established arrangements that substantially reduce the effects of overlaps associated with joint regulatory responsibility. For instance, the FDIC has principal supervisory responsibility for insured nonmember commercial banks and insured state-chartered savings banks; the OCC, for national banks; and the Federal Reserve, for state-chartered banks that are members of the Federal Reserve System and for all bank holding companies.

In addition to the three federal banking supervisory agencies, two federal agencies have primary responsibility for regulating and supervising nonbank depository institutions: the Federal Home Loan Bank Board (FHLBB) and the National Credit Union Administration (NCUA). The FHLBB supervises the Federal Home Loan Bank System and the Federal Savings and Loan Insurance Corporation (FSLIC) and, through them, regulates federally chartered savings and loan associations and federally chartered savings banks, supervises savings and loan holding companies, and shares with the states the supervision of FSLIC-insured, state-chartered savings and loan associations. The NCUA charters, supervises, examines, and provides share insurance for all federally chartered credit unions and has the authority to examine and supervise those state-chartered credit unions that apply and are accepted for NCUA insurance.

The Federal Financial Institutions Examination Council, an interagency body, was established by statute in 1978. Its purpose is to prescribe uniform principles, standards, and report forms for the federal examination of depository institutions—whether banks or thrift institutions—and to promote coordination in other areas of supervision, including coordination among state and federal supervisors. The council is composed by law of the chairmen of the Federal Home Loan Bank Board, the National Credit Union Administration, and the Federal Deposit Insurance Corporation, as well as the Comptroller of the Currency and a Governor of the Federal Reserve Board appointed by the Chairman of that Board.

Scope of Federal Reserve Supervisory Functions

The Federal Reserve has supervisory responsibility over domestic and international operations of all member banks, Edge act and agreement corporations, and U.S. bank holding companies, and over many of the U.S. activities of foreign banking organizations.

Domestic Operations of U.S. Banking Organizations

The Federal Reserve has statutory authority to conduct on-site examinations of all member banks, Edge act and agreement corporations, and bank holding companies. The Comptroller of the Currency has primary responsibility for supervising and examining member banks that are nationally chartered, and the Federal Reserve fulfills its responsibilities for these banks chiefly through reviewing financial reports from the banks and from the OCC. The Federal Reserve System exercises primary supervisory responsibility for and examines only those member banks that are chartered by the states. This supervisory role derives from the Federal Reserve's statutory responsibility for admission of state-chartered banks to membership in the Federal Reserve System. The Federal Reserve and the various state supervisory agencies share authority to examine state-chartered member banks and must approve applications for new branches. However, the Federal Reserve conducts joint examinations with state agencies, or alternates annual examinations with those agencies, and cooperates with the states in other areas to reduce duplication and overlap in the examination and supervision of state-chartered banks.

The examination of a depository institution generally entails (1) an appraisal of the soundness of the institution's assets; (2) an evaluation of internal operations, policies, and management; (3) an analysis of key financial factors such as capital, earnings, liquidity, and interest rate sensitivity; (4) a review for compliance with all banking laws and regulations; and (5) an overall determination of the institution's solvency. In addition to these examinations for the general safety and soundness of state member banks and bank holding companies, the Federal Reserve conducts special examinations of state member banks in certain areas such as consumer affairs; activities of trust departments, stock transfer agents, and municipal securities dealers; and electronic data processing.

The Federal Reserve also is the primary supervisor for bank holding companies under the Bank Holding Company Act of 1956, as amended.

Because most large commercial banks are owned by bank holding companies, this statutory authority accords the Federal Reserve supervisory responsibility for banking organizations that at the end of 1983 controlled about 84 percent of the total deposits of U.S. commercial banks. To ensure the safety and soundness of these institutions, the Federal Reserve conducts on-site inspections of parent bank holding companies and their significant nonbank subsidiaries. These inspections include a review of nonbank assets and funding activities, an evaluation of policies and procedures for managing the holding company and its subsidiaries, and a review for compliance with the Bank Holding Company Act and other relevant banking statutes.

If in the process of an examination, or by any other means, the Federal Reserve determines that the condition of a bank or a bank holding company is not satisfactory, the Federal Reserve is responsible for requiring that the organization take steps to correct the situation. In most cases, when the condition is not too serious, the Federal Reserve will enter into an informal agreement or memorandum of understanding with the bank and its directors concerning the appropriate actions to be taken; in more serious instances a written agreement or cease-and-desist order is issued to direct the bank to take the necessary corrective measures.

When the weaknesses of an individual bank reach a critical level, the Federal Reserve may play a significant role in the design of a plan to provide financial and managerial assistance. Under the emergency provisions of the Bank Holding Company Act and the Bank Merger Act, the Board of Governors can approve the immediate acquisition of a failed or problem bank by a bank holding company or a state member bank. The Federal Reserve works closely with the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and state banking agencies to facilitate these transactions. Occasionally, liquidity assistance may need to be provided through the discount window to problem institutions before their acquisition by another depository institution or liquidation by the insurance authority.

International Operations of U.S. Banking Organizations

The international operations of U.S. banks have undergone significant growth in the past decade, as described in chapter 5. The Federal Reserve has four principal statutory responsibilities with respect to the supervision and regulation of the international operations of U.S. banking organizations that are members of the Federal Reserve System. These respon-

sibilities are (1) authorizing the establishment of foreign branches of member banks and regulating the scope of their activities; (2) chartering and regulating the activities of Edge act corporations; (3) 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; and (4) establishing supervisory policies with respect to foreign lending of member banks.

The Congress has provided scope for U.S. banks to conduct a wider range of activities abroad than they have usually been permitted in this country. The Board was given broad discretionary powers to regulate the overseas activities of member banks and bank holding companies with the aim of allowing U.S. banks to be fully competitive with institutions of the host country in financing U.S. trade and investment overseas. In addition, through Edge act and agreement corporations, banks may conduct a 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 statutes and regulations relating to these corporations ensure that the foreign operations of member banks do not undermine the restrictions on the interstate banking activities of domestic banking organizations.

Primarily through their branches and subsidiaries, U.S. banks have become heavily involved in lending to developing countries. The accumulation of unprecedented indebtedness by some of these countries became a special concern to banking authorities and other officials in the early 1980s, when several large borrowers were unable to maintain debt service. To meet the problem, the International Monetary Fund, commercial banks, and official authorities in the United States and other countries cooperated in helping to arrange interim financing agreements and restructuring of debts in conjunction with adjustment programs developed by debtor countries in consultation with the IMF. Concern over the debt of developing countries also led to enactment of the International Lending Supervision Act of 1983, which significantly increased the oversight responsibilities of the Federal Reserve and other banking agencies.

The International Lending Supervision Act directs the Federal Reserve and other banking agencies to consult with supervisory authorities of other countries to reach understandings aimed at achieving the adoption of effective and consistent supervisory policies and practices with respect to international lending. It also directs them to take a number of steps to strengthen the international lending procedures of U.S. banks. The act provides for the maintenance of special reserves when the quality of an institution's assets has been impaired by a protracted inability of public

or private borrowers in a foreign country to make payments on their external indebtedness or when no definite prospect exists for the orderly restoration of debt service. The act also requires federal banking agencies to establish minimum capital levels for banking institutions, which will strengthen both their domestic and international activities, and to establish regulations for accounting for fees on international loans and for the collection and disclosure of certain international lending data.

U.S. Activities of Foreign Banking Organizations

The International Banking Act of 1978 (IBA) provided for federal regulation of the U.S. operations of foreign banks and granted important new responsibilities to the Federal Reserve for the supervision and regulation of such operations. Enactment of this legislation followed rapid growth in the activities of foreign banks in the United States and an increase in their competitive impact upon domestic markets.

The IBA created a federal regulatory and supervisory structure for the U.S. branches and agencies of foreign banks similar to that applicable to U.S. banks. This policy of "national treatment" promotes competitive equality between domestic and foreign banking institutions in the United States by giving foreign banks operating in this country the same powers and subjecting them to the same restrictions and obligations that apply to U.S. banks. As part of the implementation of national treatment, the IBA limited expansion of interstate deposit-taking and domestic nonbanking activities of foreign banks, provided the option of federal licensing for agencies and branches of foreign banks, and required FDIC insurance for branches that engage in retail deposit-taking.

At the federal level, the IBA apportioned primary supervisory responsibility for U.S. branches and agencies of foreign banks among the three federal banking agencies, according to the type of license and whether the banking office has deposit insurance. In addition, the Federal Reserve was given broad residual and oversight authority for the supervision of all federal and state-licensed branches and agencies of foreign banks operating in the United States. In fulfilling this responsibility, the Federal Reserve must assess the impact and condition of foreign banks operating across state lines. To carry out its responsibilities, the Federal Reserve has statutory authority to examine on site the assets and liabilities of all branches and agencies, but it generally relies upon examinations that state and other federal banking authorities conduct. Under the Bank Holding Company Act and the International Banking Act, the Federal

Reserve also has responsibility to approve, review, and monitor the U.S. nonbanking activities of foreign banking organizations.

The Regulation of Banking Structure

The Federal Reserve System has statutory responsibility for the administration of the Bank Holding Company Act of 1956 as amended, the Bank Merger Act of 1960, and the Change in Bank Control Act of 1978. Under these acts the Board approves or denies the acquisition of banks and closely related nonbanking activities by bank holding companies and permits or rejects certain other changes of control and mergers of banks and bank holding companies.

Bank Holding Company Expansion

The Bank Holding Company Act of 1956 gave to the Federal Reserve the primary responsibility for supervising and regulating the activities of bank holding companies. This act, as amended in 1966 and 1970, was designed to achieve two basic objectives. The first was to control the expansion of bank holding companies to avoid the creation of monopoly or restraint of trade in banking. The second was to limit the expansion of bank holding companies to those nonbanking activities that are closely related to banking, thus maintaining a separation between banking and commerce. This second objective reflects a long-accepted policy of the Congress that the public interest requires a clear separation of banking from unrelated activities.

Table 6.1 shows the growth in bank holding companies and the total deposits of their subsidiary banks. Before 1971, the Congress exempted from regulation companies that owned only one bank because such companies generally owned or controlled very small banks. During the late 1960s, however, many larger banks converted to the one-bank holding company form of organization to take advantage of this exemption and thus to be able to conduct nonbanking activities in the holding company that were illegal for their bank subsidiaries. To preserve the traditional separation of banking and commerce, the Congress amended the Bank Holding Company Act in December 1970 to embrace all one-bank holding companies. Primarily as a result of this new legislation, the number of bank holding companies covered by the statute increased from 121 at the end of 1970 to 1,567 at the end of 1971, while the proportion of

Table 6.1
Number and Deposits of Registered Bank Holding Companies, Selected Years, 1957–83

End of year	Number of holding companies	Domestic deposits of subsidiary banks	
		Amount (billions of dollars)	Percentage of all deposits of U.S. banks
1957	50[1]	15.1	7.5
1960	47[1]	18.3	7.9
1965	53[1]	27.6	8.3
1970	121[1]	78.1	16.2
1971	1,567	297.0	55.3
1975	1,821	527.5	67.1
1980	3,056	840.7	71.0
1981	3,702	937.8	74.1
1982	4,559	1,107.7	79.4
1983	5,409	1,279.4	83.8

1. Includes only bank holding companies that control two or more banks.

commercial bank deposits controlled by these companies increased from 16.2 percent to 55.3 percent. The number of bank holding companies has continued to increase steadily and totaled 5,409 at the end of 1983, when 83.8 percent of all deposits of domestic banking organizations was held by bank subsidiaries of holding companies.

Bank Acquisitions

Under the Bank Holding Company Act as amended in 1970, a bank holding company is defined as any company that (1) directly or indirectly owns, controls, or has power to vote 25 percent or more of any class of the voting shares of a bank; (2) controls in any manner the election of a majority of the directors or trustees of a bank; or (3) exercises a controlling influence over the management or policies of a bank. A company that seeks to become a bank holding company must obtain the prior approval of the Federal Reserve. Any company that qualifies as a bank holding company must register with the Federal Reserve System and file reports with the System. An existing bank holding company must obtain the approval of the Board before acquiring more than 5 percent of the shares

either of additional banks or of permissible nonbanking companies. To limit interstate banking operations by bank holding companies, the Douglas amendment to the act, passed in 1966, provided that a bank holding company operating in one state may not acquire a bank in a second state unless that state authorizes the acquisition expressly by statute. In recent years, some states have done so, generally on a reciprocal basis and only with states in their own regions. Bank holding companies can engage in nonbanking activities that are closely related to banking without geographic restrictions.

In considering applications to acquire a bank or a bank holding company, the Board must take into account the likely effects of the acquisition on banking competition, the convenience and needs for banking services of the community to be served, and the financial and managerial resources and prospects of the holding company and the bank. The Board may not approve any acquisition that would result in a monopoly or that would substantially lessen competition, unless the acquisition's favorable impact on the convenience and needs of the community clearly outweighs its anticompetitive effects.

In assessing the competitive impact of a proposed acquisition by a bank holding company, the Board focuses first on the local banking markets, where customers usually obtain their bank services. If a holding company already has one or more banking offices in the market in which it seeks to acquire a bank, the Board determines the extent to which existing competition would be adversely affected by the acquisition. The Board examines several aspects of market structure other than the combined market shares of the firms involved—for example, the size of the market, in terms of both geographic expanse and the number and sizes of competing firms. The Board also takes into account the degree of competition from thrift institutions in the markets involved. In some cases the absolute size of the deposits of the acquiring organization and of the bank to be acquired is important. The Board may also examine indexes of rivalry such as market concentration ratios (which measure the percentage of the market controlled by the largest banks) and the distribution of market shares, and the way both have changed over time.

If the holding company is not already represented in the markets in which the bank to be acquired operates, the Board examines the likely effects of the acquisition on probable future, or potential, competition. In such an examination, the Board considers factors like the absolute and relative size of the bank to be acquired (as indicated by its rank in these markets and its market share); market concentration; the number of other potential entrants into the markets; and the likelihood that, if the appli-

cation were denied, the would-be acquiring holding company would enter these markets some other way, such as by establishing a newly chartered bank subsidiary.

In addition to competitive considerations, the Board assesses how a proposed acquisition will serve the convenience and the banking needs of the public. Specifically, the Board is interested in whether the acquisition will result in the provision of new or better services, such as the introduction of trust services or longer banking hours, or whether it may mean lower prices for bank services. In this evaluation, the Board also considers the applicant's record in meeting the credit needs of the communities it already serves, including low- and moderate-income areas.

To ensure that the holding company will remain a source of strength to its subsidiaries, the Board also considers carefully the likely effects of a proposed bank acquisition on the financial and managerial resources of both the bank to be acquired and the holding company. Important factors bearing on its final decision are (1) the present capital position of the holding company, the bank, and existing bank subsidiaries, and, if those positions are deficient, the plans the holding company has to augment them; (2) the asset quality, earnings, and liquidity of the bank and of the holding company; (3) the quality of the management of the bank and of the holding company, and any plan the holding company may have for improving the management; (4) the way the holding company intends to finance the acquisition; and (5) the holding company's debt and its ability to service it.

Nonbanking Acquisitions

In enacting the Bank Holding Company Act of 1956, the Congress indicated its intent that, with few exceptions, holding companies be prevented from engaging in nonbanking activities or from acquiring nonbanking companies. At the same time, the Congress recognized that a complete prohibition of holding company involvement in nonbanking activities might not be in the public interest. Over the years, banking organizations had developed considerable expertise in certain bank-related areas, and allowing holding companies to enter these areas could both stimulate competition and improve the financial services available to the public.

Consequently, the Congress provided some exceptions to the prohibition against bank holding companies engaging in nonbanking activities, and the 1970 amendments to the act broadened the exceptions somewhat.

The most important exception is that holding companies may undertake certain activities that the Board determines to be so closely related to banking, or to managing or controlling banks, as to be a proper incident to banking and that would result in benefits to the public. In making its determinations, the Board considers such factors as the risks of the activity, its effects on competition, the potential for an undue concentration of resources, and possible conflicts of interest.

As of early 1984, the Board had ruled that, subject to approval of individual proposals and with certain qualifications, a bank holding company might engage in nineteen activities closely related to banking:

1. Making and servicing loans and other extensions of credit.
2. Operating as an industrial bank.
3. Performing trust activities.
4. Acting as an investment or financial adviser.
5. Leasing real or personal property on a full-payout basis.
6. Making equity and debt investments in corporations or projects designed primarily to promote community welfare.
7. Providing financially related bookkeeping and data processing services.
8. Acting as an agent or broker for credit-related insurance and certain other limited forms of insurance.
9. Acting as an underwriter for credit life insurance and for credit accident and health insurance directly related to extensions of consumer credit by the bank holding company system.
10. Providing financially related courier services.
11. Providing management consulting advice to nonaffiliated bank and nonbank depository institutions.
12. Acting as an agent or broker for the sale at retail of money orders having a face value of not more than $10,000, the sale of U.S. savings bonds, and the issuance and sale of travelers checks.
13. Performing real estate appraisals.
14. Arranging equity financing for commercial real estate.
15. Underwriting and dealing in government obligations.
16. Providing foreign exchange advisory and transaction services.
17. Acting as a futures commission merchant.
18. Providing discount securities brokerage services.
19. Investing in export trading companies (specifically authorized by the Congress in 1982).

In addition, the Board of Governors has approved a limited number of other nonbanking activities for individual bank holding companies because these organizations demonstrated that their unique circumstances afforded

net benefits to the public. Such approvals have included the acquisition of distressed thrift institutions.

Bank Mergers

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

That act requires that all proposed bank mergers between insured banks receive prior approval from the federal bank regulatory agency under whose jurisdiction the surviving bank will have legal status. In other words, if the surviving bank is to be a national bank, the Comptroller of the Currency has jurisdiction; if a state-chartered member bank, the Board of Governors of the Federal Reserve System; and if a nonmember insured bank, the Federal Deposit Insurance Corporation. To foster uniform standards among the three agencies in assessing bank mergers, the act also requires the responsible authority to request reports on competitive factors from the two other banking agencies, and from the Department of Justice as well. Mergers of two bank holding companies come under the jurisdiction of the Federal Reserve, according to provisions of the Bank Holding Company Act.

The Bank Merger Act, as amended in 1966, requires the responsible agency to take into consideration in every case the financial and managerial resources and prospects of the existing and proposed institutions, and the convenience and banking needs of the community to be served. The responsible agency may not approve any merger that could substantially lessen competition, or tend to create a monopoly, unless the agency finds that the probable beneficial effect on the convenience and needs of the community clearly outweighs the anticompetitive effects.

Other Changes in Bank Control

The Change in Bank Control Act of 1978 (Title VI of the Financial Institutions Regulatory and Interest Rate Control Act of 1978) gives the federal bank supervisory agencies the authority to disapprove changes in

control of insured banks and bank holding companies. The Federal Reserve Board is the responsible federal banking agency for changes in control of bank holding companies and state member banks, and the Federal Deposit Insurance Corporation and the Comptroller of the Currency are responsible for insured state nonmember and national banks respectively. The act specifically exempts holding company acquisitions of banks and bank mergers because these transactions are already covered by the statutory and regulatory procedures for approval discussed above.

The act requires that the federal banking agency consider such factors as the financial condition, competence, experience, and integrity of the acquiring person or group of persons, and the effect of the transaction on competition. The Federal Reserve's objectives in its administration of the act are to enhance and maintain public confidence in the banking system by preventing serious adverse effects from anticompetitive combinations of interests, inadequate financial support, and unsuitable management.

Regulatory Responsibilities for Consumer Laws

In recent years, the Federal Reserve has been authorized by the Congress to implement a number of statutes designed to ensure that consumers, including bank customers, have sufficient information and are treated fairly in credit and other financial transactions. To help carry out its responsibilities for consumer protection, the Board is advised by a Consumer Advisory Council, which meets three times a year and is composed of representatives of consumers, creditors, and others concerned with these issues.

The Federal Reserve is responsible for writing and implementing regulations to carry out many of the major statutes protecting consumers in financial transactions. Its responsibilities for enforcement of these laws generally extend only to state-chartered banks that are members of the Federal Reserve System. However, the Board or the Federal Reserve Banks will accept complaints about the policies or practices of any bank and refer them to the appropriate bank regulators.

Consumer Laws

The Federal Reserve has responsibilities for writing rules or enforcing a number of major laws that offer consumers protection in their financial dealings.

The Truth in Lending Act requires disclosure of the "finance charge" and the "annual percentage rate"—and certain other costs and terms of credit—so that consumers can compare the prices of credit from different sources. This act also limits liability on lost or stolen credit cards.

The Fair Credit Billing Act sets up a procedure for the prompt correction of errors on a revolving credit account and prevents damage to credit ratings while a dispute is being settled.

The Equal Credit Opportunity Act prohibits discrimination in the granting of credit on the basis of sex, marital status, race, color, religion, national origin, age, receipt of public assistance, or the exercise of rights under the Consumer Credit Protection Act. The Federal Reserve regulation provides for notice to applicants who have been denied credit of the reason for the denial. It also gives married individuals with jointly held credit accounts the right to have credit histories maintained in the names of both spouses.

The Fair Credit Reporting Act sets up a procedure for correcting mistakes on credit records and requires that the records be used only for legitimate business purposes.

The Consumer Leasing Act requires disclosure of information to help consumers compare the cost and terms of one lease of consumer goods with another, and the cost of leasing with that of buying on credit or for cash.

The Real Estate Settlement Procedures Act requires disclosure of information about the services and costs involved at "settlement," when real property is transferred from seller to buyer.

The Electronic Fund Transfer Act provides a basic framework regarding the rights, liabilities, and responsibilities of consumers who use electronic transfer services and of the financial institutions that offer the services.

The Federal Trade Commission Improvement Act authorizes the Board to identify unfair or deceptive acts or practices on the part of banks and to issue regulations to prohibit them.

Community Reinvestment and Development

Several laws address the issue of lending for housing-related purposes and for the development of communities served by financial institutions.

The Home Mortgage Disclosure Act requires depository institutions to disclose the geographic distribution of their mortgage and home improvement loans. The purpose of the act is to provide to depositors and others information that will enable them to make informed decisions about

whether institutions in metropolitan areas are meeting the housing credit needs of their communities.

The Community Reinvestment Act encourages banks to help meet the credit needs of their communities for housing and other purposes, particularly in neighborhoods of families with low or moderate incomes, while maintaining safe and sound operations. An institution's performance under the act is assessed during the course of bank examinations and is taken into account, along with other factors, when the Federal Reserve considers certain applications for bank mergers and bank holding company formations, mergers, and acquisitions.

Federal Reserve Bank Services

The Federal Reserve Banks, as the operating arms of the nation's central bank, provide a variety of services to depository institutions and to the government of the United States and its agencies. Most of these services relate to the nation's payments system, while others involve safekeeping of securities and fiscal-agency functions, such as holding U.S. Treasury deposits and issuing, servicing, and redeeming U.S. government obligations.

Federal Reserve Bank Services and Pricing

Since its inception, the Federal Reserve System has played an important role in the payments mechanism and in providing certain other services to the nation's depository institutions. A major reason for creating the Federal Reserve was to ensure that the nation had a safe and efficient means for transferring funds within the banking system that was readily available to small banks as well as large ones, and to banks in remote areas of the country as well as those in money centers. As recently as 1980, the Congress, in the Monetary Control Act, reaffirmed the need for Federal Reserve participation in the payments system.

The payments mechanism is at the heart of our highly interdependent financial system, in which billions of dollars are transferred each day. The effects of any disruption of this mechanism could spread quickly, affecting depository institutions, financial markets, and, in the extreme, the economy generally. The Congress has recognized that active participation by the Federal Reserve in the payments system protects against disruption and works to maintain public confidence in the safety and integrity of the financial system as a whole. Through its participation, the Federal Reserve has also improved the efficiency of the payments mechanism by, for example, encouraging technological advances, such as electronic transfers, that have the potential for lowering costs and speeding the flow of funds. The Federal Reserve is especially well positioned to foster such advances when they require widespread cooperation among depository institutions or the participation of a neutral and trusted

intermediary. In addition, it has acted to ensure that all depository institutions have access to adequate payments services.

The Monetary Control Act of 1980, which extended reserve requirements and access to the discount window to nonmember depository institutions, also extended access to Federal Reserve services to all depository institutions. Before that, Federal Reserve Bank services had been available only to member banks. In addition, the act required the Federal Reserve to charge fees to depository institutions for many of these services, which had previously been free to member banks.[1] As the act specified, the Federal Reserve has set fees in such a way that over the long run the revenues from these services will recover the costs of providing them. So that it will be competing on a fairer basis with private providers of these services, the Federal Reserve is required to include in its costs not only its actual operating expenditures, but also estimates of the taxes and cost of capital it would incur if it were a private firm—the so-called private sector adjustment factor. By specifying that the Federal Reserve charge for services in this way, the Congress intended to encourage economic use of payments services through the explicit pricing of such services and to promote competition among public and private providers of services, and thus to enhance the efficiency of the payments mechanism. During 1984, revenues of the Federal Reserve for all priced services exceeded the costs—including those imputed for taxes and capital—of such services.

The Federal Reserve Board reviews all major issues involving the pricing and level of services and often submits proposals for public comment before putting them into effect. Decisions concerning priced services are made independently of those related to the Federal Reserve's role as regulator, supervisor, and lender of last resort. Pricing procedures established by the Board are aimed at assuring that the Federal Reserve competes in ways that are fair to users of Federal Reserve services and to other providers of similar services, and that are in keeping with the responsibilities of a public agency to promote the public interest.

Depository institutions may pay for Federal Reserve services directly, or by applying credits that are earned on clearing balances held at the Federal Reserve.[2] Clearing balances are deposits of banks and thrift insti-

1. The Federal Reserve is not required to charge depository institutions for certain services associated with the issuance of currency and coin and with its fiscal-agency functions.
2. So-called earnings credits are calculated by multiplying the clearing balance up to a certain maximum by a rate based on the federal funds rate.

tutions at the Federal Reserve in addition to any reserve balances they may be required to maintain. Institutions hold clearing balances if their required reserve balances are not large enough to cover the dollar volume of their check clearings and other transfers of funds through the Federal Reserve, or to accumulate earnings credits.

The Federal Reserve and the Payments System

In carrying out its responsibilities, the Federal Reserve is involved in many facets of the payments system, including provision of currency and coin, processing and clearing of checks, providing for the settlement of checks and other types of payments, and wire transfers of funds.

Currency and Coin

An important function of the Federal Reserve System is to ensure that the economy has enough currency and coin to meet the public's demand. Currency and coin are put into or retired from circulation by the Federal Reserve Banks, which use depository institutions as the channel of distribution. When banks and other depository institutions need to replenish their supply of currency and coin—for example, when the public's need for cash rises around holiday shopping periods—they order the cash from the Federal Reserve Bank or Branch in their area, and the face value of that cash is charged to their accounts at the Federal Reserve. When the public's need for currency and coin declines, and depository institutions return excess cash to a Federal Reserve Bank, its value is credited to the account of the depository institution.

Virtually all currency in circulation is in the form of Federal Reserve notes, which are printed by the Bureau of Engraving and Printing of the U.S. Treasury. Before being issued to the public, notes must be secured by legally authorized collateral, most of which is in the form of U.S. government and federal agency securities held by the Federal Reserve Banks. Coins are produced by the Treasury's Bureau of the Mint.

Currency and coin are used primarily for small transactions. In the aggregate, such transactions probably account for only a small proportion of the total value of all transfers of funds. As table 7.1 shows, at the end of 1983, the total amount of currency and coin in circulation was around $172 billion.

Table 7.1
Currency and Coin in Circulation, Selected Years, 1935–83

Millions of dollars

Year	Amount
1935	5,882
1945	28,515
1955	31,158
1965	42,056
1975	86,547
1981	145,566
1982	156,158
1983	171,935

Check-Processing Services

About 25 percent of the checks written in the United States are deposited in the same institution on which they are drawn. Dealing with the remaining checks requires a mechanism for exchanging ("clearing") them and providing for the related movement of funds ("settlement") among the depository institutions that are involved. When a depository institution receives checks drawn on other institutions, it may send them for collection to those institutions directly, or indirectly through a local clearinghouse, a correspondent institution, or a Federal Reserve office. Chart 7.1 illustrates the process.

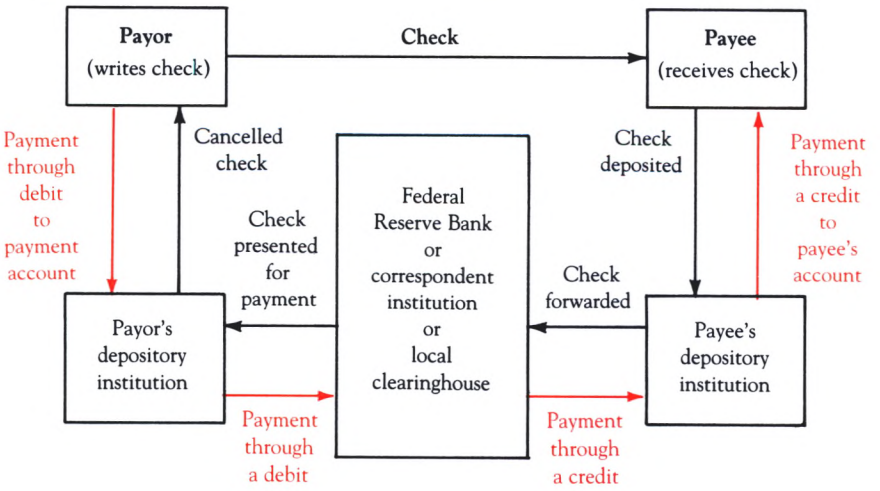
At the end of 1983, the Federal Reserve maintained forty-eight check-clearing centers, which were collecting some 57 million items each business day. These facilities are located at the twelve Federal Reserve Banks, at twenty-five Branches of these Banks, and at eleven other offices around the country called regional check-processing centers. The Federal Reserve credits the accounts of receiving institutions for the value of deposited checks in accordance with the "availability schedule" of the Reserve Banks. This schedule reflects the length of time it normally takes for the Federal Reserve to receive payment from the institutions on which the checks are drawn; credit is usually given on the day of deposit or the next business day, and rarely later than the second business day following deposit.

Although the accounts of payee institutions (those that send checks to the Federal Reserve for collection) are credited according to the availability schedule noted above, the accounts of payor institutions (those

on which the checks are drawn) are not debited for the value of checks until the day the checks are actually delivered to those institutions by the Federal Reserve. When a check deposited with the Federal Reserve is not collected until after the credit is given, the same deposit may be on the books of two different institutions at the same time for a brief period. This phenomenon is called Federal Reserve float.

To minimize float while making speedy payments, the System utilizes air charter services, commercial airlines, and other courier services to accomplish the rapid delivery of checks among Federal Reserve offices. (About 40 percent of all checks that clear through the Federal Reserve are payable through an office outside the area in which they are deposited.) In the early 1980s, the Federal Reserve made substantial improvements in these and other procedures in order to speed the movement of checks back to the payor institutions. By the second quarter of 1984, Federal

Chart 7.1
Elements of the Check-Clearing System



Transactions are settled at the Federal Reserve or a correspondent institution by crediting the deposit account of the payee's depository institution and debiting the deposit account of the payor's depository institution.

Reserve check float, which had been $4 billion per day three years earlier, had fallen to about $500 million. For the most part, this reduction in float has occurred, in effect, at the immediate expense of the payor institutions through more prompt debiting of their Federal Reserve accounts. The Federal Reserve recovers the cost of the remaining check float, as required by the Monetary Control Act (MCA), by charging the payee institution directly or by adjusting its balances held at the Federal Reserve.

The estimated total number of checks written has risen dramatically since the early 1950s (table 7.2). The proportion of total checks cleared by the Federal Reserve began increasing in the mid-1960s and by 1981 had reached 45 percent. The trend then reversed as private clearing arrangements expanded in response to the imposition of fees by the Federal Reserve for check-collection services.

Electronic Fund Transfers

Electronic fund transfer (EFT) systems have been evolving throughout the world over recent decades as a faster, more secure, and less costly way of transferring money. In contrast to transfers authorized by check, those made electronically may be initiated through computers, magnetic tape, plastic cards, or telephones.

Table 7.2
Number of Checks, Total and Collected by the Federal Reserve, Selected Years, 1920–83

Billions of checks

Year	Total checks written	Collected by the Federal Reserve	
		Number	Percent of total
1920	n.a.	.5	n.a.
1930	n.a.	.9	n.a.
1940	n.a.	1.1	n.a.
1952	7.0	2.3	33
1967	17.9	5.4	30
1973	22.5	10.0	44
1981	35.5	15.9	45
1982	36.9	13.9	38
1983	38.4	14.3	37

n.a. Not available.

The Federal Reserve Banks are directly involved in two types of EFT services: transfers of funds by wire and through automated clearinghouses. Wire transfers of funds may be executed through the so-called FedWire, which connects Federal Reserve offices, depository institutions, the U.S. Treasury, and other government agencies. FedWire is typically used to transfer large dollar payments. All such transfers are completed on the same day, usually in a matter of minutes, and are guaranteed final when the receiving institution is notified of the credit to its account. FedWire may be used by depository institutions to transfer funds for their own account that result from purchases or sales of federal funds, to move balances at correspondent banks, and to send funds to another institution on behalf of customers. Transfers on behalf of customers include flows of funds associated with the purchase or sale of securities, the replenishment of business demand deposits, and other time-sensitive payments. The Treasury Department and other federal agencies use FedWire extensively to disburse and collect funds.

Wire transfers grew rapidly from the mid-1970s into the early 1980s, but growth has moderated in recent years, in part because of the natural maturing of this service. During 1983, FedWire handled about 38 million transfers of funds valued at $84 trillion.

First established in the early 1970s, automated clearinghouses (ACHs) have evolved into a nationwide clearing and settlement mechanism that provides processing for electronically originated credits and debits. The Federal Reserve operates a number of ACHs, which provide clearing services to all depository institutions for automated entries. Several privately operated ACHs offer similar services to their members. Since 1978, the Federal Reserve has transmitted ACH payments through a nationwide network, and it provides interregional services to privately operated ACHs. ACHs offer such benefits as more timely payments, increased convenience, and greater security for certain types of payments.

Automated clearinghouses transfer funds by electronic means instead of paper checks. In an ACH operation, depository institutions, acting on a customer's instructions, transmit debits and credits via delivery of magnetic tapes or telecommunications links to the local ACH facility, much as they would physically deliver checks to a check-clearing facility. For example, with the authorization of the payees, businesses and governments can make many of their recurring payments for salaries, wages, commissions, interest, dividends, annuities, social security, welfare, pensions, and the like through ACHs, with the proceeds credited directly to the payee's account at his or her depository institution without the prior issue of a paper check. Consumers may also authorize their depository

institutions to make regular, recurring payments through ACHs for such obligations as mortgages or utility and insurance bills. ACH volume has grown in recent years, but in 1984, ACHs still accounted for only about 400 million transactions, a relatively small proportion of total payments. Currently, the U.S. government initiates over half the number of ACH payments.

Net Settlement

The Federal Reserve Banks provide a service commonly called net settlement for such private participants in the payments mechanism as check clearinghouses, automated clearinghouse associations, and wire transfer systems, that normally process a large number of transactions among their member institutions. Net settlement involves posting net debit and net credit entries generated by such organizations to the accounts of the individual institutions on the books of the Federal Reserve. At the end of each business day, the organization sums all transactions for each institution and delivers or transmits to the Federal Reserve the net accounting entries to effect settlement among the participating institutions.

Other Federal Reserve Bank Services

The Federal Reserve Banks provide a variety of other services to depository institutions, most of which fall into the broad categories of securities safekeeping and transfer, and noncash-collection services.

Federal Reserve safekeeping services have important advantages for depository institutions in terms of security and convenience. A depository institution may request its Federal Reserve Bank to maintain custody of securities that are issued by the U.S. government and its agencies and by state and local governments. These securities may be deposited with a Reserve Bank or Branch for purely custodial purposes, or to be available to collateralize borrowings from the Federal Reserve or deposits of public funds held by the institution. A large portion of the securities held for depository institutions is pledged as collateral. On instructions, the Reserve Banks will accept deposits of securities, transfer securities between depositors' custodial and collateral accounts, effect deliveries of securities, and process associated payments.

The noncash-collection service is similar to the check-collection service. Federal Reserve offices accept the following items for collection: maturing or matured municipal coupons; called, maturing, or matured municipal securities; bankers acceptances; bills of lading; and drafts, checks with documents attached, and other checks that cannot be handled as cash items through the normal check-processing operation.

Fiscal-Agency Functions of the Federal Reserve System

As fiscal agents of the United States, the Federal Reserve Banks and their Branches function as the federal government's banker. They maintain the Treasury's "checking account," clear Treasury checks drawn on that account, issue and redeem government securities, and perform other services as directed by the Treasury. The Federal Reserve Banks also perform fiscal-agency services in connection with the financial activities of various federal and federally sponsored agencies. The Reserve Banks are reimbursed by the Treasury and the federal agencies for much of the expense incurred in the performance of fiscal-agency functions.

The Treasury maintains special interest-earning accounts (called Treasury tax and loan accounts) at more than 15,000 depository institutions throughout the country. These Treasury depositories accept tax receipts directly from individuals and corporations and report the amount of those receipts to a Federal Reserve office and to the Internal Revenue Service. When the Treasury wishes to use these funds, they are transferred to a Federal Reserve Bank.

The federal government makes most of its disbursements to the public from its funds on deposit at the Federal Reserve Banks. Such payments, resulting in a debit to the Treasury's account at the Reserve Banks, are made mainly by check; but in the case of certain repetitive payments, such as those for social security and employees' salaries, an increasing share is being processed through ACH facilities and deposited directly to the accounts of the recipients at depository institutions.

As fiscal agents for the United States, the Federal Reserve Banks also handle the operations involved in selling new Treasury securities, servicing outstanding issues, and redeeming maturing issues. When the Treasury offers new issues of marketable securities to the public, the Federal Reserve Banks disseminate information regarding the issues, accept tenders from customers, collect payments, credit the Treasury's account for the proceeds, and effect delivery of the securities. Most marketable Treasury

securities are not delivered to and retained by investors as certificates ("definitive" form), but rather are recorded and stored for the account of depository institutions (often acting on behalf of the ultimate investors) on the books of the Federal Reserve ("book entry" form). Securities then are generally transferred from one book-entry account to another, using the Federal Reserve's communication network, and principal and interest are paid automatically on the due dates by crediting the accounts of the depository institutions.

The Reserve Banks and Branches also issue, service, and redeem U.S. savings bonds. In addition, Federal Reserve Banks and Branches are authorized to qualify depository institutions and corporations as issuing agents and payment agents for savings bonds.

The Federal Reserve also acts as fiscal agent for foreign central banks and international organizations such as the International Monetary Fund. Services of this kind are provided primarily by the Federal Reserve Bank of New York. The most important services rendered on a day-to-day basis for foreign official accounts are the receipt and payment of funds in U.S. dollars, and investment and custody transactions. Foreign official institutions channel a significant portion of their U.S. dollar receipts and payments through their accounts at the New York Federal Reserve Bank. The New York Federal Reserve Bank also buys and sells foreign exchange for these official institutions with corresponding debits and credits to their dollar balances at the Bank. The Bank imposes a charge for most of its investment and custodial services. As of December 1983, the New York Bank held, as custodian for these foreign accounts, around $125 billion in marketable and nonmarketable U.S. Treasury and agency securities, primarily Treasury bills. It also held for foreign central banks 341 million fine troy ounces of gold valued at $132 billion at the free market price of $388 an ounce prevailing at the time.

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