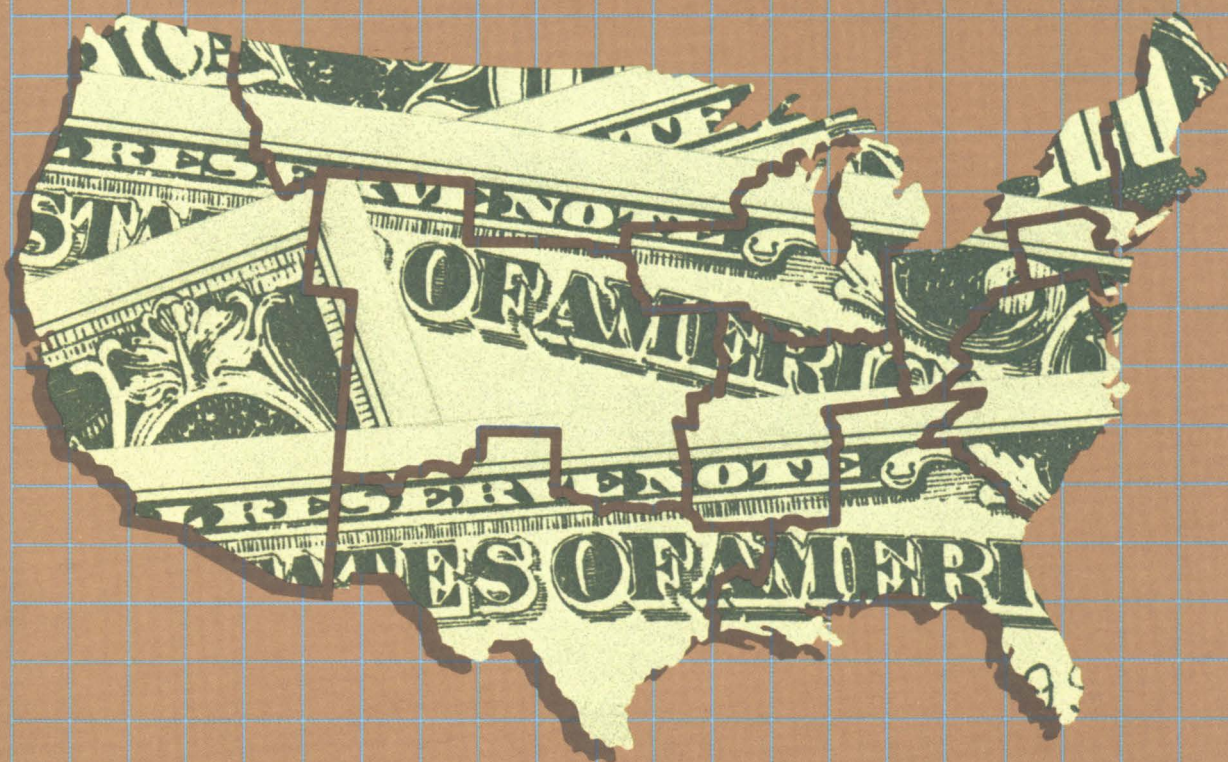


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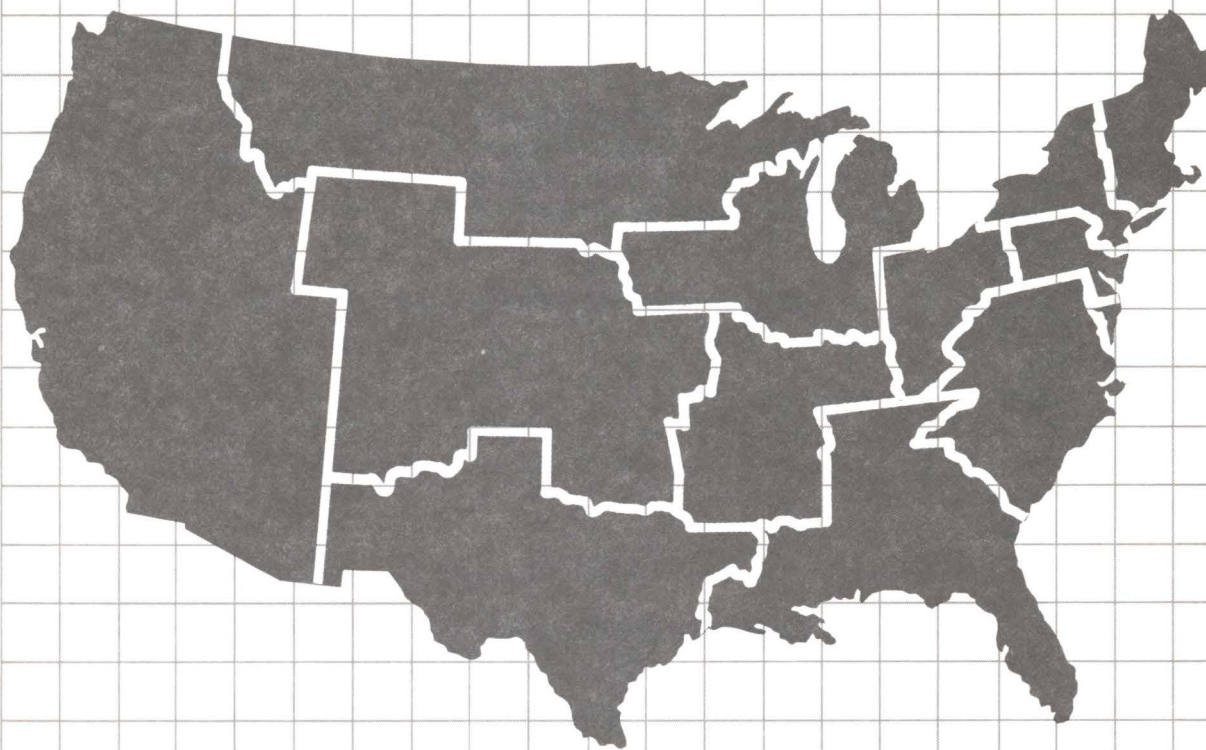
*A Primer
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Federal Reserve Bank of Richmond

*A Primer
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by Alfred Broaddus

Federal Reserve Bank of Richmond • Richmond, Virginia • 1988

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PREFACE

For many years the Federal Reserve Bank of Richmond published and distributed an introduction to the Federal Reserve System and the role of the Fed in the U.S. economy, titled "The Federal Reserve at Work." This booklet was written originally by B.U. Ratchford and Robert P. Black and was subsequently updated by Aubrey N. Snellings. Because of its popularity, the booklet went through six editions and numerous printings between 1961 and 1974. The present booklet replaces "The Federal Reserve at Work." Like the earlier publication it is intended for laymen who wish a nontechnical but substantive description of the Federal Reserve and its role in the formulation and implementation of U.S. economic policy. It outlines the System's structure and its various functions and then discusses the conduct of monetary policy with particular attention to events in the late 1970s and early 1980s.

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INTRODUCTION

Most Americans have heard of the Federal Reserve System—or, more simply, “the Fed,” as the institution is widely known in financial and political circles, or “the System,” as it is frequently referred to by its employees and others. Most Americans also know that the Fed is the nation’s central bank and that its policies and actions are frequently in the news and the subjects of intense debate. Many citizens, however, have only a vague and imprecise idea of what the System actually does. Ask the man on the street what the Fed does, and he will likely respond that the Fed “controls interest rates,” or that it “takes care of the money supply,” or that it “watches over banks.” When he is pressed, however, to say what interest rates the Fed “controls,” or how it exercises this control, or what the money supply is, or exactly what the Fed’s responsibilities regarding the banking system are, he will frequently come up short.

The purpose of this article is to answer some of these questions for people who would like to know more about the System, but who do not have the time to study the institution in detail. Particular attention will be paid to the effects of the Fed’s actions on the general economy and on banking and other financial markets, but all of its major functions will be discussed. The article is organized as follows. Section 1 describes the Fed’s principal functions and its basic objectives in performing each function. Section 2 outlines the Fed’s somewhat complex organizational structure and indicates how this structure developed. Finally, Section 3 discusses Fed monetary policy. Although the Fed has important responsibilities regarding the regulation of financial institutions and the maintenance of the nation’s payments mechanism, its preeminent task is to formulate and implement national monetary policy. In addition to outlining some of the mechanical aspects of monetary policy, Section 3 will also attempt to convey some of the flavor of current policy issues.

SECTION 1: SYSTEM FUNCTIONS AND OBJECTIVES

The Fed's principal functions are similar to those performed by most other central banks throughout the world. Specifically, the Fed is responsible for conducting monetary policy, maintaining the liquidity, safety, and soundness of the banking system, and assisting the fiscal authority—in this case the U.S. Treasury—in carrying out some of its duties. In addition, the Fed actively participates in the maintenance and operation of the U.S. payments system and in the continuing effort to increase the efficiency and safety of this system. In recent years Congress has also charged the Fed with promulgating several new laws designed to (a) protect consumers in their transactions with banks and other financial institutions and (b) promote community development and reinvestment.

Monetary policy As noted above, the preeminent function of the Fed is the conduct of monetary policy. In its broadest sense, the term *monetary policy* can refer to any action or actions a government or a central bank takes that influence the institutional character of a nation's monetary system or, at a particular time, monetary and financial conditions in the country. In the United States in the 1980s, the term typically refers to Fed actions affecting the growth rate of the nation's money supply, interest rates, and other financial and economic variables, either in the short run or over a longer time period.

Although the Fed conducts monetary policy on a day-to-day basis, the basic objectives of policy are mandated by Congress. The initial objective of the System, as seen by the authors of the Federal Reserve Act, was to provide a more elastic currency to reduce the incidence of banking and financial panics, which had plagued the American economy in the nineteenth and early twentieth centuries. As time has passed, however, the mandate has been broadened as monetary policy has rightfully come to be recognized as a central element of overall

national economic policy. The most direct statement of the present mandate is given in Section 2A of the Federal Reserve Act, as amended by the Full Employment and Balanced Growth Act (the so-called Humphrey-Hawkins Act) of 1978:

The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long-run growth of the monetary and credit aggregates commensurate with the economy's long-run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.

Further, in formulating policy in the short run, the System is to take account of “. . . past and prospective developments in employment, unemployment, production, investment, real income, productivity, international trade and payments, and prices. . . .” This mandate is obviously very comprehensive and subject to differing interpretations. In broad terms, however, it is generally understood to mean that the Fed should maintain monetary conditions which encourage real economic growth at a rate consistent with stability in the price level and in financial markets, and balance in international transactions.

Two points should be made about the Fed's monetary policy mandate and the objectives it includes. First, since the broad goals of monetary policy are essentially the same as the longer-run objectives of overall national economic policy, monetary policy should work in concert with the other elements of national policy rather than at cross-purposes with them. It is particularly desirable that monetary policy and fiscal policy (i.e., the federal government's budgetary policy) be mutually supportive in a joint pursuit of the broad goal of sustainable real economic growth with stability of the price level. For example, a highly expansive fiscal policy, as indexed by rapid growth in federal expenditures, might result in political pressure on the Fed to finance the growth in expenditures through monetary expansion, which would risk increasing the rate of inflation. Some economists and others have argued that excessively expansive fiscal policy in the 1980s has put upward pressure on U.S. interest rates and the foreign exchange value of the U.S. dollar, which in turn has produced a more expansive monetary policy than is consistent with longer-run price level stability. Alternatively, an excessively expansive or contractionary monetary policy would obviously disrupt and perhaps defeat the efforts of other arms of the government to promote growth, high employment, and economic stability.

Second, even though the legislative mandate cited above explicitly mentions a large number of economic variables, including production, employment, prices, interest rates, and international trade, experience suggests that it would be unwise, and potentially detrimental to the achievement of the broader goals of national economic policy, to conclude that the Fed can “fine-tune” the economy with monetary policy. During the 1960s, some economists and policymakers believed it was possible to determine empirically the trade-offs between certain important economic variables, such as employment and the rate of inflation, and subsequently to achieve rather precisely specified combinations of economic results via the adroit manipulation of monetary and fiscal policy instruments. Disappointment with the actual results of this approach to policy has produced a greater awareness of the limitations of macroeconomic policy in general and monetary policy in particular. Specifically, the research of Milton Friedman and others indicated that the Fed’s monetary policy actions affect the economy with lags or delays that are both long and difficult to predict.¹ As a result of these lags and their variability, efforts to manipulate the economy via monetary policy may be destabilizing. Further, the “rational expectations” school of monetary economics, which developed in the 1970s, has emphasized how the public’s tendency to anticipate Fed policy actions reduces or eliminates the effect of these actions on real variables such as employment and output.² Against this background, some students of monetary policy have suggested that the Fed’s policy mandate be narrowed to emphasize and give priority to the System’s responsibility to maintain price stability on the grounds that price stability is the only feasible objective of monetary policy.³

Liquidity and stability of financial markets Closely related to the monetary policy responsibilities just outlined is the Fed’s responsibility to maintain the liquidity and stability of banking and other financial markets. At the time the System was created, in 1913, commercial banks were the dominant financial institutions. Therefore, maintenance of the liquidity and stability of the financial system amounted largely to maintenance of the liquidity and stability of the commercial banking system. The principal tool available to the Fed for this purpose is the

¹ See Friedman [11].

² For an excellent nontechnical discussion of rational expectations, see McCallum [17].

³ See Black [2].

so-called discount window, through which the Fed is able to loan reserve funds to banks and other depository institutions under certain specific conditions. Most such loans are very short term and are made to enable borrowers to cover unanticipated deposit outflows, temporary difficulties in obtaining funds from other sources and similar contingencies. Longer-term loans—referred to as “extended credit”—are also available to deal with seasonal liquidity problems and certain other circumstances. Prior to 1980, only commercial banks that were members of the System had regular access to the discount window. The Monetary Control Act of 1980 extended access to all institutions having deposits subject to the System’s reserve requirements, which, in addition to commercial banks, includes savings banks, savings and loan associations, credit unions, and U.S. branches and agencies of foreign banks. This extension of access to the window was appropriate in view of the increasing importance of nonbank financial institutions in the American financial system.

It should be emphasized that the Fed’s responsibility to ensure the liquidity of the financial system is indeed a responsibility to the *system* rather than to individual institutions. The purpose of the Fed’s lending activities is to prevent liquidity problems at a single institution or a small number of institutions from spreading and disrupting the financial system as a whole. Therefore, in managing the discount window and establishing operational policies for the window, the Fed is guided by concern for the financial system. Also, the Fed strongly encourages institutions to seek funds from other sources before coming to the window. In its role as guardian of the liquidity of the financial system, the Fed is sometimes referred to as the “lender of last resort.”

In addition to the discount window, the Securities and Exchange Act of 1934 required the Fed to regulate extensions of credit by securities brokers, banks, and other lenders for the purpose of buying or carrying specified securities—primarily stocks and related instruments. The purpose of these so-called margin requirements, which the System administers under its Regulations G, T, U, and X, is to limit potentially destabilizing fluctuations in financial asset prices that might result from excessively leveraged financial transactions.

Regulation and supervision of banks and other financial institutions

In addition to its desire for a more elastic currency, Congress also intended, in creating the Fed, to improve the regulation and supervision of commercial banks as another way of reducing the incidence of bank

failures and resulting financial panics. To this end, the Fed has a number of regulatory and supervisory duties aimed at ensuring the safety and soundness of the banking system and the efficiency of its operations. Many of these responsibilities were specified in the original Federal Reserve Act; others have been added by amendments to that Act and other legislation. The System shares these responsibilities with other federal financial regulatory agencies and with state regulatory agencies in accordance with applicable federal and state laws.

The terms *regulation* and *supervision* are often used loosely as synonymous, but they actually refer to distinct Fed duties. Regulations are rules that the System establishes and administers in conformance with federal law, such as the various regulations aimed at maintaining a competitive banking market structure. Supervision, in contrast, refers to the System's oversight—largely through on-site examinations—of individual banks, bank holding companies, and certain other institutions to ensure that they are being operated and managed in a safe and sound manner. In addition to regulating and supervising the domestic activities of U.S. banks and bank holding companies, the Fed now regulates and supervises the activities of foreign banking organizations in the United States and many of the activities of U.S. banking organizations in foreign countries. These internationally oriented duties have assumed increased importance in recent years due to the dramatic increase in international banking activities.

There have been substantial changes in both the form and content of the Fed's regulatory duties in the 1980s, due partly to the landmark Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA). Before 1980, the Fed's reserve requirements (to be discussed in greater detail in Section 3 of this article) applied only to commercial banks that were members of the System. The DIDMCA extended these requirements to nonmember banks and other depository institutions. While expanding the scope of the Fed's regulatory authority in this respect, the Act reduced it in several other areas. Especially important were (1) the phased elimination of interest rate ceilings on time deposits, which the Fed had regulated for many years under its Regulation Q, and (2) the authorization, effective at the beginning of 1981, of interest-bearing NOW (for negotiable order of withdrawal) accounts nationwide. The combined effect of these two changes was to eliminate, by the end of the phase-out period in early 1986, all interest ceilings on all deposits except ordinary demand deposits for which the prohibition of the payment of interest remains in effect. Since NOW accounts are functionally

equivalent to demand deposits, however, interest can now be paid on transactions accounts, and the rate is not subject to a ceiling. These changes are what most people have in mind when they speak of the “banking deregulation” of the 1980s. By increasing the cost of many sources of funds, the changes have had a substantial impact on the day-to-day management and operations of depository institutions. They have also affected the way the public manages its money balances and other liquid assets. Consequently, while deregulation has reduced the Fed’s regulatory duties in a formal way, it has presented new challenges during the transition in both the supervisory area and in the conduct of monetary policy.⁴

In addition to the effect of deregulation, the economic turbulence of the early 1980s has strongly challenged the Fed’s supervisory resources as well as those of other federal supervisory agencies and state agencies. The severe recession in 1981 and 1982, the decline in agricultural land values and farm income that accompanied the recession and persisted after it ended, and the sharp drop in petroleum prices and some other commodity prices in 1985 and 1986 reduced the quality of some assets held by individual banks and led to a significant increase in the rate of individual bank failures. Faced with these problems, the Fed took steps in late 1985 to strengthen its supervision of state member banks and bank holding companies.

Although the Fed has only limited formal regulatory and supervisory duties outside the commercial banking sector, it is increasingly recognized that the System’s overall responsibility for the health and stability of the financial system requires it to assist in dealing with specific problems in other financial sectors and markets. Specifically, the Fed played an active role in containing certain short-run disruptions that arose in the largely unregulated government securities markets in the 1980s. This role was a natural one since, as discussed in Section 3, the Fed participates actively in this market in the course of conducting its daily operations implementing monetary policy. Also, the System played an important behind-the-scenes role in efforts to resolve serious problems that affected certain state-insured thrift institutions in Ohio and Maryland in 1985. This activity was also appropriate since the DIDMCA extended both Fed reserve requirements and access to the discount window to thrifts.

⁴ For a survey of these developments, see Broadus [6].

Consumer and community affairs Congress has given increased attention to the welfare of consumers and the condition of local communities in the 1970s and 1980s, as evidenced by the passage of a number of laws designed to protect consumers in their business dealings and to promote local economic development. The Fed has been given the responsibility to write regulations implementing many of the laws that govern consumer credit and other consumer financial transactions and community reinvestment and development. In doing so, the System seeks to ensure that the objectives of each law are fully and efficiently met.

Among the most important statutes covering consumer financial transactions are the Truth in Lending Act, the Fair Credit Billing Act, the Equal Credit Opportunity Act, the Fair Credit Reporting Act, the Consumer Leasing Act, the Real Estate Settlement Procedures Act, and the Electronic Fund Transfer Act. In general, all these laws attempt to ensure that consumers are given adequate information to make informed and intelligent financial decisions, and that they are treated fairly by the institutions they do business with. As an example, the Equal Credit Opportunity Act prohibits financial institutions from discriminating in granting credit on the basis of sex, race, religion, marital status, and other similar criteria. The Fed's Regulation B sets out specific procedures to implement this prohibition, such as a requirement that applicants who have been denied credit be notified of the reasons for the denial. In the case of some of the laws, the Fed and other regulatory authorities conduct periodic examinations to determine whether financial institutions are complying with the requirements of the laws. The System is advised by a Consumer Advisory Council in carrying out all of its consumer-related regulatory responsibilities. The Council, which meets several times each year, has 30 members representing consumer interests, lending institutions, and other sectors.

The principal statutes governing community reinvestment and development are the Home Mortgage Disclosure Act and the Community Reinvestment Act. The Home Mortgage Disclosure Act requires depository institutions to disclose where their mortgage and home improvement loans have been made so that depositors, potential depositors, and others can make informed judgments regarding whether or not specific institutions are meeting the needs of the local community for housing-related credit. The Community Reinvestment Act (CRA) encourages banks and other institutions to help meet the housing and other credit needs in their respective communities,

including needs in low- and moderate-income areas, provided such credit is consistent with the safety and soundness of the lenders. Compliance with this law is evaluated during bank examinations, and the extent of compliance is taken into account by the System when it considers certain applications for branches, bank mergers, and bank holding company formations and acquisitions.

The Fed has developed an extensive internal mechanism to discharge its responsibilities under the CRA. In particular, a Community Affairs Officer has been appointed at each of the 12 Federal Reserve Banks. Among other things, these officers and their staffs provide information to depository institutions regarding private and public resources available to assist in community development. They also attempt to facilitate communication between borrowers, lending institutions, local government agencies, and others in matters relating to the financing of community development initiatives. Under current procedures, community and neighborhood groups can protest bank merger applications and bank holding company applications in cases where they believe the institutions involved are not complying with the requirements of the CRA. The Community Affairs Officers play a leading role in efforts to resolve the issues underlying these protests.

Relationships with the U.S. Treasury and services to it The central bank has a close relationship with the fiscal authority in virtually all countries, and in some countries the central bank is actually under the direct control of the fiscal authority. Whatever the formal relationship, the actual working relationship in practice determines the extent to which the central bank can exert an independent influence on the economy through monetary policy. In the United States, the Fed works closely with the U.S. Treasury both in the larger task of formulating and implementing national economic policy and in the day-to-day accomplishment of routine fiscal operations. The System is independent of the Treasury, however, both in a legal sense and, since the celebrated "Accord" between the Fed and Treasury in 1951, in the sense of its ability to formulate and carry out monetary policy free of any immediate and direct constraint imposed by the Treasury.

At an operational level, the Fed performs a variety of relatively routine fiscal tasks for the Treasury as its "fiscal agent."⁵ The Fed is

⁵ More precisely, the 12 Federal Reserve Banks discussed in Section 2 of this article serve as the Treasury's fiscal agents.

essentially the Treasury's banker since it maintains an account at the Fed and makes most of its payments—both for purchases of goods and services and transfers such as social security disbursements—from this account. The majority of these payments are made by Treasury checks, which are cleared and paid by the Fed. A minority of repetitive payments, such as for some government employee salaries, are made through automated clearinghouses, most of which are operated by the Fed.

The Fed also carries out, on behalf of the Treasury, the routine operations related to issuing, servicing, and redeeming Treasury securities, such as accepting tenders from individuals and institutions that wish to purchase securities, collecting payments, and paying interest coupons. Treasury securities are no longer issued in the form of physical certificates. Instead, they are simply recorded in "book-entry" form at the Fed for the account of depository institutions, which may, in turn, be holding some of the securities for the accounts of customers.

Apart from coordinating with the Treasury on the broader questions of monetary and fiscal policy, the Fed works closely with the Treasury on a daily operational basis in actually implementing monetary policy. As noted in Section 3, the Treasury's disbursements and receipts affect the volume of reserves available to the banking system. Since the reserve position of the banking system is a central instrument the Fed uses in conducting monetary policy operations, the Treasury informs the Fed early each business day of its projected expenditures and receipts, which enables the Fed to take offsetting actions.

Services to depository institutions In addition to the fiscal services it provides to the Treasury, the Fed offers a number of services to depository institutions and, through these institutions, to the general public. These services are actually provided by the 12 Federal Reserve Banks discussed in Section 2, and most of them are related to the operation of the nation's payments mechanism. One of the principal reasons the Fed was created was to provide a safe and efficient system for transferring funds, especially between different localities, to supplant the slow and inefficient mechanism that existed at the time. Against this background, a major underlying reason for the Fed's participation in the payments mechanism, both in the past and at present, has been to increase the system's efficiency and to assist it in advancing technologically as well as to provide a source for specific services. This broader mandate was renewed by Congress in 1980 in the DIDMCA. The

DIDMCA also substantially altered the terms under which the Fed provides services. Prior to the Act's passage, the System offered these services without charge, but only to member banks. The Act extended direct access to the services to all depository institutions, but it required the Fed to charge fees that cover their full cost over the longer run, including the taxes and capital costs the Fed would incur if it were a private firm. The purpose of the fees is to encourage efficient use of the services and to enable private institutions to compete in their provision where appropriate.

Among the most important of the Fed's payments services are (1) the distribution, through depository institutions, of coin and currency to the public in accordance with its needs, and (2) the clearing and settlement of checks. The introduction of service fees initially reduced the number of checks presented to the Fed for processing. In 1985, however, the number increased 4.8 percent to approximately 15.5 billion. The System also provides several electronic payments services including wire transfers of funds and automated clearinghouse (ACH) services. The FedWire electronic transfer network enables depository institutions to transfer large amounts of funds nationwide with great speed. Such transfers can be used, among other things, to settle transactions in Federal funds, Treasury securities, and other securities, and therefore contribute substantially to the breadth, efficiency, and liquidity of the nation's money and capital markets. During 1983, approximately 38 million individual transfers valued at about \$84 trillion were executed over FedWire. ACHs use magnetic tapes to effect recurring transfers such as salary payments, payment of regular insurance payments and the like. Since ACHs eliminate paper checks, it is widely believed that they can significantly increase the speed with which routine payments are made as well as reduce their cost and risk. To date, however, the public's use of ACH facilities has been surprisingly limited.

In addition to the services already described, the Fed also provides net settlement services which private wire transfer services, ACHs, and other facilities can use to effect final net payment among their respective users on the books of the Fed. The System also provides certain nonpayments services including (1) the safekeeping and transfer of U.S. government and agency securities, and state and local government securities and (2) so-called noncash collection services where the System collects payments for certain specified noncash items including maturing state and local government securities and bankers acceptances.

SECTION 2:
STRUCTURE AND ORGANIZATION
OF THE FED

The structure of the Federal Reserve is a complex mixture of (a) private and public elements and (b) centralized authority and decentralized authority. Further, the institutional position of the Fed within the overall structure of the federal government is distinctive and unusual. These structural characteristics reflect both the longer-run history of central banking in the United States and the political compromise that surrounded passage of the Federal Reserve Act in 1913. Specifically, both the public and private sectors of the economy have participated in U.S. central banking activities from the earliest days of the Republic. The First Bank of the United States, established in 1791, performed a mixture of central and private banking functions, and its capital was provided by both the federal government and private individuals. This same mingling of private and public elements also characterized the much larger Second Bank of the United States, which operated between 1816 and 1836, and the national banking system created by the National Banking Act of 1863. When a new central bank was proposed in the early 1900s, a debate arose between (a) banking and financial interests in the large cities of the Northeast, which favored a highly centralized institution dominated by private bankers, and (b) agrarians, populists, and others in the South and West, who preferred a less centralized structure, but one in which the public sector would play a considerable role. The Federal Reserve Act and the central banking structure it established constitute the compromise that arose out of this conflict. The present structure, of course, also reflects broad financial and political trends over the period since 1913.

A. Internal Structure

Figure 1 depicts the internal organizational structure of the Fed. The following paragraphs describe the powers and responsibilities of each of the principal elements of the organization in turn.

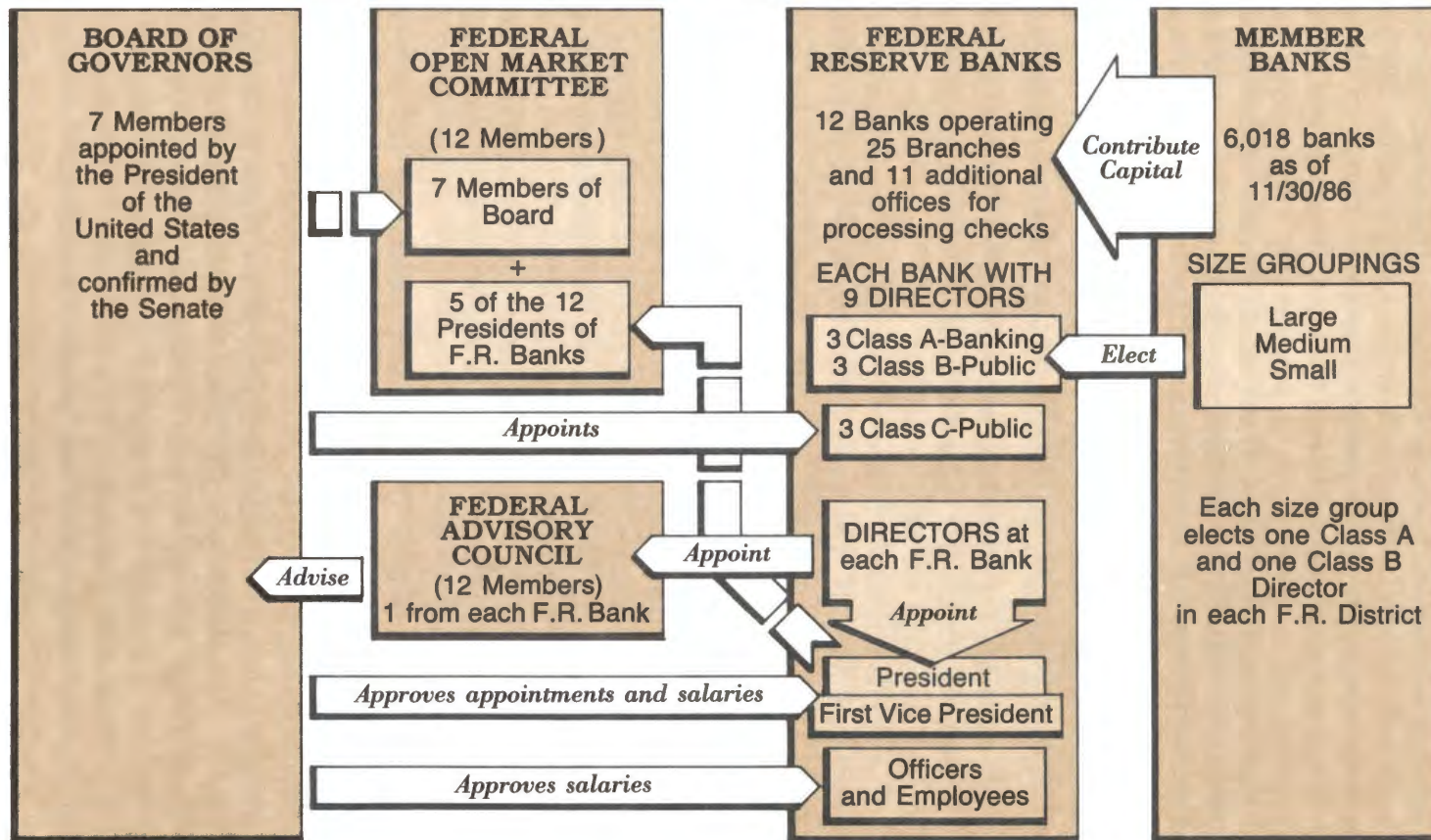
Board of Governors The Board of Governors is the central governing body in the System. It is an agency of the federal government and consists of seven members appointed by the President of the United States with the advice and consent of the Senate. The full term of a member of the Board is 14 years, with one member's term expiring every even-numbered year. The purpose of this long term of office is to insulate members from routine day-to-day political pressures. A member who has served a full term may not be reappointed, although members who have served part of an unexpired term may be reappointed to a full term. The President appoints one of the members Chairman and another Vice Chairman for four-year terms, again with the advice and consent of the Senate. The Chairman of the Board is the dominant figure in the System and is typically regarded by the general public as one of the most influential individuals in the government.

The Board of Governors has general cognizance over all of the System's activities described in Section 1 of this article. Its principal responsibility is the formulation and implementation of monetary policy and its role in this function is preeminent within the Fed. As Figure 1 indicates, the members of the Board comprise a majority of the voting members of the Federal Open Market Committee, which directs the Fed's open market operations (i.e., the System's purchases and sales of U.S. Treasury securities and other securities in the open financial markets) and oversees the general conduct of monetary policy.⁶ The Board also reviews and approves all discount rate actions taken by the Federal Reserve Banks, and it has the authority to alter the reserve requirements of depository institutions within certain limits specified by law. Outside the area of monetary policy, the Board has final responsibility for all of the regulatory and supervisory activities, margin requirement responsibilities, and consumer protection and community affairs activities described in Section 1. It also has a specific mandate to assist in the maintenance and further development of a safe and efficient national payments mechanism. In addition to these duties, the Board exercises general supervisory authority over the activities of the Federal Reserve Banks. As noted in Figure 1, the Board appoints three of the nine members of the board of directors of each Bank, and it must approve the

⁶ The Federal Open Market Committee, open market operations, and the other tools of monetary policy are discussed in greater detail in Section 3.

Fig. 1

ORGANIZATION OF THE FEDERAL RESERVE SYSTEM



Note: Information correct as of Nov. 1986. Source: Board of Governors of the Federal Reserve System.

appointment of each Bank's president and first vice president. The Board also examines the Banks annually and approves their annual operating budgets and any major construction expenditures.

The Board is directly responsible to Congress. It reports to Congress and Congressional committees on its activities on a continuing basis through testimony and other means. It also makes a variety of statistical and other information related to its activities available to Congress and the public in its annual report, a monthly *Federal Reserve Bulletin*, and other publications. The Board funds its expenditures through assessments on the Federal Reserve Banks rather than via Congressional appropriations. Its financial accounts are audited annually by a public accounting firm, and these accounts are also subject to audit by the General Accounting Office.

Federal Open Market Committee As noted above, the Federal Open Market Committee directs the Fed's domestic open market operations, which are the principal mechanism used to carry out monetary policy actions on a day-to-day basis. It also oversees the System's activities in foreign exchange markets. The Chairman of the Board of Governors is traditionally Chairman of the Committee. In addition to the seven members of the Board of Governors, the Committee at any point in time includes five of the Reserve Bank presidents as voting members. The President of the Federal Reserve Bank of New York is a permanent voting member and traditionally Vice Chairman of the Committee in recognition of the important role this Bank plays in actually carrying out open market operations. The other 11 Reserve Bank presidents share the four remaining voting memberships on a rotating basis. In recent years the Committee has held eight regular meetings per year in Washington. It also meets via telephone conference from time to time when circumstances warrant.

The role of the Federal Open Market Committee in the Fed's monetary policymaking process will be discussed in greater detail in Section 3. The important point to note about the Committee from an organizational standpoint is its inclusion of Reserve Bank presidents as voting members. It is true that the members of the Board of Governors constitute a majority of the voting members of the Committee. Nonetheless, the presidents add an important dimension to the Committee's deliberations since they do not reside in Washington, and they are in direct contact with leading business people and others in their respective Districts. This partially decentralized feature of the Committee's organizational structure is consistent with the intent of the authors of the Federal Reserve Act to preserve a degree of regional autonomy in the

Fed's overall structure. Because the presidents are not appointed by the President of the United States or confirmed by the Senate, several lawsuits in recent years have challenged the constitutionality of their role in the Committee. None of these suits has been successful to date.

Federal Reserve Banks There are 12 Federal Reserve Banks whose head offices are located in the following cities: Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas, and San Francisco. Each of these Banks serves a particular, numbered geographic Federal Reserve District as shown by the map in Figure 2. There are also Federal Reserve Bank Branches in 25 other cities as well as facilities that provide particular operational services in several additional cities.

As suggested earlier, the Federal Reserve Banks represent the more decentralized and private elements of the Fed's overall structure. The corporate structure of the Reserve Banks is similar to that of private commercial banks. Like private banks, each Reserve Bank has a board of directors consisting of private individuals, which elects the Bank's officers and oversees the general operations of the Bank. The Banks also issue capital stock, and their officers carry titles similar to those used in most private financial institutions. While similar to private companies in these respects, however, the Reserve Banks are different in many other, fundamental respects. First, because the Banks' principal general responsibility is to promote the public interest rather than the narrower interests of their stockholders, profit considerations do not play a dominant role in determining the Banks' actions, even though the Banks earn substantial profits as a by-product of their routine operations. As noted earlier, the Board of Governors has general supervisory authority over the Banks, and for this reason the powers and privileges of the Banks' stockholders are more limited than in most private corporations. Second, in the unlikely event that any of the Banks was ever liquidated, any assets remaining after the stock was redeemed at face value would be transferred to the federal government.

Each of the Reserve Bank boards of directors has nine members structured to be broadly representative of both the Bank's stockholders and the public served by the Bank. Specifically, each board has three Class A directors, three Class B directors, and three Class C directors. The Class A directors are usually commercial bankers. They represent banks that are members of the Federal Reserve System, since these banks are the Reserve Bank stockholders. Class B directors represent the

Fig. 2

Boundaries of Federal Reserve Districts and Their Branch Territories



Source: Board of Governors of the Federal Reserve System

public and are drawn from diverse sectors, including agriculture, business, and labor. They may not be officers, directors, or employees of any bank. As indicated in Figure 1, the Class A and B directors of each Reserve Bank are elected from that Bank's District by the member banks in the District. The Class C directors also represent the public and are appointed by the Board of Governors. The Board of Governors also appoints one of the Class C directors chairman of the board and another deputy chairman. In addition to the 12 Reserve Bank boards, each Reserve Bank Branch has a board consisting of either five or seven members, a majority of whom are appointed by the respective Bank boards.

The Reserve Bank boards have several important responsibilities. First, they oversee the management and operation of their respective Banks, subject to the general supervision of the Board of Governors. Second, they establish the discount rates that the Banks charge on loans to depository institutions in their Districts, subject to the approval of the Board of Governors. Third, they appoint the president and first vice president of their respective Banks, subject again to the approval of the Board of Governors. Finally, the members of each Bank and Branch board provide the System with regular information on business and financial conditions in specific industries, sectors, and geographic regions. Although several of the specific actions of the Reserve Bank boards must be approved by the Board of Governors, these boards are highly influential within the Fed because of the caliber, experience, and diversity of individual members. The information they provide on business conditions, in particular, often provides an early warning of emerging developments in the economy, in financial markets, and in banking and financial institutions. Further, the directors' participation in setting the discount rate gives them a specific role in the monetary policymaking process, since—as discussed in more detail in Section 3—the discount rate is one of the instruments of monetary policy.

Each Reserve Bank currently derives approximately 95 percent of its earnings from its proportionate share of the interest on the System's portfolio of domestic securities acquired in the course of conducting monetary policy. Practically all of the remainder is derived from its share of the interest earned on the System's holdings of foreign currencies, the interest from its loans to depository institutions, profits from the sale of securities and foreign exchange, and the fees for its services to depository institutions. Each Bank's earnings are allocated first to (1) the payment of the Bank's expenses, (2) an assessment to cover its

proportionate share of the expenses of the Board of Governors, (3) the payment of a statutory 6 percent dividend to the Bank's stockholders, and (4) any addition to the Bank's surplus needed to maintain surplus equal to paid-in capital. Remaining earnings are then transferred to the U.S. Treasury. In 1985, the total current income plus additions of the 12 Reserve Banks was approximately \$19.4 billion, and the amount transferred to the Treasury was approximately \$17.8 billion.

Several informal bodies exist within the Fed to facilitate communication among the Reserve Banks and between the Reserve Banks and the Board of Governors on issues of mutual concern. A Conference of Chairmen of the Federal Reserve Banks meets at the Board of Governors offices in Washington twice a year. In addition, a Conference of Presidents of the Reserve Banks meets several times each year at one of the Federal Reserve offices and maintains close contact with the Board of Governors. There is also a Conference of First Vice Presidents. While these Conferences were not formally established by the Federal Reserve Act as were the Federal Open Market Committee and the Reserve Bank boards, in practice they are important forums for the discussion and resolution of high-priority issues and problems.

Member banks At the end of 1985, about 6,000 of the approximately 14,000 commercial banks in the United States were members of the Federal Reserve System. All national banks are required to be members, and state-chartered banks may voluntarily become members if they meet the requirements for membership established by the Board of Governors. As suggested earlier, membership carries both responsibilities and privileges. For example, member banks are required to subscribe to the stock of their respective Reserve Banks, and they are supervised and examined by the Reserve Banks, but they elect six of the nine members of the Reserve Bank boards, and they receive the annual 6 percent dividend on Reserve Bank stock.

Prior to 1980, the duties and privileges of member banks delineated them more sharply from nonmember institutions than presently, because only members were subject to Fed's reserve requirements, and only members had access to the Fed's payments and other operational services, which were provided without charge. Also, only member banks had access to the Fed's discount window. As pointed out in Section 1, the Depository Institutions Deregulation and Monetary Control Act of 1980 subjected all depository institutions to Fed reserve requirements, although some smaller institutions do not actually hold

required reserves because their reservable liabilities are below an exempted amount.⁷ At the same time, the Act extended access to the discount window to all nonmember depository institutions with deposit liabilities subject to Fed reserve requirements. It also extended access to the Fed's operational services to all depository institutions that are eligible for federal deposit insurance and required the Fed to charge all institutions explicit fees for these services.

Advisory committees In addition to the principal arms of the Fed discussed above, there are a number of advisory councils and committees in the System that exist for specific purposes. The Federal Advisory Council, which is shown in Figure 1, has 12 members—one elected annually by each of the 12 Reserve Bank boards. The members are typically prominent commercial bankers. The Council meets at least four times a year with the Board of Governors to discuss current issues related to Fed monetary and regulatory policies and other relevant matters. Other advisory groups include the Consumer Advisory Council, made up of 30 members with an interest in consumer affairs, and the Thrift Institutions Advisory Council, which comprises representatives of savings and loan associations, savings banks, and credit unions. The Consumer Advisory Council keeps the System informed of major consumer issues in view of the Fed's statutory responsibilities in this area discussed in Section 1. The establishment of the Thrift Institutions Advisory Council in the early 1980s reflected the extension of Fed reserve requirements and access to the discount window and Fed operational services to thrifts by the DIDMCA. In the mid-1980s, each Reserve Bank established a Small Business and Agricultural Advisory Committee to provide a channel for direct communication between the Fed and representatives of these two sectors from all regions of the country. Several members of each of these Committees meet as a group with the Board of Governors each year.

⁷ A central purpose of the DIDMCA was to resolve the problem created by the accelerated attrition of member banks during the late 1970s that had resulted from the steep rise in interest rates during that period. This increase in rates significantly increased the opportunity costs of holding required reserves.

B. Position of the Fed within the Overall Structure of the Government

One of the most frequently misunderstood aspects of the Fed is its institutional position within the federal government. There have been numerous instances throughout recorded history where the centers of political power within governments—monarchs or prime ministers or legislative bodies—have abused the power to control the monetary system. The framers of the Federal Reserve Act were aware of this risk and sought to insulate the Fed to some extent from routine political pressures through various provisions of the Act. For this reason, the Fed is often described as “independent.”

It is true that the Fed has somewhat greater freedom to act than some other government entities, since its actions do not have to be formally ratified by the President, its expenses are funded from its own earnings rather than through the regular Congressional appropriations process, and the full terms of members of the Board of Governors are lengthy. The System is not independent of the rest of the government, however, in any general sense, either as an institutional matter or in practice. In particular, it is not a separate branch of the government protected by the Constitution like the judicial system. It is, instead, essentially a creature of Congress. It exists by virtue of an act of Congress, and it could be significantly altered or even abolished at any time Congress wished to do so. Further, while the Fed does not report directly to the President or any other arm of the Executive Branch, it is a generally accepted principle that Fed monetary policy should complement the fiscal and other economic policies and programs of the Administration wherever possible in seeking to attain the longer-run national economic goals of high employment and stability in the price level. It would be difficult if not impossible for the Fed to follow a policy substantially at odds with the policies favored by a clear majority of the rest of the government.

The close working relationship between the Fed and other federal entities is manifested in a variety of ways. The Chairman of the Board of Governors and other Board members testify frequently before Congressional committees on the state of the economy and monetary policy, domestic and international financial developments, regulatory matters, and a variety of other issues. Since monetary policy and many of the other policy areas in which the Fed is active are inherently controversial, these Congressional hearings are sometimes contentious, and the Fed’s representatives are typically required to explain and defend the System’s actions in depth. In addition to its relations with Congress, the Fed is in close contact

with the Executive Branch and other government agencies. The Chairman of the Board of Governors meets with the President from time to time and has regular consultations with the Secretary of the Treasury and other high officials on a variety of issues. There are also frequent contacts between members of the Fed's permanent staff and their counterparts in other agencies, particularly the Treasury. In short, through a variety of formal and informal contacts, the Fed is kept fully apprised of the views of other officials and agencies on issues of mutual concern, and it has ample opportunity to communicate its own views on these matters.

SECTION 3:
THE FED AT WORK:
THE IMPLEMENTATION OF
MONETARY POLICY

This section describes Fed monetary policy in the context of events and major policy developments in the late 1970s and early 1980s. As noted in the introduction to this article, monetary policy is the preeminent responsibility of the Fed, and the special attention given to this particular Fed function in this section reflects its importance. Monetary policy is a complex field, and it is the subject of an extensive technical literature. The purpose of what follows is to provide a reasonably thorough nontechnical overview of the topic along with some of the flavor of major recent developments and policy issues.

A. Strategy, Procedures, and Mechanics of Monetary Policy

Overview The term *monetary policy*, again, refers to the actions the Fed takes to influence national and international monetary and financial conditions with a view to helping achieve the nation's basic economic objectives of price level stability, high employment, and reasonable balance and stability in its trade and payments relations with other nations. This conception of monetary policy implies certain relationships. First, the Fed must be able to influence monetary and financial conditions. Second, monetary and financial conditions must have some impact on at least some of the objectives—or, to employ the jargon of economists, the “goal variables”—of economic policy such as stability in the price level.

It is generally recognized that the Fed, like other central banks, can influence domestic monetary and financial conditions. It is also agreed

that the Fed can influence international monetary conditions, given the importance of the U.S. monetary system and financial markets in the world economy. It should be understood, however, that the System's influence over most financial variables is indirect. Everyone who works in a policymaking capacity at the Fed for any length of time is eventually asked what the Fed plans to "do" to interest rates and the money supply at some point in the future. The System has direct administrative control over only one interest rate, however, the discount rate, and it has no direct control over the several aggregations of currency, bank deposits, and other liquid assets that comprise the various measures of the national money supply. What the Fed can influence directly is the volume and growth of reserves held by private commercial banks and other depository institutions—that is, balances held by depository institutions at Federal Reserve Banks.⁸ Through this influence on bank reserves, the Fed can indirectly affect interest rates and the growth of money and credit. For example, if the public's demand for money and credit is substantial, due, perhaps, to strong growth in the general economy, a restrictive approach to the provision of reserves by the Fed tends to put immediate upward pressure on the Federal funds rate, which is the short-term interest rate charged for the use of reserves when they are sold (lent) and bought (borrowed) in the so-called Federal funds market. The rise in the Federal funds rate, in turn, causes other interest rates to rise, which acts to reduce both the supply and demand for money and credit and hence their growth. Conversely, if the Fed supplies reserves generously in relation to the demand for money and credit, interest rates will come under downward pressure, and the growth of money and credit will tend to increase.

The second basis for the conduct of monetary policy is the presumption that relationships exist between the monetary and financial variables that the Fed can influence, on the one hand, and the goal variables of economic policy on the other. The nature of these relationships and their empirical characteristics have been the subject of extensive research and analysis by monetary economists for many years. Despite its extent, the results of this research are still not fully

⁸ These reserves totaled a little over \$28.5 billion at the end of 1985. The use of the word *influence* rather than *control* in this sentence was deliberate. The Fed cannot control total reserves precisely in the short run under present institutional arrangements, because total reserves include reserves borrowed from the discount window, and depository institutions play a significant role in determining the level of borrowing in the short run. The Fed can, however, control nonborrowed reserves with considerable precision in the short run.

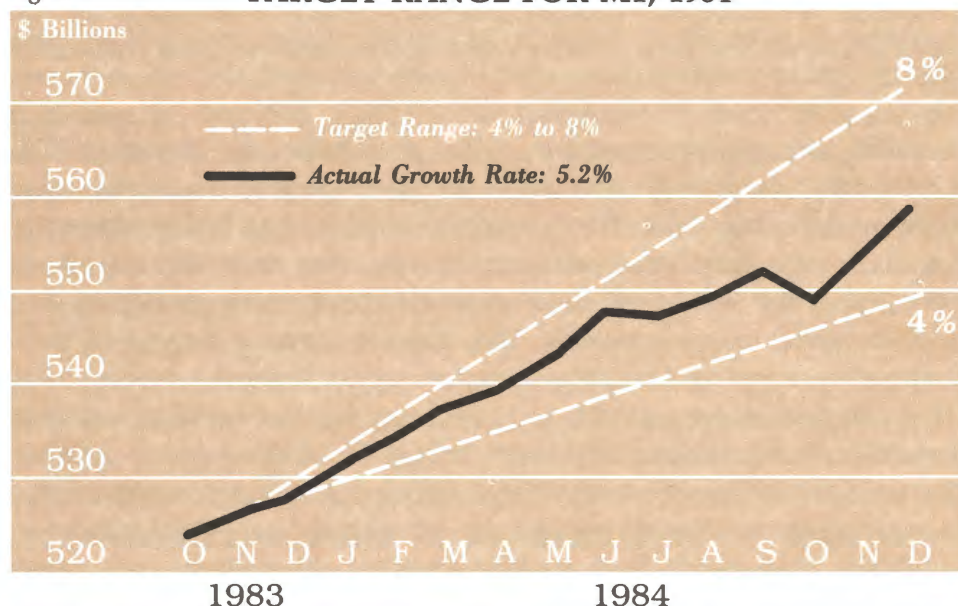
conclusive, and much disagreement remains on particular points. Most economists agree that a stable and predictable positive relationship exists over the long run between the rate of growth of the money supply and the rate of inflation: specifically, a sustained rise in the growth rate of the money supply is followed eventually by a rise in the trend rate of inflation. Some economists also believe that short-run relationships exist between (1) changes in the growth rates of monetary variables, and (2) real economic variables such as the rates of growth of production and employment. As suggested in Section 1, however, views regarding the nature of these short-run relationships and their usefulness as a basis for monetary policy have changed substantially over the last two decades. In particular, the research of the rational expectations school of economists has produced a growing consensus that the only changes in the growth rate of the money supply that affect real economic variables are those that are not anticipated by the public. Since the public's anticipations are difficult to observe and quantify accurately on a current basis, this view implies that these short-run relationships cannot be predicted reliably, and for that reason the Fed cannot exploit them to fine-tune the economy. As pointed out in Section 1, this attitude toward what can be achieved through monetary policy is considerably less ambitious than the view held by many economists and policymakers in the 1960s.

The strategy of monetary policy and monetary targeting This evolution of prevailing views regarding the nature of the relationships between monetary and other economic variables has had a substantial impact on the strategy of monetary policy over time: that is, on the procedures the Fed employs to achieve its longer-run objectives. It is probably fair to say that the Fed did not have a clear and well-articulated, longer-run strategy for monetary policy prior to the 1970s. The rising inflation and other dislocations in that decade, however, forced the System to lengthen its horizon in formulating policy. Further, the growing influence of monetarist doctrine in the economics profession, among policymakers, and in some quarters of the Congress probably caused the Fed to give greater—although by no means exclusive—attention to the behavior of monetary aggregates in conducting policy. These developments culminated in 1975 in the passage of House Concurrent Resolution 133 in which Congress expressed its sense that the Fed should manage the longer-run growth of monetary and credit aggregates and keep that growth consistent with the nation's

broad economic goals.⁹ The System had been setting internal monetary growth targets for several years before the passage of this Resolution. Following the passage of the Resolution, however, it began to report the targets to the Congress in public testimony. In 1978, the Full Employment and Balanced Growth Act (the Humphrey-Hawkins Act) made the requirements of the Resolution law.

In accordance with the terms of the Humphrey-Hawkins Act, the Fed has developed a formal procedure for establishing targets for the growth of various monetary and credit aggregates and reporting these targets to Congress. Under the present procedure, the Federal Open Market Committee typically sets target ranges for three monetary aggregates, M1, M2, and M3, and a monitoring range for one credit aggregate, Domestic Nonfinancial Debt Outstanding, at its meeting in February of each year for the period running from the fourth quarter of the preceding year to the fourth quarter of the current year. The base for each target range is the actual level of the relevant aggregate in the fourth quarter of the preceding year, calculated as an average of daily

Fig. 3 TARGET RANGE FOR M1, 1984



Source: Board of Governors of the Federal Reserve System. "Monetary Policy Objectives for 1985," Summary of Report to the Congress on Monetary Policy pursuant to the Full Employment and Balanced Growth Act of 1978. February 20, 1985, p.6.

⁹ The language of the Resolution's reference to monetary and credit aggregates is identical to that in the Humphrey-Hawkins Act of 1978 quoted in Section 1 of this article.

data over the quarter. The upper and lower endpoints of each range are quarterly average levels in the fourth quarter of the current year. Although it would be possible to discuss the targets in terms of dollar levels, they are normally discussed in terms of growth rates, and the widths of the ranges are always established in terms of so many percentage points difference between the growth rate implied by the top of a range and the growth rate implied by the bottom of a range. The ranges have typically been three or four percentage points wide, but they have sometimes been wider.

As an example, Table 1 shows the target ranges established by the Committee for 1984 at the beginning of that year. As Table 1 shows, the range for M1 in 1984 had a four-percentage-point spread, while the ranges for the other aggregates had three-point spreads. The target ranges are frequently depicted graphically both in official publications and the financial press. Figure 3 depicts the M1 range for 1984 in terms of the traditional target "cone," along with the actual growth path during that year. Because the width of the cone (in terms of dollar levels) is much narrower at the beginning of a target period than at the end, its usefulness for monitoring progress toward achieving the target during the early quarters of the period is limited. For this reason, the Fed began to supplement the cone in 1985 with so-called parallel bands of constant (dollar level) width throughout the period, as shown in Figure 4. This chart shows the target range for 1985 and M2. As the chart shows, the actual level of M2 was above the top of the cone throughout much of this target period, but it was always at or below the top parallel band, and it finished the year within the range.

Table 1

**TARGET RANGES FOR
MONETARY GROWTH, 1984**

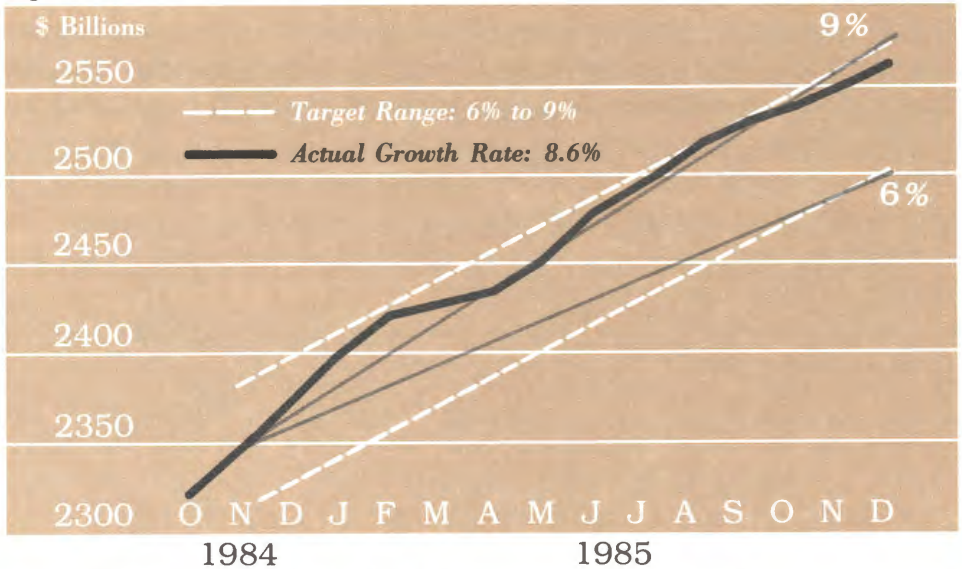
Measured from fourth quarter 1983 to fourth quarter 1984

M2	6 to 9 percent
M3	6 to 9 percent
M1	4 to 8 percent
Total Domestic Nonfinancial Debt	8 to 11 percent

Source: Board of Governors of the Federal Reserve System.

Fig. 4

TARGET RANGE FOR M2, 1985



Source: Board of Governors of the Federal Reserve System. "Monetary Policy Objectives for 1986," Summary of Report to the Congress on Monetary Policy pursuant to the Full Employment and Balanced Growth Act of 1978. February 19, 1986, p.6.

As noted above, the Fed typically sets ranges for three monetary aggregates and one credit aggregate. Table 2 lists the principal components of the monetary measures.¹⁰ M1 is the narrowest of these aggregates and attempts to measure the public's transactions balances. M2 includes M1 and several other categories of liquid assets. M3 includes M2 and still other categories of relatively liquid assets. The credit aggregate, referred to as Domestic Nonfinancial Debt Outstanding, is essentially the total debt outstanding in U.S. credit markets less borrowings by foreigners and financial institutions.¹¹ The latter elements are excluded because, unlike other components of total debt, they are not closely related to U.S. economic activity. Ranges have been established for M1, M2, and M3 since the formal targeting procedure was initiated in 1975. A range has been set for domestic nonfinancial debt only since 1983.

In addition to the target-setting at the beginning of the year, the Federal Open Market Committee reevaluates all of the targets at its

¹⁰ More precise and detailed definitions of these aggregates are provided in the footnotes to Table 1.10 of the monthly *Federal Reserve Bulletin*.

¹¹ See Board of Governors of the Federal Reserve System [5], Table 2.2, pp. 24-25.

Table 2

COMPONENTS OF M1, M2, AND M3

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
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

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.

Source: Board of Governors of the Federal Reserve System, *The Federal Reserve System: Purposes and Functions*. 1984, pp. 22-23.

meeting in July to determine whether or not they are still appropriate in the light of economic and financial developments since the initial setting. The Committee has made several changes in specific targets at its July meeting over the years. These changes have taken the form both of changes in the percentage growth rates and changes in the base period for the target. Changes in the base (referred to as "rebasings") have usually involved moving the base period forward from the fourth quarter of the preceding year to the second quarter of the current year. For example, at its meeting in July 1985, the Committee moved the base for the M1 target forward to the second quarter of that year. Also, the growth rate range for M1 was widened from the 4 to 7 percent range established at the February meeting to 3 to 8 percent.

To fulfill the reporting requirements of the Humphrey-Hawkins Act, the Fed Chairman reports the results of the Committee's target-settings in Congressional testimony shortly after the February and July meetings. These appearances have become focal points for the public discussion of monetary policy in recent years, and they therefore receive substantial attention in the media and elsewhere.

Several comments regarding this strategy and procedure are in order. First, although the Humphrey-Hawkins Act required the Fed to report its intentions regarding the growth of money and credit, neither the letter nor the spirit of the law required the Fed to make the target ranges the exclusive basis for the conduct of monetary policy, and the Fed has not done so. The Fed has consciously allowed the actual growth of particular aggregates to deviate from their ranges on a number of occasions, especially in the early- and mid-1980s, when it felt that the actions it would have had to take to bring growth back within the ranges might have damaged the economy. It has also given substantial attention to other economic and financial variables in formulating and implementing policy such as interest rates, foreign exchange rates, and various measures of overall economic activity, such as the gross national product. Further, as indicated in greater detail in Section 3B, it has frequently changed the weights it has attached both to the monetary and credit aggregates it explicitly targets and the other financial and economic variables it monitors. For example, it has explicitly reduced the weight given to M1 on several occasions in the 1980s due to the unusual behavior of the velocity of M1 in this period; that is, the reduced predictability of the empirical relationship between M1 and GNP.

This generally flexible and discretionary approach to the conduct of monetary policy has many defenders among professional economists

and others, both inside and outside the Fed. Those who favor this approach point out that flexibility is particularly necessary in a period of rapid institutional change, such as the extensive deregulation in banking and financial markets in the 1980s. Others, however, especially monetarist economists and adherents to the rational expectations school, believe that a highly discretionary policy may tend to destabilize the economy rather than stabilize it over the longer run. These economists generally favor a monetary policy strategy where the Fed's reaction to emerging economic and monetary developments would be determined to a greater extent than at present by preannounced rules and would therefore be easier for the general public and financial market participants to anticipate. The full range of this debate is beyond the scope of this article. With respect to the Fed's monetary targeting strategy, those who favor a greater reliance on rules have criticized several features of the procedures outlined above. First, they have pointed out that targeting several measures of the money supply and shifting the emphasis among them reduces the potentially healthy discipline that targeting imposes on the Fed itself. Since the growth rates of the various aggregates the Fed targets frequently diverge in the short run, the Fed may at times avoid reacting to the aberrant behavior of one aggregate by transferring its attention to another. Although such shifts in emphasis may be justifiable in some cases, they may not be desirable in others. Also, the shifting reduces the usefulness of the targets as statements of the System's policy intentions to the public. Second, those who favor rules have criticized the practice of using the *actual* level of an aggregate in the fourth quarter of the preceding year as the base for the target in the current year on the grounds that doing so leads to the automatic ratification of any deviation from the preceding year's target, regardless of whether the deviation was desirable for economic reasons or not.¹²

Whether or not the Fed's monetary targeting strategy has actually improved the conduct of monetary policy over the years it has been used is still an open question. The growth of the M1 aggregate exceeded the top of its range significantly in both 1977 and 1978, and some economists believe that the rapid growth occasioned by these averages and the accompanying upward "base drift" contributed to the high inflation and resulting financial turmoil in 1979, 1980, and 1981. In short, the targeting

¹² This phenomenon has come to be known as "base drift." For a discussion of the problems posed by base drift, see Broaddus and Goodfriend [8]. For a more sympathetic view of the phenomenon, see Walsh [23].

procedure does not appear to have been very useful in assisting the Fed to achieve price level and financial stability in this period. On the other hand, the existence of the targeting strategy has probably served as a useful and continuous reminder to the public, Congress, and the Fed itself of the longer-run goals of monetary policy. The strategy will probably continue to be useful in the future, although modifications may be required in the light of the watershed financial deregulation of the 1980s.¹³

The tactics of monetary policy: Instruments It is not enough for the Fed to have a longer-run strategy in conducting monetary policy. Like other institutions, it lives in the short run, and it must respond to an endless series of economic and financial disturbances—some of which can be anticipated, but most of which cannot—in implementing policy. For this reason, the Fed uses a set of tactical procedures to assist in implementing the longer-run strategy outlined above and in attaining its strategic objectives. This subsection and the next two describe the three principal elements of this tactical apparatus: the instruments or tools of monetary policy, the tactical operating procedures, and the policymaking process in the short run.

The Fed uses three principal instruments in conducting monetary policy on a day-to-day basis: open market operations, the discount rate, and reserve requirements.¹⁴ Of these, open market operations are the most important. The following paragraphs briefly describe the mechanical aspects of these instruments. The next subsection describes how the System welds the specific actions it takes with these various instruments into a coordinated tactical procedure.

Open market operations, as the name implies, are simply purchases and sales of securities by the Fed in the open money and bond markets. The purpose of these purchases and sales is to affect the aggregate reserve position of depository institutions; that is, the level and growth of the non-interest-bearing reserve deposits these institutions hold, in

¹³ For a useful nontechnical discussion of some of the broader current issues surrounding the Fed's monetary targeting strategy see Federal Reserve Bank of Minneapolis [10]. See also McCallum [16].

¹⁴ The Fed has used other tools in the past, notably direct credit controls and interest rate ceilings, although many economists do not regard these tools as appropriate instruments of monetary policy. The Fed's power, noted in Section 1, to set margin requirements on certain classes of securities is sometimes regarded as an instrument of monetary policy, but it is not regarded as an important tool in practice under the Fed's present operating procedures.

the aggregate, at Federal Reserve Banks.¹⁵ The basic mechanics of these operations are quite simple. If the Fed wishes to increase the level of reserves, it purchases securities in the open market. It ultimately pays for the purchase by crediting the reserve account of some depository institution for the amount purchased, which increases the level of aggregate reserves by that amount. Conversely, if the Fed wants to reduce the level of reserves it sells securities in the market. (Or, more importantly in practice, if it wishes to reduce the rate of growth of reserves, it buys securities at a less rapid pace.) Payment for the sales is eventually effected by reducing some depository institution's reserve account for the amount of the sale, which reduces the aggregate level of reserves. This description of the mechanics of open market operations focuses on individual transactions in isolation. In reality, of course, such individual transactions are part of a continuous stream of transactions involving the public and other institutions in addition to the Fed. Therefore, it is not generally useful in practice to think of Fed open market operations in terms of the isolated effect of particular purchases and sales. Instead, the focus is on the broader effects of operations on the growth of reserves over time: purchases tend to increase growth; sales reduce it.

The Fed's open market operations are controlled and supervised by the Federal Open Market Committee. They are executed in the market, under the Committee's direction, by the Federal Reserve Bank of New York acting as the Committee's agent. A department at the New York Bank, known popularly as the "Trading Desk," or simply the "Desk," actually carries out the operations. A Manager for Domestic Operations, who is a senior officer of the New York Bank, supervises the Trading Desk. The Manager has direct day-to-day control of open market operations. He reports directly to the Committee and receives his instructions from the Committee.

Although in principle the Fed could conduct open market operations using any public or private securities, it is restricted by law to the use of U.S. government (i.e., U.S. Treasury) securities, obligations issued or guaranteed by agencies of the United States, and a few short-term securities. In practice, the vast majority of operations are carried out using Treasury securities, and they would undoubtedly be

¹⁵ In addition to affecting reserves themselves, these operations also affect the Federal funds rate, which is the interest rate charged for the use of reserve funds in the open market. The Federal funds rate has played a key role in the implementation of monetary policy in the 1970s and 1980s as indicated in subsequent sections of this article.

concentrated in Treasuries even in the absence of legal restrictions. To be effective in an economy and financial system as large as that of the United States, it is essential that the Fed be able to conduct large purchases and sales flexibly without unduly disrupting the market. The market for U.S. government securities is extremely broad and active, and is therefore ideal for open market operations.

The Fed's open market operations are an important factor affecting the aggregate volume of reserves available to depository institutions, but by no means the only factor. Independent actions on the part of the general public and the U.S. Treasury also have important effects on reserves. When the public's demand for currency increases, for example, as it typically does before important holidays, depository institutions obtain the currency from the Fed. They pay for it through reductions in their reserve balances at the Fed, which reduce aggregate reserves. Conversely, a reduction in the public's desire for currency increases reserves. As pointed out in Section 1, the Treasury maintains an account on the books of the Fed and uses this account to make routine payments for the federal government's purchases of goods and services and in connection with transfers such as medicare disbursements. When the Treasury makes such a payment, the Treasury account at the Fed is drawn down, and the funds flow into the reserve account of some depository institution, which increases aggregate reserves. The reverse occurs when the public makes payments to the Treasury, such as tax payments. These examples cover just a few of the myriad factors other than the Fed's open market operations that continuously influence the aggregate reserve position of depository institutions.¹⁶ In order to manage the reserve position the Fed must neutralize these other factors. It does this on a continuous basis through so-called defensive open market operations, which constitute the majority of its operations. Indeed, as can be seen in Table 3, the total dollar volume of Fed open market transactions in a given year typically exceeds the net change in the System's portfolio of securities by a substantial amount.

Against this background, the Fed's open market operations can be divided into two broad categories: (1) outright, permanent purchases or sales and (2) temporary purchases or sales in the form of "repurchase agreements" (for temporary purchases) or "matched sale-purchase transactions" (for temporary sales). Outright transactions are most likely

¹⁶ For a detailed treatment of all factors affecting reserves, see Board of Governors of the Federal Reserve System [5], Appendix to Chapter 3, pp. 45-56.

Table 3

FEDERAL RESERVE OPEN MARKET TRANSACTIONS, 1985

Type of transaction	Mil. of dollars	Type of transaction	Mil. of dollars	Type of Transaction	Mil. of dollars
U.S. GOVERNMENT SECURITIES				FEDERAL AGENCY OBLIGATIONS	
<i>Outright transactions (excluding matched transactions)</i>		5 to 10 years		<i>Outright transactions</i>	
		Gross purchases	458	Gross purchases	0
		Gross sales	100	Gross sales	0
		Maturity shift	-1,857	Redemptions	162
		Exchange	2,184		
Treasury bills		More than 10 years		<i>Repurchase agreements</i>	
Gross purchases	22,214	Gross purchases	293	Gross purchases	22,183
Gross sales	4,118	Gross sales	0	Gross sales	20,877
Exchange	0	Maturity shift	-447		
Redemptions	3,500	Exchange	1,679	Net change in federal agency obligations	1,144
Others within 1 year		All maturities			
Gross purchases	1,349	Gross purchases	26,499		
Gross sales	0	Gross sales	4,218		
Maturity shift	19,763	Redemptions	3,500		
Exchange	-17,717	<i>Matched transactions</i>			
Redemptions	0	Gross sales	866,175		
		Gross purchases	865,968	BANKERS ACCEPTANCES	
1 to 5 years		<i>Repurchase agreements</i>		Repurchase agreements, net	0
Gross purchases	2,185	Gross purchases	134,253		
Gross sales	0	Gross sales	132,351		
Maturity shift	-17,459	Net change in U.S. government securities	20,477	Total net change in System Open Market Account	21,621
Exchange	13,853				

Note: Sales, redemptions, and negative figures reduce holdings of the System Open Market Account; all other figures increase such holdings. Details may not add to totals because of rounding.

Source: Board of Governors of the Federal Reserve System, *Annual Report*, 1985, pp. 208-9.

to be used when the Fed wants the operation to have a lasting effect on reserves. Outright purchases might be used in the autumn months, for example, to offset the persistent seasonal drain of reserves caused by the buildup of currency in the hands of the public prior to Christmas. Repurchase agreements and matched sale-transactions agreements are used when the Fed expects to want to reverse the effect of an operation on reserves within a few days or weeks. Under a repurchase agreement, the Fed buys securities from a dealer who agrees to repurchase them by a specified date at a specified price, which increases reserves over the duration of the agreement. Matched sale-purchase transactions involve an immediate sale of securities to a dealer matched by an agreement for the Fed to repurchase the securities by a specified date at a specified price. In this case, reserves are reduced over the duration of the agreement. Repurchase agreements or matched sale-purchase transactions might be used, for example, to offset anticipated temporary effects of fluctuations in the Treasury's balance at the Fed on reserves.

The Fed carries out the majority of its operations in the market with 40 so-called primary securities dealers, about a third of which are departments of large money center banks and the remainder securities brokerage houses. All of these dealers make regular markets in Treasury and federal agency securities, and are therefore prepared at all times to quote prices at which they will buy securities and prices at which they will sell them. The Fed executes most of its transactions, both outright and temporary, using an auction-like procedure, where it announces what securities it wishes to buy or sell and in what amounts, receives price or interest rate proposals from the various primary dealers for the transaction, and accepts the proposals most favorable to the Fed up to the dollar amount of the operation.

Although the majority of its operations are carried out with primary dealers, the Fed can also affect reserves via its financial dealings with foreign central banks and other foreign official institutions. On any given day, the Fed has orders from some of these "customers" to invest funds overnight. In this situation the Fed has a choice: it can either temporarily sell securities to these institutions from its own account, which reduces reserves, or it can pass the orders through to private dealers, in which case reserves are not affected. The choice on a particular day reflects the overall objectives of the Fed's operations on that day.

Table 3 summarizes the Fed's open market transactions in 1985 and illustrates some of the points made above. As already noted, the table

shows that the total volume of transactions in 1985 greatly exceeded the net change in the System's portfolio of approximately \$21.6 billion. The table also indicates that the volume of repurchase agreements and matched sale-purchase transactions was much larger than the volume of outright purchases and sales. Finally, the table shows that the vast majority of operations are carried out using U.S. Treasury securities. Further, since most repurchase agreements and matched sale-purchase transactions are conducted with short-term Treasury bills and, as the table indicates, a sizable portion of outright transactions are done with bills, it is clear that a majority of the Fed's total operations are conducted using bills. The liquidity of bills makes them especially suitable for open market operations.¹⁷

The second instrument or tool of monetary policy is the *discount rate*. As pointed out in Section 1, all depository institutions with reservable deposits may borrow reserves from the Fed's discount window for short-term adjustment purposes and a limited number of other reasons, subject to certain administrative restrictions contained in the System's Regulation A. The discount rate is the interest rate charged on these loans. As a technical matter, a depository institution can borrow from the window in two ways: (1) by "discounting," that is, selling loans or other assets carrying its endorsement to the Fed, or (2) through an advance, which is a loan from the Fed to the institution on the institution's note, which must be secured by acceptable collateral. At present, nearly all borrowing at the window is via advances because of their greater convenience. In the early days of the System, however, discounting was the more common procedure, and this historical legacy is the origin of the terms *discount window* and *discount rate*. Most borrowing at the window is at the basic discount rate. Higher rates are charged for certain categories of extended credit.

Each of the 12 Federal Reserve Banks has a discount window managed by a discount officer, and the boards of directors of the Banks set the rates for their respective Banks subject to the approval of the Board of Governors. When the System was created, it was anticipated that discount rates would vary from one Bank to another in recognition of differing economic conditions across Federal Reserve Districts. At present, the discount rates are generally uniform across the country

¹⁷ For an excellent nontechnical description of open market operations, see Meek [18]. See also Partlan, Hamdani and Camilli [20].

except for brief transitional differences when the rate is being adjusted either upward or downward.

As noted in Section 1, providing loans through the discount window is one of the Fed's most important functions in the context of its broad responsibility for the liquidity and stability of U.S. financial markets. The focus of the present discussion, however, is on the role of the discount rate as an instrument of monetary policy. Essentially, the Fed uses the discount rate to reinforce its efforts to manage reserves through open market operations. Although many depository institutions are reluctant to borrow from the window, and all institutions are subject to various rules and administrative constraints when they do borrow, a discount rate that is low in relation to other short-term rates tends to encourage borrowing, and, conversely, a high discount rate in relation to other rates tends to discourage borrowing. Therefore, if the Fed, for example, were trying to restrain the growth of reserves, and this restraint were putting upward pressure on the Federal funds rate and other market rates, the maintenance of an unchanged discount rate might tend to raise the aggregate level of borrowing at the window at least temporarily, which would work against the thrust of open market operations. In this situation, the Fed might raise the discount rate to reinforce its open market operations. In addition to its direct impact on borrowing, the announcement of the discount rate increase would be a strong signal of the direction of Fed policy to both the financial markets and the general public, because such changes are highly visible and receive considerable attention from the news media.¹⁸ Similarly, if the Fed were trying to stimulate reserve growth through open market operations, it might reduce the discount rate at some point.¹⁹

While it can be broadly said that the Fed reinforces its open market operations with changes in the discount rate, in general this reinforcement is highly discretionary and judgmental with respect to both the magnitude and timing of discount rate changes. Stated differently, there are no specific rules or formulas controlling the manner in which the Fed manages the discount rate in conjunction with its other policy actions, and the timing and magnitude of changes in the rate in particular

¹⁸ For a detailed analysis of the effects of discount rate announcements, see Cook and Hahn [9].

¹⁹ In addition to changing the basic discount rate, on some occasions in the recent past the Fed has added surcharges to the basic rate as a means of reinforcing restrictive open market operations. For example, in 1980 and 1981 the System added a two to four percentage point surcharge to adjustment borrowing by larger institutions that borrowed in two successive weeks or in more than four weeks in a 13-week period.

instances reflect a variety of external factors including the strength of the monetary or economic trends the Fed may be reacting to and its perception of expectations in the financial markets. At the same time, the short-run impact of discount rate changes on market interest rates depends to some extent on the particular short-run operating procedures the Fed is using in implementing policy, and the Fed has to take these relationships into account in deciding on discount rate actions in particular circumstances. Specifically, changes in the discount rate have generally stronger and more immediate effects on market rates under the operating procedures the Fed has used in the 1980s.²⁰

Although the Board of Governors exercises final control over the discount rate, the participation of the Reserve Bank boards of directors in the process of setting the rate has considerable practical importance. Specifically, when a Reserve Bank board proposes a change in the rate, the Board of Governors must consider the proposal and make an explicit decision to approve it, disapprove it, or table it for later consideration. In this way, the Board is made aware of the thinking of a cross section of well-informed citizens from a variety of backgrounds and regions regarding the appropriate level of the rate and, more generally, the appropriate direction of monetary policy as a whole.

The third major instrument or tool of monetary policy is *reserve requirements*. Under current law, all depository institutions operating in the United States (including not only domestic commercial banks but also savings banks, savings and loan associations, credit unions, Edge Act and agreement corporations, and U.S. branches and agencies of foreign banks) must hold required reserves against their (1) net transactions accounts, (2) nonpersonal time deposits, and (3) Eurocurrency liabilities.²¹ These required reserves must be held in the form either of vault cash or deposits at a Federal Reserve Bank. The Board of Governors of the Fed establishes these requirements in terms of percentages of particular categories of reservable liabilities. The panel on the right-hand side of Table 4 shows the reserve requirements in effect in June 1986. As the table indicates, at that time depository institutions had to hold reserves equal to 12 percent of their net transactions accounts in excess of \$31.7 million, and so forth. Under the law, the Board sets the requirements within specific ranges for each category of reservable

²⁰ See Broaddus and Cook [7].

²¹ In this context, the term Eurocurrency liabilities refers to funds that U.S. depository institutions raise abroad for use in the United States.

Table 4

RESERVE REQUIREMENTS OF DEPOSITORY INSTITUTIONS

Percent of Deposits

Type of deposit, and deposit interval	Member bank requirements before implementation of the Monetary Control Act		Type of deposit, and deposit interval ⁵	Depository institution requirements after implementation of the Monetary Control Act ⁶	
	Percent	Effective date		Percent	Effective date
<i>Net demand</i> ²			<i>Net transaction accounts</i> ^{7,8}		
\$0 million–\$2 million	7	12/30/76	\$0–\$31.7 million	3	12/31/85
\$2 million–\$10 million	9½	12/30/76	Over \$31.7 million	12	12/31/85
\$10 million–\$100 million	11¾	12/30/76	<i>Nonpersonal time deposits</i> ⁹		
\$100 million–\$400 million	12¾	12/30/76	By original maturity		
Over \$400 million	16¼	12/30/76	Less than 1½ years	3	10/6/83
<i>Time and savings</i> ^{2,3}			1½ years or more	0	10/6/83
Savings	3	3/16/67	<i>Eurocurrency liabilities</i>		
<i>Time</i> ⁴			All types	3	11/13/80
\$0 million–\$5 million, by maturity					
30–179 days	3	3/16/67			
180 days to 4 years	2½	1/8/76			
4 years or more	1	10/30/75			
Over \$5 million, by maturity					
30–179 days	6	12/12/74			
180 days to 4 years	2½	1/8/76			
4 years or more	1	10/30/75			

Note: This table shows percentage reserve requirements as of June 1986 without important supplemental information. This information is provided in the detailed footnotes to the table showing reserve requirements in the monthly *Federal Reserve Bulletin*. See, for example, Table 1.15 on page A7 of the *Federal Reserve Bulletin* for June 1986.

Source: Board of Governors of the Federal Reserve System.

liabilities. The range for net transactions deposits (in excess of an initial tier, which was \$31.7 billion in June 1986) is 8 to 14 percent, and the range for nonpersonal time deposits is 0 to 9 percent. There are no limits on the requirements that can be established for Eurocurrency liabilities. In addition to the regular requirements shown on the right-hand side of Table 4, the Board can also place a supplemental requirement of up to 4 percentage points on net transactions accounts, and, for periods up to 180 days, it can establish requirements outside the regular ranges and on other liabilities. When it imposes these supplemental requirements and extensions, however, the Board must follow certain procedures prescribed by law.

With regard to monetary policy and monetary control, reserve requirements affect the quantitative relationship between the aggregate reserves held by depository institutions and the various monetary aggregates the Fed seeks to influence, all of which include some reservable liabilities. More precisely, reserve requirements put limits on the volume of reservable deposits and other liabilities that can be supported by any given volume of aggregate reserves. Therefore, the Fed could, if it chose to, manipulate reserve requirements to reinforce its other policy actions. For example, if it had adopted a generally restrictive posture, it might raise reserve requirements, and vice versa. In practice, the Fed rarely uses reserve requirements in this way. Frequent changes in the requirements would obviously be a substantial administrative burden on both the Fed itself and the institutions subject to the requirements. Further, even relatively small changes in reserve requirements can have a sizable impact on the availability and cost of reserves and are therefore not appropriate for effecting the generally incremental changes in reserve conditions the Fed is usually trying to achieve on a day-to-day basis. For this reason, the System tends to focus on reserve requirements as a central element of the institutional apparatus linking reserves quantitatively to the monetary aggregates rather than as an instrument to be manipulated. In this light, a topic of continuing interest is how the structure and coverage of the requirements might be changed to make the quantitative relationship between reserves and the monetary aggregates more predictable.

The structure and coverage of reserve requirements have in fact been changed in important ways in recent years. As noted earlier, the Depository Institutions Deregulation and Monetary Control Act of 1980 extended reserve requirements to all depository institutions. Prior to the passage of this Act, the requirements had applied only to member banks

and a few other categories of institutions. The Act also simplified the structure of the requirements by making them more uniform within particular deposit categories and eliminating the requirements against personal savings and time deposits. (The left panel of Table 4 shows the structure of the requirements prior to 1980, which can be compared to the present structure shown on the right.) Both of these changes were consistent with making the structure of the requirements potentially more efficient for controlling the monetary aggregates, especially the narrow M1 aggregate. Specifically, the extended coverage makes all of the deposits included in M1 reservable, while reducing the coverage of assets not in M1. The greater simplicity of the requirement structure can increase the predictability of the quantitative relationship between reserves and the monetary aggregates by reducing the impact on this relationship of changes in the distribution of deposits across different deposit categories and different size classifications of depository institutions.

In addition to these changes in structure and coverage, one other recent change in reserve requirements potentially relevant to monetary control should be pointed out. Prior to 1984, all reserve requirements were lagged: reserves were held in a given week against reservable liabilities held two weeks earlier. Since 1984, the requirements against net transactions accounts have been nearly contemporaneous. Specifically, depository institutions must maintain some average level of reserves (determined by the percentage requirement) over a two-week "maintenance period" ending on a Wednesday against the average level of net transactions deposits held over a two-week "computation period" ending on the Monday two days earlier. Depository institutions may adjust their balance sheet positions more rapidly in response to Fed actions affecting reserves under this new contemporaneous accounting procedure than under the former fully lagged system. If so, these more rapid adjustments might facilitate the control of M1.²²

²² The adjustment-forcing character of contemporaneous accounting is reduced to some extent by carry-over privileges, which allow institutions to carry a reserve deficiency of up to 2 percent of requirements forward to the next maintenance period. (Excess reserves up to 2 percent of requirements can also be carried forward.) In addition to the carry-over allowance, the existence of the discount window, where, under current procedures, the discount rate is typically below the Federal funds rate, also reduces the incentive for rapid adjustment, which has led some economists to suggest that the discount rate be set at a penalty level above the Federal funds rate. For a thorough analysis of the ramifications of contemporaneous reserve accounting, see Goodfriend [14].

Although reserve requirements are a potentially important element in the Fed's strategy of controlling monetary aggregates, it should be noted that this potential importance varies with the particular tactical procedures the Fed employs.²³ The structure of reserve requirements would be highly significant in a regime where the Fed was controlling the monetary aggregates using total reserves as the control instrument, since the empirical relationship between reserves and the aggregates and the predictability of this relationship would be critically important in such a regime. Reserve requirements play a less important role in other operating regimes.²⁴

The tactics of monetary policy: Operating procedures This subsection describes the Fed's tactical operating procedures; that is, the procedures the System uses in conducting monetary policy over a short-run horizon of several weeks. The purpose of the procedures is to link the Fed's day-to-day open market operations with its longer-run strategic objectives. In essence, the operating procedures guide open market operations with a view to making them as consistent as feasible at any point in time with the System's longer-run strategy.

Because the Fed's strategy since the mid-1970s has been to pursue the nation's basic economic goals by controlling monetary aggregates, the System's operating procedures in recent years have aimed at facilitating monetary control. In general, there are two kinds of short-run procedures that the Fed (or any other central bank, for that matter) can use to control the monetary aggregates. One approach is to control them from the supply side by controlling total reserves. The other is to control them from the demand side by controlling conditions in the money markets as indexed by some short-term interest rate or some other money market variable.

Each of these two broad categories of control procedures requires further explanation. In a regime in which total reserves was the control variable, the Fed would use its target ranges for the growth of the monetary aggregates to construct a desired path for the growth of total reserves. This path would take account of both the necessary growth of required reserves, given the monetary targets and the level of reserve requirements, and any excess reserves depository institutions might be

²³ These procedures are discussed further in the next subsection.

²⁴ In a detailed study, Goodfriend and Hargraves [15] argue that reserve requirements have played only a minor role in the conduct of monetary policy in the United States historically.

likely to hold above required reserves. The Fed would then conduct open market operations in such a way as to make the actual growth of total reserves conform as closely as feasible to the desired path. In doing so, of course, it would continuously update the desired path on the basis of new information bearing on the relationship between the growth of total reserves and the monetary aggregates.

In practice the Fed has never used a total reserve control procedure because it has not been able to control total reserves closely in the short run under either past or present institutional arrangements. While the System can control *nonborrowed* reserves through open market operations, it cannot control *total* reserves, because the level of borrowing at the discount window is determined in the short run by the preferences of depository institutions. In order to control total reserves, it would be necessary for the System to make institutional changes that would allow it to determine the level of borrowing at the same time it is independently determining the level of nonborrowed reserves. Two alternative institutional changes that would have this effect would be (1) to make the discount rate a continuous penalty rate, or (2) to control the total level of borrowing closely by administrative fiat.

The other broad approach to controlling the monetary aggregates is from the demand side via control of a short-term interest rate or some other variable that is a good barometer of short-term money market conditions. There is wide agreement among economists that the public's demand for money balances is strongly influenced by the behavior of short-term interest rates. The reason for this relationship is as follows. Two of the most important components of any definition of money are currency and demand deposits, neither of which pays explicit interest. Therefore, a change in market rates affects the opportunity cost of holding money balances, as an alternative to interest-bearing nonmoney assets, and hence the public's money demand. For example, an increase in market rates increases the opportunity cost and therefore reduces the demand for money. Similarly, a reduction in rates reduces the opportunity cost and increases demand. Hence, the Fed could work to restrain money growth by acting to make money market conditions tighter, which would put upward pressure on short-term interest rates, and vice versa. Obviously, this procedure in principle would be more appropriate for controlling the narrow M1 measure of money than the broader aggregates, such as M2 and M3, since non-interest-bearing currency and demand deposits are a larger proportion of M1 than of M2 or M3. Whether or not this approach to monetary control is effective in practice,

of course, depends on the predictability of the empirical relationship between the particular money market variable selected and the monetary aggregates.

The Fed had used three variants of the latter, money market conditions approach to monetary control between the mid-1970s, when it first began to announce target ranges for the aggregates, and the mid-1980s.²⁵ Prior to October 1979, the System attempted to estimate the level of the Federal funds rate—the overnight interest rate on reserve funds in the open money market—consistent with the rate at which it wanted M1 and the other monetary aggregates to grow. It then used open market operations to hold the Federal funds rate within a narrow range around that level in the short run. An important disadvantage of this approach in practice was that when the public became fully aware that the Fed was using the Federal funds rate in this way, financial markets became very sensitive in the short run to even small changes in the rate, and small adjustments in the rate sometimes produced strong political reactions. Both conditions made it difficult for the Fed to adjust the rates as frequently as necessary for effective control of the monetary aggregates.

Against this background, in October 1979 the Fed stopped using the Federal funds rate as its direct control instrument and began to focus on various reserve measures in order to improve its monetary control performance. Even though there has been a general shift of focus toward reserves, however, it is important to distinguish these recent control procedures from controlling the aggregates by controlling total reserves. From October 1979 until late 1982, the Fed used nonborrowed reserves as its instrument. In this regime, the System set a path for nonborrowed reserves that it believed was consistent with the desired paths of the monetary aggregates. With nonborrowed reserves thus predetermined, any change in depository institution demand for total reserves occasioned by a deviation of the monetary aggregates from their desired paths had to be accommodated by a corresponding change in the level of borrowing at the discount window, either upward or downward. This change in borrowing, in turn, affected the Federal funds rate and other short-term interest rates and hence the demand for

²⁵ For a more detailed account of what follows, see Wallich [22].

money.²⁶ For example, if the growth of the monetary aggregates began to exceed the desired paths, the demand of depository institutions for total reserves would rise, which would cause the level of borrowing at the window to increase. The increased borrowing would then put upward pressure on the Federal funds rate and other market rates, given the general reluctance to borrow and the Fed's administrative restrictions on borrowing. The rise in rates, finally, would reduce the demand for money and the growth of the monetary aggregates.

In many ways the nonborrowed reserves procedure was potentially the strongest monetary control procedure the Fed has employed in practice, because when followed strictly, it generated an automatic response of reserve market conditions and interest rates to deviations of the monetary aggregates from their paths. For various reasons explained further in Section 3B below, the Fed dropped this approach in the fall of 1982 and began to use the level of borrowing as its instrument. In this regime the System aims at maintaining the level of borrowing in some relatively narrow desired range and then accommodates changes in depository institution demand for reserves by adjusting nonborrowed reserves through open market operations. This post-1982 approach is similar in essence to the pre-October 1979 procedure of controlling the Federal funds rate, because in this regime, as in the pre-October 1979 regime, the Fed influences the growth of the aggregates by affecting the level of the Federal funds rate and other market rates. The difference is that instead of controlling the Federal funds directly and tightly, in the borrowed reserve regime the System influences the rate indirectly, and it does not generally attempt to control it as tightly.

This description of the three operating regimes the Fed has used in recent years requires two rather detailed but important and related qualifications—or at least clarifications. First, although some economists regard the nonborrowed reserve procedure used between October 1979 and the fall of 1982 as intermediate between the total reserve and money market condition classes of operating procedures delineated above, a case can be made that in its implementation the nonborrowed reserve procedure belonged to the class of money market condition procedures. Although market forces played a larger role in determining the level of the Federal funds rate in the short run in the nonborrowed reserve

²⁶ At a technical level, the relationship between borrowing at the window and short-term market rates was the central relationship in the nonborrowed reserve regime. See Goodfriend [12] for a thorough analysis of the nonborrowed reserves operating procedure.

regime than in the other two regimes, the average level of the funds rate was still a central indicator of the Fed's operating stance in the short run. Second, the nonborrowed reserves procedure was not always followed slavishly in the 1979–82 period. Specifically, the nonborrowed reserve path was sometimes altered to accommodate at least part of the impact of unanticipated movements in the monetary aggregates on required reserves. To the extent that such alterations were made, the changes in required reserves did not have to be accommodated at the discount window, and they did not affect the Federal funds rate and other money market conditions. In short, in practice the differences between the 1979–82 regime and the other two regimes were not as great as the description above might suggest.

Two final points regarding the Fed's tactical procedures should be made. First, under all of the approaches that have been used—especially the pre-October 1979 approach and the post-1982 borrowed reserve procedure—it is possible to “look through” the monetary aggregates to the final goal variables of policy. In this way, one can think of the process as running directly from the Fed's influence on money market conditions to broader credit market conditions and long-term interest rates, and then to such goal variables as aggregate spending, income, and employment. It is probable that many individual policymakers who have a generally neo-Keynesian view of the monetary policy transmission mechanism regard the process in this manner. Further, this view of the process probably became more widespread in the 1980s due to the unusual and unpredictable behavior of monetary velocity that accompanied the extensive financial deregulation in this period.

Second, as suggested in the discussion of the discount rate in the preceding subsection, the role of the discount rate has been enhanced to some degree by the nonborrowed reserve and borrowed reserve control procedures of the 1980s. In both of these regimes, where the Federal funds rate tends to vary somewhat more flexibly than in the pre-October 1979 regime, and the aggregate level of borrowing tends to be somewhat less flexible, changes in the discount rate are often followed by roughly equal changes in the Federal funds rate in the same direction. This occurs because the level of borrowing in the short run is strongly influenced by the width of the (typically positive) spread between the Federal funds rate and the discount rate. With borrowing relatively constant in the short run under these regimes, a change in the discount rate requires a corresponding change in the Federal funds rate to maintain a relatively constant spread.

The policymaking process The process by which specific decisions are made within the strategic and tactical framework outlined in the preceding subsections is of considerable interest to participants in financial markets, because many market professionals believe that knowledge of the process may be helpful in anticipating the timing of the Fed's major policy actions and may therefore be profitable. The process centers around two events: (1) meetings of the Federal Open Market Committee (FOMC) and (2) the establishment of the discount rate by the boards of the Reserve Banks with the concurrence of the Board of Governors.

At present the FOMC has eight regular meetings each year, all of which are held at the offices of the Board of Governors.²⁷ The nonvoting Reserve Bank presidents as well as the voting presidents attend each meeting and participate fully in the discussion. Senior members of the Board of Governors staff also attend, and each Reserve Bank president is accompanied by one member of his staff, usually the director of his Bank's research department. Prior to the meeting, all participants will have received and studied a considerable volume of documentation prepared by the staffs of the Board of Governors and the Trading Desk at the New York Reserve Bank. The most important documents are the so-called Greenbook and the Bluebook. The Greenbook contains comprehensive macroeconomic and financial projections for several quarters in the future. The staff uses a large structural model of the economy in preparing these forecasts, but the model output is modified extensively by judgmental adjustments in developing the final projections. The Bluebook summarizes recent financial and monetary data and presents a set of two or three alternative specifications for the short-run operating instructions to be included in the "directive" to the Manager for Domestic Operations. These alternatives are based on a combination of econometric and judgmental estimates of the short-run relationship between (1) the operating instrument the FOMC is using (the level of borrowing at the discount window in late 1986) and (2) the monetary aggregates. Further, if the FOMC is considering the longer-run target ranges for the monetary aggregates at a particular meeting, the Bluebook presents alternative sets of ranges, sometimes with projections of important economic variables such as the growth of real GNP and the

²⁷ The structure and composition of the FOMC is discussed in Section 2. The frequency of FOMC meetings has varied historically. Through much of the 1970s, for example, meetings were held each month.

implicit GNP price deflator, thought to be consistent with each alternative. All FOMC participants are briefed on the content of these documents by their respective staffs, since much of the discussion at the meeting itself begins with the projections and policy alternatives presented in these materials.

The agenda for FOMC meetings in recent years has been fairly standard. The meetings typically begin with a report of the Manager for Foreign Operations at the Federal Reserve Bank of New York, who conducts foreign currency operations as agent for both the FOMC and the Treasury.²⁸ His report is usually followed by a discussion of international financial and monetary developments. The Manager for Domestic Operations (i.e., the Manager of the Trading Desk) then reports on domestic open market operations during the period since the last FOMC meeting. The burden of this report is to show that the Desk's actions were consistent with the directive given him by the FOMC at the last meeting.²⁹

Following consideration and acceptance of the Domestic Manager's report, the Committee discusses current economic conditions and the economic outlook in detail as background for the deliberation on monetary policy that follows. This portion of the meeting begins with a presentation by the Director of the Division of Research and Statistics at the Board of Governors which summarizes and explains the economic projections in the Greenbook. Each of the participants then has an opportunity (which he usually takes) to state his individual view of the economy. These statements typically include the speaker's reactions to the projections in the Greenbook—particularly points of disagreement regarding either the broad profile of the forecasts or detailed parts of it. The Reserve Bank presidents may present projections that have been developed independently by their own research staffs, and they often provide information regarding regional conditions in their Districts that might have a bearing on the national outlook. Many of the participants also relay anecdotal information to supplement the formal statistical information provided in the Greenbook.³⁰

²⁸ The international dimensions of Fed monetary policy are discussed in the next subsection.

²⁹ The content of the directive is discussed below.

³⁰ Prior to each FOMC meeting, each of the Reserve Banks sends a report on conditions in its District to the Board of Governors. These reports are compiled in a so-called Beigebook that is distributed to all FOMC participants and also transmitted to Congress.

After the economic “go-around” is completed, the Committee turns its attention to monetary policy. The Staff Director for Monetary and Economic Policy of the Board of Governors staff summarizes the various short-run policy alternatives presented in the Bluebook. The Committee discusses these options—usually in a go-around in which all participants indicate their preferences—and decides on the particular position it wishes to adopt, which may or may not coincide with one of the alternatives in the Bluebook. It then considers and votes on a written short-run directive to be issued to the Manager of the Desk to guide open market operations over the period to the next FOMC meeting. At its meetings in February and July, the Committee also considers and sets (or reaffirms) long-run ranges for the monetary aggregates. In doing so, it follows the targeting procedure outlined earlier in this article. The discussion of the long-run ranges at these meetings occupies a separate position on the agenda from the discussion of the short-run situation, and the Committee’s decision on the ranges is arrived at through a separate vote. Also, as pointed out earlier, the Fed Chairman publicly announces decisions on the long-run ranges in Congressional testimony shortly after these meetings in accordance with the requirements of the Humphrey-Hawkins Act.

The short-run directive is very important because, in addition to instructing the Manager, it provides a relatively precise public record of the substantive short-run actions taken by the FOMC at a particular meeting. In order to interpret the directive, however, it is necessary to understand its structure.³¹ The directive is usually about six paragraphs long. The first several paragraphs provide background information on domestic economic and financial developments and conditions in foreign exchange markets. A later paragraph states or restates the Committee’s long-run target ranges for the monetary and credit aggregates and any special circumstances relevant to these ranges. The final paragraph is the key paragraph. It contains the detailed short-run operational instructions to the Manager.

The structure of the operational paragraph evolves slowly over time in accordance with changes in the FOMC’s tactical operating procedures and other developments, but financial market professionals are usually

³¹ Under the procedures in effect in late 1986, the directive issued at an FOMC meeting is included in the “Record of Policy Actions” for the meeting, which is released to the public shortly after the *next* meeting of the Committee. In this way, the public is never informed of the directive currently in effect. The desirability of this practice has become a matter of considerable debate. See Goodfriend [13].

aware of the structure at any given time and hence are able to interpret the meaning of relatively small changes in language and other nuances. As an example, the operational paragraph of the directive (see Box) issued at the FOMC meeting on September 23, 1986, when, as noted in the preceding subsection, the Committee was using borrowed reserves as its operating instrument. Experienced market observers interpreted

Box

**OPERATIONAL PARAGRAPH OF DIRECTIVE
ISSUED AT FOMC MEETING ON
SEPTEMBER 23, 1986**

In the implementation of policy for the immediate future, the Committee seeks to *maintain* the existing degree of pressure on reserve positions. This action is expected to be consistent with growth in M2 and M3 over the period from August to December at annual rates of 7 to 9 percent. While growth in M1 is expected to moderate from the exceptionally large increase during the past several months, that growth will continue to be judged in the light of the behavior of M2 and M3 and other factors. Slightly greater reserve restraint *would*, or slightly lesser reserve restraint *might*, be acceptable depending on the behavior of the aggregates, taking into account the strength of the business expansion, developments in foreign exchange markets, progress against inflation, and conditions in domestic and international credit markets. The Chairman may call for Committee consultation if it appears to the Manager for Domestic Operations that reserve conditions during the period before the next meeting are likely to be associated with a federal funds rate persistently outside a range of 4 to 8 percent.

Votes for this action: Messrs. Volcker, Corrigan, Angell, Guffey, Heller, Mrs. Horn, Messrs. Johnson, Melzer, Morris, Rice, and Ms. Seger. Vote against this action: Mr. Wallich.

Note: Emphasis added.

Source: Board of Governors of the Federal Reserve System.

this particular directive as follows. The first sentence said in effect that for the period immediately following the meeting, the objective for borrowed reserves had not been changed. The phrase "degree of pressure on reserve positions" was understood to refer to the borrowing objective, and the word "maintain" indicated that the objective had been left unchanged. The second and third sentences discussed the

short-run behavior of the monetary aggregates believed to be consistent with an unchanged borrowing objective. At the time of this meeting, the Committee was giving somewhat less attention, in relative terms, to the behavior of the narrow M1 measure of money than to the broader M2 and M3 measures because of the unusual behavior of the velocity of M1 at the time.³² This ordering was indicated by (1) the statement of the expected short-run M2 and M3 growth rates before the reference to M1, and (2) the absence of an explicit expected growth rate for M1. The fourth sentence indicated how the Manager should adjust the borrowing objective in the light of new information regarding the aggregates and economic and financial developments. The key words in this sentence were “would” and “might.” Because *would* is a somewhat stronger term than *might*, the sentence suggested that the Committee was somewhat more inclined to raise the borrowing objective—that is, “tighten” its short-run policy position—in the light of emerging developments than to ease its position.

To summarize, the directive shown in the Box instructed the Manager (1) to maintain the existing short-run policy stance initially, and (2) to move somewhat more aggressively to tighten policy than to ease it if conditions changed in one direction or the other. Market analysts interpreted these instructions as constituting a very slight “snugging” or tightening of the FOMC’s overall posture compared with the directive it had issued at its preceding meeting on August 19. At that meeting, the Committee had voted to “decrease slightly” the pressure on reserve positions. As shown in the Box, one member of the Committee voted against the action taken at the September 1986 meeting. Such dissents are fairly frequent, since the FOMC must often make its policy decisions in the face of substantial uncertainties. The Record of Policy Actions that includes a particular directive also includes a brief statement of the reasons for any dissenting votes.

The other principal element of the policymaking process is the setting of the discount rate. The boards of directors of the Reserve Banks (or the executive committees thereof) are required by law to consider and set the basic discount rate and related rates at least every 14 days. Before making its decisions on the rate, the boards are briefed in detail on recent national economic and financial developments by the research staffs at the Banks. The focus on national considerations is appropriate because, as indicated above, the discount rate is uniform across all

³² The behavior of the monetary aggregates in this period is discussed further in Section 3B.

Reserve Banks except for brief transition periods when the rate is being changed. Therefore, if the Board of Governors approves a change at one Bank, the change will quickly be followed at all Banks. All Reserve Bank actions on the discount rate, including renewals as well as changes, are transmitted immediately to the Board of Governors, which considers them and either approves, disapproves, or tables them. If the Board approves a change in the rate, the change is announced publicly on the same day. Such announcements are usually made late in the afternoon after U.S. financial markets have closed in order to avoid disrupting the markets. A summary of the Board's discount rate actions is published each year in the Board's *Annual Report*.

As suggested earlier, the significance of the role of the Reserve Bank boards in setting the discount rate should not be underestimated even though the Board of Governors must approve all actions on the rate. The members of the Reserve Bank boards are knowledgeable citizens from a wide variety of backgrounds. If several of the boards are simultaneously recommending a change in the rate in the same direction, the Board of Governors will naturally give this circumstance considerable weight in deciding whether or not to approve the proposal. Also, under current procedures, the boards of the Banks routinely convey the reasons for their actions to the Board of Governors, which then takes these reasons into account in reaching its final decisions.

In the period prior to October 1979, when the FOMC was using the Federal funds rate rather than borrowed reserves as its operating instrument, there was a looser short-run relationship between the Federal funds rate and the discount rate than in the 1980s. Therefore, there was less reason before 1980 than subsequently to coordinate discount rate changes with the FOMC's actions affecting open market operations and the Federal funds rate. As already noted, discount rate actions have a direct and relatively predictable short-run impact on the Federal funds rate in the nonborrowed reserve and borrowed reserve regimes of the 1980s. For this reason, somewhat greater attention has been given to the need to coordinate discount rate actions and open market operations at FOMC meetings in the 1980s than earlier.

International dimensions of monetary policy Up to this point the discussion has focused on the domestic aspects of Fed monetary policy. Fed policy has an increasingly important international dimension, however, because of the dramatic growth of U.S. trade and financial relationships with other countries in recent years. Financial markets are

now highly integrated throughout the industrial world. As a result, the Fed's monetary policies can have significant impacts, especially in the short run, on economic and financial developments in other countries, and, conversely, the monetary policy actions of central banks in other developed countries can influence events in the United States. For this reason, the Fed necessarily takes account of international economic and financial conditions in pursuing its domestic economic objectives, and it communicates regularly with other central banks around the world to facilitate attainment of the shared goal of stability in international product and financial markets. It should be noted that this need to take account of international factors in conducting monetary policy continues to exist in the present regime of floating exchange rates. In principle, a floating exchange rate regime can insulate the economies of individual countries from the effects of the monetary policy actions of other countries. In reality, however, lags in the adjustment of exchange rates to the policy actions of particular countries allow the impacts of such changes to cross borders. More importantly, the current regime is not a "pure" float in which exchange rates are determined entirely by private market conditions. Instead, central banks intervene in the exchange markets individually and jointly from time to time to achieve specific exchange rate objectives.

As an example of circumstances where the Fed might allow international conditions to influence its policy actions, consider a hypothetical situation where the U.S. economy had been growing at a persistently slow pace and the current rate of domestic inflation was relatively low. Under these conditions, the Fed might want to consider easing its short-run policy stance somewhat to include, perhaps, a reduction in the discount rate. If the dollar were coming under strong downward pressure in the exchange markets for some reason, however, the Fed might delay taking such action in order to avoid weakening the dollar further, particularly if it seemed likely that monetary policy might also be eased in one or more other important countries in the near future. It should be emphasized here that although the Fed gives continuous attention to international developments in deciding on particular policy actions, the domestic objectives of policy remain paramount. Therefore, as in this example, international considerations are more likely to affect the timing of the Fed's actions than the longer-run substance of policy in most cases.

In addition to taking account of international events and conditions in conducting domestic monetary policy, on occasion the Fed also carries

out certain foreign currency operations that can directly affect exchange rates in the short run. These operations are actually conducted by a Manager for Foreign Operations at the Federal Reserve Bank of New York under (1) an Authorization for Foreign Currency Operations and (2) a Foreign Currency Directive established by the FOMC. These operations are approached in a very different manner, however, from the domestic open market operations discussed earlier. Specifically, whereas the directive for domestic open market operations is typically adjusted each month in accordance with emerging economic and financial developments, the Foreign Currency Directive is not usually changed. In general, the latter directive instructs the Manager for Foreign Operations to make purchases and sales in foreign exchange markets (i.e., to “intervene” in these markets) as appropriate to counter any disorderly conditions that may arise in the current floating rate regime. The Manager reports his actions at each FOMC meeting, and the Committee must ratify them as a way of ensuring they have been consistent with the continuing directive. It is important to point out here that the Fed conducts its foreign currency operations in close coordination and cooperation with the U.S. Treasury, which is responsible for managing the nation’s overall reserve position. It should also be noted that the potential effect of both the Fed’s foreign currency operations and those of other central banks on the reserve position of U.S. depository institutions is routinely “sterilized” or offset in the course of domestic open market operations. In other words, neither the Fed’s interventions in foreign exchange markets nor those of other central banks are allowed to affect U.S. money market conditions.

Although the principal purpose of foreign currency operations in the floating rate regime of the 1970s and 1980s has been to counter disorderly exchange market conditions, in recent years the System has intervened on some occasions to achieve broader goals, as illustrated particularly by events in the second half of 1985. The U.S. dollar appreciated sharply against other major currencies in the early 1980s, probably largely as a result of fiscal policy initiatives in this period that increased the real after-tax rate of return to capital investment in the United States. This appreciation had a severely depressing effect on many U.S. business firms that export or that compete with imported goods in U.S. markets. Against this background, a depreciation of the dollar that began in February 1985 was greeted with considerable relief. In August and September of that year, however, the dollar reversed course and began to appreciate sharply, which intensified growing

demands in Congress for protectionist legislation. In this situation, representatives of the G-5 countries met in New York in late September, and following this meeting these countries intervened actively and concertedly in the exchanges to encourage the appreciation of nondollar currencies. From the time of this meeting through November, the Fed and the Treasury together sold approximately \$3.3 billion, and the other G-5 countries sold about \$9.7 billion. Following these operations, the dollar turned back down and declined another 12 percent over the remainder of the year.

The foreign currency operations of both the Fed and other major central banks have been greatly facilitated in recent years by the existence of a so-called "swap" network of reciprocal currency exchange arrangements. Under these arrangements the Fed can acquire foreign currencies from its counterparts abroad when needed to support the dollar in the foreign exchange market, and foreign central banks can acquire dollars from the Fed to support their respective currencies. As of January 31, 1986, the Fed had swap arrangements with 14 foreign central banks and the Bank for International Settlements. The total amount of these facilities on that date was \$30.1 billion.

An individual currency swap involves a *spot* transaction and a simultaneous *forward* transaction. In the spot transaction the Fed swaps (i.e., exchanges) dollars for a foreign currency with another central bank. In the forward transaction the two banks agree to reverse the swap three months later. The bank that initiates the swap is said to make a swap "drawing" and is typically thought of as the "borrower" in the transaction. As an example, the Fed might obtain German marks for the purpose of supporting the dollar by drawing on its swap arrangement with the German Bundesbank. In the spot transaction the Fed would exchange dollars for marks, which it would then use to purchase dollars in the open market. At the same time it would make a forward commitment to reverse the exchange three months later. At the end of the three months, the Fed would have to reacquire the marks—which it would typically do in the market—to meet its forward obligation.

Both the Fed and its partner central banks in the swap network have used the arrangements actively at various times since the network came into being in the early 1960s. The Fed, for example, used the network to acquire substantial amounts of several foreign currencies for intervention operations when the dollar was under sharp downward pressure in the late 1970s. More recently, the central bank of Mexico made sizable

drawings of dollars through the facility during the liquidity crisis in that country in 1982.

B. Some Major Recent Developments and Issues in Monetary Policy

This section will present a brief and highly selective overview of the recent history of Fed monetary policy and certain key current issues regarding policy. In general the focus will be on the period from approximately 1973, when the first of the two oil price “shocks” of the 1970s occurred, to the end of 1985. Although this 12-year period is relatively brief in the context of the longer-run history of Fed policy, it has been a period of rapid and dramatic change in both the actual conduct of policy and the economic analysis related to policy. In particular, the U.S. economy in this period has gone through a transition from a situation in the late 1970s where the inflation rate was rising steadily and alarmingly to a sustained condition of significantly lower and more stable inflation in the mid-1980s. The following discussion attempts to illuminate the role Fed policy played in this transition and to extract any lessons these events may contain regarding the overall conduct of policy.³³

The acceleration of inflation after 1965 The period from the end of the Korean War, in 1953, to 1965 was distinguished by remarkable price stability in the United States by historical standards. The average annual inflation rate during this 12-year span as measured by the implicit GNP deflator was 2.3 percent. Further, the annual rates ranged narrowly between a high rate of 4.0 percent in 1956 and a low rate of 1.2 percent in 1963.³⁴

This tranquil price behavior ended in the late 1960s due at least in part to the concurrent initiation of major new federal social programs and the military buildup in Vietnam. The inflation rate rose from 3.0 percent in 1965 to 5.8 percent in 1968 and then held at 5.5 percent in 1969 and 5.2 percent in 1970 despite a downturn in the economy. Although a 5.2 percent inflation rate may seem moderate when viewed from the perspective of the mid-1980s, it was almost universally regarded as unsatisfactory in 1971 and presented a major political problem to the Administration and Congress. Consequently, President

³³ For a more complete summary of this period, see Axilrod [1]. See also Wallich [22].

³⁴ The inflation and money supply growth data referred to in this section are summarized in Table 5.

Table 5

INFLATION AND M1 GROWTH RATES

Year ¹	Inflation Rate ²	M1 Growth Rate ³
1950	4.7%	—%
1951	2.9	—
1952	2.8	—
1953	-0.4	—
1954	2.7	—
1955	3.4	—
1956	4.0	—
1957	2.8	—
1958	2.0	—
1959	2.3	—
1960	1.3	0.5
1961	1.3	2.9
1962	2.5	1.8
1963	1.2	4.0
1964	1.5	4.4
1965	3.0	4.4
1966	4.1	2.8
1967	2.5	6.4
1968	5.8	7.3
1969	5.5	3.9
1970	5.2	5.0
1971	6.1	6.7
1972	4.4	8.4
1973	8.2	5.8
1974	10.0	4.8
1975	8.3	5.0
1976	5.7	6.2
1977	6.8	8.1
1978	8.0	8.2
1979	8.9	7.5
1980	9.9	7.3
1981	8.7	5.1
1982	5.2	8.7
1983	3.6	10.4
1984	3.6	5.4
1985	3.3	11.9

¹ Fourth quarter of each year.

² Inflation measured by the increase in the Gross National Product Implicit Price Deflator.

³ Comparable data for 1950-1959 are not available. The definition of M1 has been revised, and published historical data begins in January 1959.

Source: U.S. Department of Commerce, Bureau of Economic Analysis and the Board of Governors of the Federal Reserve System.

Nixon announced a comprehensive wage and price control program on August 15, 1971, that endured in various forms until early 1974. This program may have temporarily restrained price increases in its early phases, since the inflation rate declined from 6.1 percent in 1971 to 4.4 percent in 1972. Any such effect, however, was short-lived, as the rate climbed back to 8.2 percent in 1973 and rose further to 10.0 percent in 1974. At a superficial level, this sharp acceleration of inflation in the mid-1970s reflected the progressive dismantling of the price control program. More fundamentally, it almost certainly reflected (1) a significant acceleration in the growth of M1 in 1971 and 1972 and, (2) after 1973, the impact of the OPEC petroleum embargo and the first oil price shock.

Probably as a result in part of the restrictive actions taken by the Fed in 1973 and 1974 to contain the inflation, the economy passed through a prolonged and severe recession between the fourth quarter of 1973 and the first quarter of 1975. After growing at an average annual rate of 5.0 percent in 1972 and 5.2 percent in 1973, real (i.e., inflation-adjusted) GNP declined at a 0.5 percent rate in 1974 and at a 1.3 percent rate in 1975. The weakness in the economy reduced the upward pressure on prices temporarily, but to a much smaller degree than in the years immediately following other postwar downturns. From its 10.0 percent peak in 1974, the rate declined to 8.3 percent in 1975 and 5.7 percent in 1976. It then turned back up and rose persistently to 6.8 percent in 1977, 8.0 percent in 1978, and 8.9 percent in 1979 before peaking at 9.9 percent in 1980.

Economists and others have given considerable attention to the reasons for this sharp and sustained rise in inflation in the late 1970s and early 1980s. Part of the increase probably reflected the lingering impact of the first oil price shock and subsequent dislocations in other commodity markets. Further, the second oil price shock in 1979 following the revolution in Iran was very likely a factor in the rise in the price level in that year and in 1980. Beyond their direct effects, these highly visible increases in the prices of key commodities, in conjunction with the observed persistent increase in the general price level, created an atmosphere in which the public began to expect a sustained rise in inflation, and as time passed these inflationary expectations, in turn, helped fuel further increases in wages and prices.

In addition to these pressures from particular commodity markets, however, many if not most economists now believe that fiscal and monetary policy played an important role in the inflationary process.

After rising to a then record level of \$70.5 billion in fiscal year 1976 as a result of the 1974–75 recession, the federal budget deficit declined only moderately to the \$50–\$55 billion range in fiscal years 1977 and 1978. Some economists believe these high deficits contributed to the acceleration of inflation. Others focus more attention on monetary developments. The growth rate of M1 rose sharply in the late 1970s and exceeded 8 percent in both 1977 and 1978. Moreover, the growth of M1 frequently exceeded the tops of its long-range targets during this period,³⁵ which very probably reduced the credibility in the eyes of the public of the Fed's announced strategy of controlling the growth of the money supply in order to reduce inflation. Any loss of credibility that occurred would have tended to heighten inflationary expectations and thereby fuel the rise in inflation.

October 6, 1979 to late 1982: The turn to disinflation Whatever its causes, by the second half of 1979 the acceleration of inflation and the accompanying intensification of inflationary expectations had created a precarious and potentially unstable condition in the U.S. economy. In particular, there was a clear risk that the public's fear of still further increases in inflation would lead to speculative excesses in commodity markets and other markets. Indeed, there was evidence of speculative pressures in the markets for precious metals in the late summer of 1979. More disturbingly, the U.S. dollar, which had declined dramatically in the foreign exchange markets in late 1978, came under renewed downward pressure in September 1979, which suggested that the reduction in the credibility of the Fed's anti-inflationary stance had become international in scope.

In these circumstances the Federal Open Market Committee decided at an extraordinary Saturday meeting on October 6, 1979, to make a more determined effort to control the growth of the monetary aggregates in order to enhance the credibility of its effort to restore price stability. Specifically, as noted earlier, the Committee shifted its operational focus from the Federal funds rate to nonborrowed reserves as the principal operating variable for controlling the aggregates. As Chairman Volcker put it in Congressional testimony:

³⁵ Between 1975, when the longer-run target ranges were first used, and the end of 1978, a four-quarter-ahead target was set in each quarter of the year. In 1978, the current practice of setting only one target for any given calendar year was instituted in accordance with the terms of the Humphrey-Hawkins Act.

Consequently, we are now placing more emphasis on controlling the provision of reserves to the banking system—which ultimately governs the supply of deposits and money—to keep monetary growth within our established targets. In changing that emphasis, we necessarily must be less concerned with day-to-day or week-to-week fluctuations in interest rates because those interest rates will respond to shifts in demand for money and reserves. . . . What is involved is a tactical change in the approach to control of the money stock.³⁶

Much has been written and said about the FOMC's October 6, 1979, action, especially in the light of subsequent events. As noted in the general discussion of the Fed's operating procedures in Section 3A, the nonborrowed reserve targeting procedure adopted in October 1979 was not equivalent to targeting total reserves as advocated by some monetarist economists. It was, however, a significant change. In particular, by ceasing its attempt to control the highly visible (and politically sensitive) Federal funds rate tightly in the very short run, it was believed that the Committee would be able to move more boldly and promptly in the future to take the operational actions necessary to hold the monetary aggregates under control.

An interesting and important issue here is the extent to which the October 6 change in procedure, per se, contributed to the longer-run decline in inflation in 1982. It is quite possible that the shift in operational focus and the publicity it received helped, in the months immediately following the action, to relax some of the more extreme inflationary pressures that had been building in some markets. The growth rate of M1, which had reached 10.0 percent in the second quarter of 1979 and 10.4 percent in the third quarter declined to 4.3 percent in the fourth quarter and 5.7 percent in the first quarter of 1980. Further, in keeping with Chairman Volcker's reference to interest rates in the quotation above, the Federal funds rate was allowed to fluctuate considerably more widely in the days and weeks immediately following the action than before the action. These developments may well have persuaded financial market participants and others that the action constituted an important and substantive change in the Fed's behavior, and this perception, in turn, may have reduced inflationary expectations to some degree.

³⁶ The quotation is from Chairman Volcker's statement to the Subcommittees on Domestic Monetary Policy and on International Trade, Investment and Monetary Policy of the House Committee on Banking, Finance and Urban Affairs, November 13, 1979. See *Federal Reserve Bulletin*, December 1979, pp. 958–62, for the full statement.

It is less clear, however, that the change in operating procedure in October 1979 as such was the dominant factor leading to the broad and sustained reduction in inflation after 1981. Because of a variety of technical complexities, comparing the actual growth of the monetary aggregates with their target ranges after the fact is not as straightforward as one might expect. Table 6 shows the results of one attempt to do so.³⁷ These data indicate that the "effective"³⁸ growth of M1 exceeded the top of its target range in 1980, the first full year following the October 1979 change. In 1981, the effective growth rate fell below the bottom of the target range for that year. Finally, in 1982, the growth rate exceeded the top of the range by a substantial amount.³⁹ To be sure, several unanticipated events occurred during this period that may account for part of these deviations of actual growth from the targets. For example, the sharp acceleration of M1 in the second half of 1980 may have been due in part to the end of the special credit control program in effect in the spring of that year. Nevertheless, the persistent deviations of actual M1 growth from its target ranges during the period of nonborrowed reserve targeting indicated in Table 6 suggest that the move to nonborrowed reserve targeting in October 1979 did not in itself improve monetary control significantly. For this reason, although the change may have enhanced the credibility of the Fed's anti-inflationary program to some extent—or at least prevented a further significant erosion of credibility—it does not appear that the change played a decisive role in bringing about the later sustained reduction in inflation and inflationary expectations.⁴⁰

If the October 1979 change in operating procedures was not a dominant factor in the later decline in inflation, what factors were important? The data in Table 6 suggest a plausible hypothesis: specifically, that the sharp decline in effective M1 growth in 1981, as distinct from the change in operating procedures in 1979, was the dominant

³⁷ Table 6 reproduces Table II in an article by Broaddus and Goodfriend [8]. The text of this article discusses the construction of the data in the table in detail. In particular, the data are adjusted for certain shifts between different types of deposits during the period covered that occurred as a result of interest rate deregulation and the introduction of new types of deposit accounts such as NOW (negotiable order of withdrawal) accounts. It should be emphasized that the data are the responsibility of the authors of this article. They are not official Federal Reserve statistics.

³⁸ See [8], pp. 5–8, for a detailed elaboration of the meaning of the term "effective" in this context.

³⁹ It should be noted that the nonborrowed reserve procedure was essentially dropped well before the end of 1982.

⁴⁰ For a somewhat different view see Axilrod [1], p. 18.

Table 6

**EXPRESSED OR IMPLIED ANNUAL TARGET RANGES
FOR EFFECTIVE M1 AND CORRESPONDING
ACTUAL EFFECTIVE M1 GROWTH, 1975-1984**

Target Period	Target Range	Midpoint of Target Range	Actual
4Q75-4Q76	4.5-7.5	6.0	5.8
4Q76-4Q77	4.5-6.5	5.5	7.9
4Q77-4Q78	4.0-6.5	5.25	7.2
4Q78-4Q79	4.5-7.5	6.0	6.8
4Q79-4Q80	4.0-6.5	5.25	6.9
4Q80-4Q81	3.5-6.0	4.75	2.4
4Q81-4Q82	2.5-5.5	4.0	9.0
4Q82-4Q83	4.0-8.0	6.0	10.3
2Q83-4Q83	5.0-9.0	7.0	7.4
4Q83-4Q84	4.0-8.0	6.0	5.2

Notes:

1. The ranges in this table are the same as, or were derived from, the target ranges that were announced by the Federal Reserve at the beginning of the year to which the target applied. For 1979 and subsequent target years announcements have been contained in the Federal Reserve's annual Monetary Policy Report to Congress, which is usually published in the March issue of the Federal Reserve Bulletin. For 1976, 1977, and 1978, the announcements are contained in Burns (1976), Burns (1977), and Miller (1978), respectively.

2. The target ranges for 1979 and 1981 are adjusted for anticipated shifts into or out of NOW accounts or similar accounts as explained in the text. The ranges for the periods 4Q79-4Q80 and 4Q80-4Q81 are the ranges that were set for what was then referred to as M-1B.

Source: Alfred Broaddus and Marvin Goodfriend, "Base Drift and the Longer Run Growth of M1: Experience from a Decade of Monetary Targeting," *Economic Review*, Federal Reserve Bank of Richmond (November/December 1984), p. 7.

event. As the table shows, after rising for four consecutive years at rates near or in excess of 7 percent, the actual effective growth rate of M1 dropped sharply to 2.4 percent in 1981. This decline followed a period in late 1980 and early 1981 when market interest rates had risen sharply, as indexed by increases in the daily average Federal funds rate to close to 20 percent and yields on longer-term Treasury securities just under 13 percent. Probably as a result of these monetary and financial developments, the economy sank into a deep recession in the third quarter of 1981 that lasted through the fourth quarter of 1982, during which the unemployment rate rose to a postwar record high of 10.7 percent. Few observers would argue that the Fed deliberately engineered the recession to reduce inflation. The Fed's willingness to allow this painful disinflation process, however, rather than easing policy aggressively to end it, almost certainly raised the public's awareness not only of the Fed's concern with the long-term risks posed by high and rising inflation and inflationary expectations but also its determination to bring both under control. If this hypothesis is valid, it is consistent with the generally accepted view that the credibility of the Fed's stance against inflation increased in the early 1980s. An increase in credibility based on a perceived willingness to tolerate the temporarily painful disinflation process and allow it to gain momentum, however, is not necessarily equivalent to credibility based on the perception of improved monetary control due to the change in operating procedures.

Late 1982–1986: Problems with monetary targeting As already indicated, the period of nonborrowed reserve targeting ended in late 1982. The nonborrowed reserve procedure was dropped at the same time that M1 was de-emphasized in relation to the other monetary aggregates as an intermediate target of monetary policy. The discussion of the Fed's monetary targeting strategy in Section 3A pointed out that the strategy is based on the assumption of a steady and predictable relationship in practice between the monetary aggregates and broader measures of aggregate economic activity. M1 was de-emphasized as a monetary target in the fall of 1982 because there was a growing concern at the time that the predictability of the relation between M1 and the economy was breaking down, at least temporarily. More precisely, there was a growing concern that the public's demand for the assets included in M1, given the aggregate level of national income, was becoming unpredictable.

There were several reasons for this concern.⁴¹ First, a substantial volume of the temporarily authorized "all-savers" certificates were scheduled to mature in October 1982. Since most certificate holders could not reinvest in the certificates, a sizable share of the proceeds was expected to be placed in transactions accounts included in M1 for some uncertain time period until more permanent substitute investments could be found. These temporary flows of funds were expected to produce a temporary acceleration of M1 growth of some unknown magnitude that it would be inappropriate to resist with monetary policy, because the increase would not be due to basic economic trends. Further, the scheduled authorization of money market deposit accounts at depository institutions later in the year was expected to further disrupt the relationship between M1 and the economy. Beyond these relatively short-run dislocations, however, there was a belief that the public's longer-run demand for M1 balances, given the level of income, might be changing in ways that were not yet clear. In particular, the newly authorized interest-bearing transactions accounts such as NOW accounts, which by late 1982 were included in the M1 aggregate, were growing very rapidly. There was reason to believe that the public's demand for balances in this type of account differed from the demand for ordinary non-interest-bearing demand deposits. Moreover, to the extent that the public used these interest-bearing accounts as a vehicle for savings as well as transactions, the long-term relationship between an M1 that included a large proportion of these accounts and the economy might differ significantly from historical relationships. These concerns were reinforced at an empirical level by the behavior of the velocity of M1 in the early 1980s.⁴² After rising fairly smoothly at an average annual rate of 3.1 percent through most of the postwar period, M1 velocity slowed noticeably in 1980 and declined in 1982.

In these circumstances, the FOMC decided formally to de-emphasize M1 at its meeting in October 1982. At the same time, it

⁴¹ For a fuller statement of these reasons, see Axilrod [1], pp. 18–19.

⁴² The velocity of M1 is the ratio of the level of GNP in current dollars to the dollar level of M1 and can be thought of roughly as the number of times an average dollar is spent in a year. Rapid growth in velocity implies that GNP is growing rapidly in relation to the growth of the money stock, which in turn implies that the public's demand for money is low in relation to the growth of income. Conversely, slow growth in velocity implies that money is growing rapidly in relation to GNP and hence that the demand for money is high in relation to income.

replaced the nonborrowed reserve operating procedure with the borrowed reserve operating procedure discussed in Section 3A. As indicated there, the borrowed reserve target is similar in important respects to the pre-October 1979 operating procedure when the monetary aggregates were controlled via direct control of the Federal funds rate. Under the borrowed reserve procedure, the funds rate is influenced indirectly through the level of borrowing rather than directly.

From the vantage point of late 1986, it appears that the decision to de-emphasize M1 as a monetary target was appropriate. M1 grew 11.9 percent between the second quarter of 1982 and the second quarter of 1983. In the past, such sharp accelerations in money growth have often been followed by rising inflation and strengthened inflationary expectations. The 1982–83 acceleration, however, was not followed by a significant rise in inflation either immediately or with a lag, and the sustained decline in nominal interest rates in the period suggests diminished rather than strengthened inflationary expectations.

During the second half of 1983 and in 1984, M1 velocity stopped declining and appeared to be resuming its upward trend. As a result, it seemed possible that it might be feasible to return to a firmer monetary targeting strategy. Although the nonborrowed reserve operating procedure was not reinstated, the FOMC did formally restore M1 to a position of equal weight with the other monetary aggregates at its meeting in July 1984.

In 1985 and 1986, however, M1 velocity dropped sharply again. The decline appeared to be related in part to the substantial decline in nominal interest rates during the period, in an environment in which restrictions on the interest depository institutions could pay on most types of deposit accounts were being progressively dismantled.⁴³ In this situation, the opportunity costs of holding the interest-bearing transactions accounts included in M1 became progressively lower until, by the second half of 1986, they had virtually disappeared. This steady reduction in opportunity costs, in turn, probably contributed to a significant increase in the demand for M1 and hence to very rapid growth in M1 in both 1985 and 1986.

As a result of these developments, by late 1986 the Fed's monetary targeting strategy had been significantly diluted. The measured growth rate of M1 was nearly 15 percent from the fourth quarter of 1985 to the

⁴³ All interest restrictions on all types of accounts except demand deposits were phased out by March 31, 1986.

fourth quarter of 1986, 7 percentage points above the upper limit of the 4 to 8 percent target range set for the period. In view of the decline in velocity, however, the FOMC did not attempt to bring the growth rate down to the target range—or, for that matter, to reduce the growth rate significantly at all. In effect, the Committee simply monitored the growth of M1 in the context of the behavior of velocity.⁴⁴ Some weight was given to the behavior of the broader M2 and M3 aggregates in this period, but it is probably fair to say that in practice at least equal weight was given to the current state of the general economy and the near-term outlook for the economy. In short, in late 1986 the strategy of monetary policy was essentially to react in a discretionary manner to the signals provided not only by the monetary aggregates but a number of other economic and financial variables as well.

There are legitimate grounds for debate regarding whether the Fed's present discretionary approach to the conduct of monetary policy is justified by the technical difficulties described above. It is certainly true that a reasonable case can be made that such an approach is in fact justified, especially when institutional and political considerations as well as purely economic factors are taken into account. Many economists would argue, however, that the Fed would risk losing the credibility as an inflation fighter it earned in the late 1970s and early 1980s if it attempted to pursue a highly discretionary and judgmental policy indefinitely, since the credibility of policy in a discretionary regime is entirely dependent on the public's confidence in the determination of the Fed's current leadership at a particular time. The existence of objective longer-term criteria for policy helps the Fed maintain credibility. For this reason, some observers hoped that the System would be able to return to a firmer monetary targeting strategy once the disruptive impact of recent deregulatory actions on the relationship between the monetary aggregates and the economy has diminished.

One final point is worth making here. Although the elimination of many interest rate regulations in the early 1980s almost certainly contributed to the unpredictable behavior of the velocity of the monetary aggregates in this period, the reduction in inflation that followed the sharp tightening of monetary policy in 1981 also probably played an important role. This disinflation was unusually pronounced by peacetime standards, and its speed and extent were probably largely

⁴⁴ The real growth of the economy in 1986 was relatively sluggish throughout most of the year.

unanticipated. In these circumstances, it should perhaps not be surprising that the public's demand for money balances and therefore monetary velocity behaved unpredictably. If the price level remains relatively stable, however, the disruption of the behavior of velocity from this source should diminish, which would tend to favor a firmer monetary targeting strategy.

CONCLUSION

This article has reviewed the Fed's principal functions and responsibilities, described its structure, and discussed both the mechanics of conducting monetary policy and major current policy issues. Since considerable ground has been covered, it may be useful to summarize briefly some of the article's major points.

1. The Fed has a wide variety of responsibilities in the areas of monetary policy, the maintenance of liquidity and stability in financial markets, the regulation of depository institutions, the provision of services to the Treasury and depository institutions, the maintenance of an efficient national payments mechanism, and the promotion of community development and redevelopment. While these responsibilities may appear diverse at first glance, they are all essential aspects of the Fed's general mandate to maintain a stable and efficient national monetary system.

2. With regard to monetary policy specifically, the Federal Reserve Act as amended requires the Fed to conduct policy with a view to achieving certain objectives involving a number of macroeconomic variables including production, employment, the price level, interest rates, and international trade. It is not clear, however, that it is feasible for the Fed to pursue all of these objectives simultaneously. In particular, some economists believe that the only feasible objective for the Fed over the long run is price stability.

3. An important and somewhat unique feature of the organizational structure of the Fed is the participation of the regional Federal Reserve Banks in the conduct of monetary policy. Although the Board of Governors is the dominant governing body in the System, both the boards of directors and the senior officers of the Reserve Banks have a voice in the formulation of policy, and in practice their views can have a substantive effect on policy decisions.

4. The current longer-run strategy of Fed monetary policy is to control the growth of certain monetary aggregates over time in order to foster stability in the price level and stable longer-run economic growth. The strategy is implemented by establishing annual target ranges for the growth of the various aggregates.

5. The Fed has used three short-run operating procedures for controlling the growth of the monetary aggregates since the longer-run targeting strategy was formally instituted in 1975. From 1975 to 1979, the Fed sought to influence the aggregates by tightly controlling the Federal funds rate. Between late 1979 and late 1982, the System used nonborrowed reserves as its operating instrument. Although this procedure was not equivalent to controlling the monetary aggregates by controlling total reserves as advocated by some monetarist economists, it was potentially a strong monetary control procedure because if followed closely it produced a relatively automatic response of reserve and money market conditions to deviations of the monetary aggregates from their target ranges. Since late 1982 the System has used borrowed reserves as its operating instrument, which is similar in important respects to the pre-October 1979 Federal funds rate regime.

6. At a mechanical level, the Fed uses three tools in conducting monetary policy on a day-to-day basis: open market operations, the power to change the discount rate, and reserve requirements. Of these, open market operations and the discount rate are the two actively used tools. The role of the discount rate has been more important in the post-1979 nonborrowed and borrowed reserve operating regimes than in the earlier Federal funds rate regime.

7. A major event in the recent history of monetary policy was the actions the Fed took in the 1979–82 period, which have been followed by a sustained reduction in both inflation and inflationary expectations. Although the FOMC's change to a nonborrowed reserve operating procedure on October 6, 1979, probably contributed to the reduced inflation and the accompanying rise in the credibility of the Fed's anti-inflationary program, this article took the position that the sharp reduction in the effective growth of M1 in 1981, as distinct from the change in operating procedure, and the recession in 1981 and 1982 were probably the dominant factors.

8. The role of monetary targeting in the conduct of monetary policy was diminished in practice in the mid-1980s because of the disruptive impact of interest rate deregulation on the predictability of the relationship between the monetary aggregates and economic activity. As of late 1986, the Fed was following a discretionary and judgmental approach to policy that probably gave as much weight to current general economic conditions as to the behavior of the monetary aggregates. Some observers are concerned that the credibility of the Fed's longer-run stance against inflation might be impaired if it followed this discretionary approach to policy for too long a time.

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