The Implementation of Monetary Policy in 1976

The Federal Open Market Committee (FOMC), in setting open market policy in 1976, sought to foster economic expansion following the 1974-75 recession and to achieve further moderation in the rate of inflation. The dampening of inflationary expectations that emerged contributed to a considerable decline in long-term interest rates and, over the course of the year, the credit markets financed another large Federal deficit more readily than had been generally anticipated.

The Committee's decisions were heavily influenced by its perception of the tempo of the economic recovery, which first speeded up and then slowed down. A surge in activity early in the year generated expectations of continued strong economic expansion that might necessitate actions to restrain growth of the monetary aggregates. When the aggregates grew strongly in the spring, the Committee began limiting the extent to which it accommodated the demand for member bank reserves. As the summer progressed, however, the rate of economic expansion moderated and growth of the labor force began to exceed growth of employment. The rate of monetary expansion also receded. Gradually, the FOMC shifted emphasis to promote a step-up in the growth of the aggregates through a more accommodative approach to the provision of reserves. By the year-end the pace of economic advance seemed to be quickening once more.

In formulating its broad policy approach, the Committee continued to focus on a one-year time horizon for growth of the monetary and credit aggregates. It also adopted short-run instructions that prescribed a Trading Desk response, through open market operations, to indications of undesired strength or weakness in the monetary aggregates. The Committee's instructions to the Account Management were in essentially the same format as in recent years. In implementing its instructions, the Trading Desk found market participants in 1976 acutely sensitive to movements in the monetary aggregates as well as to the conduct of open market operations. At the same time, recent changes in the Treasury's cash management policies increased the volatility of Treasury cash balances and thereby posed difficult operational challenges to the Desk.

This report focuses on the Trading Desk's implementation of the FOMC's directives during the year. After presenting an overview of the Committee's policy decisions in 1976, it describes the procedures used by the Desk to bring reserve supplies into line with the Committee's objectives. It discusses particularly interesting periods in detail in order to illustrate how the Desk carried out operations against the background of the sensitive financial environment that prevailed over much of the year.

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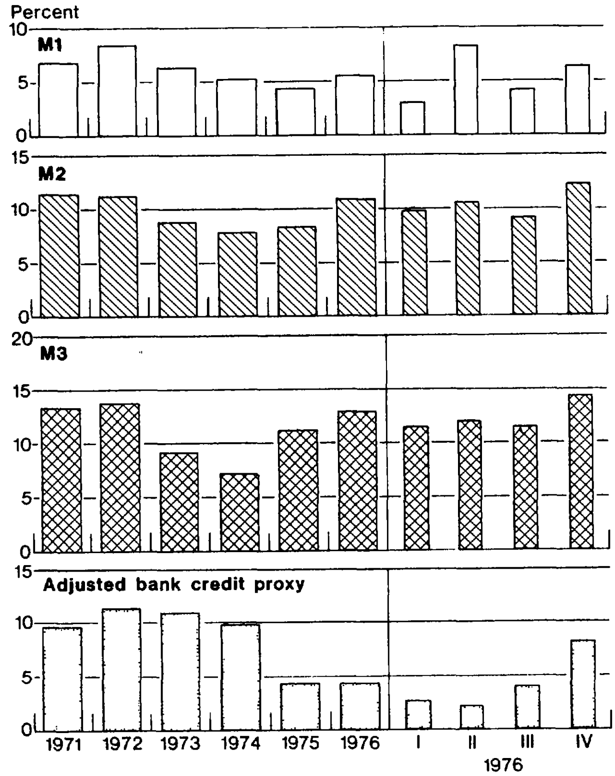
Establishing growth ranges

In seeking both sustainable economic expansion and a reduction of price inflation, the Committee on balance lowered its ranges for annual growth of the major monetary aggregates (see table). At its October 1975 meeting, the Committee had set a range of 5 to 7½ percent for growth of M_1—demand deposits plus currency in the hands of the public—over the four-quarter period ended in the third quarter of 1976. In January 1976, it reduced the lower limit of this longer run range by ½ percentage point. Later it narrowed the range through two ½ percentage point reductions in the upper end. Thus, the range adopted for M_1 in November 1976 for the annual period ending in the third quarter of 1977 was 4½ to 6½ percent.[1] The annual range for M_2—M_1 plus time and savings deposits at commercial banks other than large negotiable certificates of deposit (CDs)—had been set at 7½ to 10½ percent at the October 1975 FOMC meeting and the range was reduced, on balance, through subsequent modifications, to 7½ to 10 percent for the annual period ending in the third quarter of 1977. At the October 1975 meeting the Committee had adopted a range of 9 to 12 percent for M_3—M_2 plus deposits at thrift institutions. A range of 9 to 11½ percent was established about a year later in November 1976.[2]

The Committee, in assessing the growth of the monetary aggregates early in the year, expected the demand for money to pick up in view of projected gains in economic activity. There had been an unusually rapid increase in the income velocity of M_1 in the second half of 1975. However, there was uncertainty whether innovations in the management of cash would continue to depress the rate at which demand balances would grow, given the expected gains in income and prevailing interest rate levels. After a slow start, M_1 growth strengthened markedly during the spring and reached an average annual rate of 7 percent, seasonally adjusted, over the first five months of the year. Its expansion moderated thereafter, and only in October did it again display significant strength.

Chart 1
Growth of Money Stock and Adjusted Bank Credit Proxy
Seasonally adjusted annual rates



Measured from the fourth quarter of 1975 to the fourth quarter of 1976, M_1 increased 5½ percent. Commercial bank time and savings deposits other than large CDs grew rapidly during the year, as the interest rates on passbook accounts proved attractive in comparison with market rates. Consequently, M_2 grew by 11 percent (see Chart 1).

Implementation of the FOMC's policy objectives

Efforts of the Open Market Committee to achieve its longer run objectives required continuing judgments on the extent to which open market operations should supply nonborrowed reserves in relation to the de-

[1] One factor influencing the Committee's decision to reduce the growth range in November was increasing efficiency in the use of cash balances The growth of transactions balances held in the form of M_1 was curtailed by the growing use of overdraft facilities, NOW accounts, savings accounts that permit telephonic transfers to checking accounts or settlement of monthly bills, and savings accounts by businesses and state and local governments One study by John Paulus and Stephen H Axilrod (Board of Governors of the Federal Reserve System, "Recent Regulatory Changes and Financial Innovations Affecting the Growth of the Monetary Aggregates") indicated that, without these developments, the growth of M_1 in the year ended in the third quarter of 1976 might have been roughly 1½ to 2 percentage points higher than actually occurred

[2] The upper ends of the ranges for M_2 and M_3 were reduced around midyear, but they were raised slightly in November because time and savings deposit inflows appeared likely to remain heavy, given that market interest rates had declined relative to those paid by banks and thrift institutions

mand for them. After a brief move toward augmenting reserve availability and lowering the Federal funds rate during the first two weeks in January, the Committee was content to see Federal funds continue to trade around 4¾ percent through the winter. Policy directives issued following the January and February meetings instructed the Account Management to maintain prevailing money market conditions unless the growth rates of the monetary aggregates appeared to be deviating significantly from the midpoints of their specified short-run ranges. Indications of strong growth of the aggregates at the end of February led to a very slight shift toward a less accommodative stance, but this was reversed soon afterward on the basis of further information.

The Committee continued to hold to a steady course until mid-April. Then, rapid growth of the aggregates, especially in M_1, and evidence of a vigorous economic expansion prompted a shift toward a less accommodative stance that had been long expected in the financial markets. The System provided nonborrowed reserves less freely, and the Federal funds rate rose by ¾ percentage point over the next six-week period to 5½ percent by the end of May.

During the second half of the year, as evidence developed that overall economic growth had slowed, the thrust of open market operations was toward easier money market conditions. The initial approach of the Committee was relatively cautious. At the June meeting it set a narrower than usual range for movements in the Federal funds rate, and at the August meeting it stressed the maintenance of stability in money market conditions. As concern about the economic outlook increased, however, at its September meeting the Committee opted for a Federal funds rate range that provided more room for downward than for upward movement. Thereafter, the Committee acted to promote a more accommodative financial climate. The trading level for Federal funds declined in three stages from about 5½ percent at midyear to around 4⅝ percent at the year-end.

Behavior of financial markets

Expectations of market participants were greatly responsible for the sharp rise in interest rates that developed during the spring. Even though interest rates had declined substantially since the previous autumn, market participants generally anticipated a cyclical upturn in rates during the year. Their expectations were based on a presumption that expanded private credit demands would compete with heavy Federal borrowing in a period when the Federal Reserve was likely to be taking steps to restrain growth of the money stock.

When reserve conditions did tighten briefly in late February, market interest rates rose sharply and returned to previous levels only gradually, even after the tightening in reserves proved to be temporary. When the Federal funds rate rose 75 basis points between mid-April and late May, other short-term rates advanced by as much as 80 to 100 basis points; long-term yields rose roughly 40 basis points. In the market for Treasury securities these rate increases were larger than the declines that had developed earlier in the year (see Chart 2).

These expectations that interest rates would rise over the rest of the year proved wrong. Economic growth decelerated in the second half, while the Federal deficit turned out to be smaller than had been anticipated. Domestic corporations reduced their borrowings in the bond market in the second half as capital spending recovered slowly. This environment led investors—flush with cash and encouraged by the progress being made in dampening inflationary forces—to push yields significantly lower over the final seven months of the year. By December, rates on Treasury bills were as much as 125 basis points below the levels

Federal Open Market Committee's Annual Growth Ranges for Monetary Aggregates and Adjusted Bank Credit Proxy

Seasonally adjusted annual percentage rates

Period	Month established	M_1	M_2	M_3	Credit proxy
1975-III to 1976-III	October 1975	5 to 7½	7½ to 10½	9 to 12	6 to 9
1975-IV to 1976-IV	January 1976	4½ to 7½	7½ to 10½	9 to 12	6 to 9
1976-I to 1977-I	April 1976	4½ to 7	7½ to 10	9 to 12	6 to 9
1976-II to 1977-II	July 1976	4½ to 7	7½ to 9½	9 to 11	5 to 8
1976-III to 1977-III	November 1976	4½ to 6½	7½ to 10	9 to 11½	5 to 8

that had prevailed at the beginning of the year. Yields on long-term Treasury issues were down by about 75 basis points, while those on corporate and tax-exempt issues showed substantially larger declines. In some markets, long-term interest rates were at their lowest levels in about three years.

During 1976 the Treasury raised $58 billion of new cash, second only to the record amount raised in 1975. It also extended the average maturity of its debt for the first year since 1964. It continued to regularize its debt offerings and to reduce uncertainty about prospective financings by keeping the market informed about its borrowing plans. The Treasury filled the remaining maturities in its monthly two-year note cycle and established quarterly four- and five-year note cycles New Federal legislation aided the Treasury's debt extension program by extending the maximum maturity of Treasury notes from seven years to ten years and by increasing from $10 billion to $17 billion the amount of long-term bonds that could be issued without regard to the 4¼ percent interest rate ceiling.

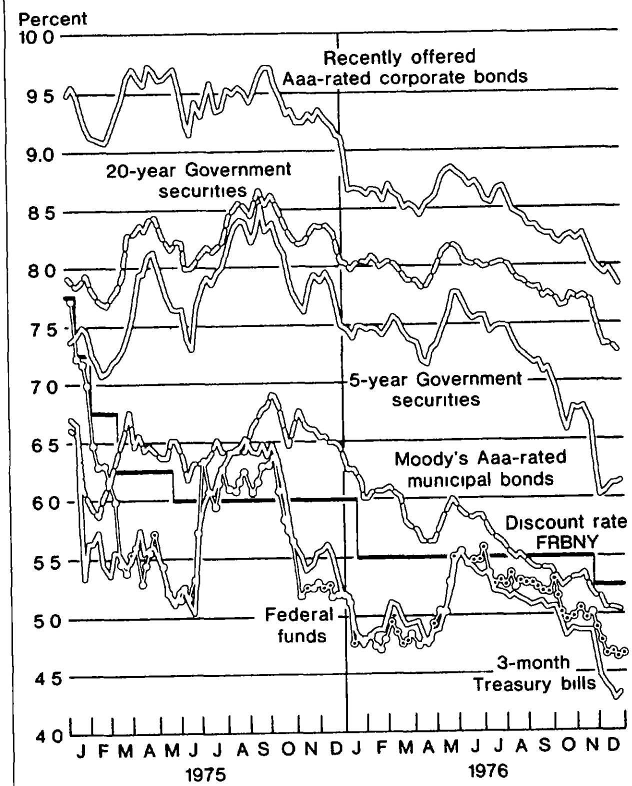
The Treasury took advantage of this added flexibility by offering an intermediate-term note and a long-term bond in each of its quarterly refundings as well as a short-term two- or three-year note. In the first three refundings the Treasury sold one seven-year and two ten-year notes, with fixed coupons and prices, through subscription. All other securities were sold on an auction basis The subscription sales drew heavy demand for the attractively priced notes, enabling the Treasury to increase the total size of the subscription issues to $18.5 billion, $7.5 billion more than the amounts initially offered.

The volume of secondary market trading in United States Government securities expanded considerably in 1976; flurries of speculative activity contributed to periods of unusual price volatility. The increase in trading activity stemmed partly from the large volume of Treasury financing. But there was also a surge in the trading activity of portfolio managers who sought to outperform the rate of return provided by more conservative investment strategies. Traders necessarily sought to anticipate the future course of rates by analyzing economic and monetary data as they appeared and by projecting the data yet to be published. In this environment, participants were often quick to react, or to overreact, to new data that they thought might presage shifts in monetary policy and credit conditions.

Most sectors of the economy added further to their liquidity, continuing the rebuilding process that had dominated credit markets in the previous year. Corporate borrowers flocked to the bond market during the first half, reducing their short-term debt and seeking to secure long-term funds before the expected rise

Chart 2

Selected Interest Rates



in interest rates. At the same time, favorable cash flows generated by the rebound in corporate profits allowed businesses to finance a substantial portion of their capital needs internally. As a result, the pickup in short-term business borrowing from banks and in the commercial paper market over the second half of the year fell short of participants' anticipations. Moreover, the entire rebound in the aggregate of business loans at banks reflected acquisitions of bankers' acceptances.

Commercial banks, disappointed by the slack demands of their business customers, turned to buying intermediate-term Treasury coupon securities in order to take advantage of the higher returns available toward the longer end of the upwardly sloping yield curve. Thrift institutions easily accommodated the rising demand for mortgages as their deposits continued to expand rapidly. In addition, they continued to rebuild their liquidity, although not by so much as in 1975.

Long-term tax-exempt issues posted larger yield declines over the year than taxable securities. Investors largely overcame the acute fears that had been triggered by New York City's financial problems in late 1975—although New York City itself did not regain access to the market for its own obligations. In addition, with an improved earnings position, fire and casualty insurance companies expanded their interest in tax-exempt securities, and commercial banks also showed some renewed interest in such issues as the year progressed.

Techniques of Policy Implementation

The FOMC's instructions to the Manager of the System Open Market Account regarding the management of bank reserves provide—to a considerable extent—for the accommodation of the public's demand for money in the short run, while at the same time prescribing a response when growth of money appears inconsistent with the Committee's long-term objectives. At each meeting the Committee specifies conditions to be achieved for bank reserve availability as measured by the Federal funds rate. It also specifies a procedure for changing the Federal funds rate within designated limits if current projections of growth in the monetary aggregates indicate significant weakness or strength relative to ranges specified by the Committee for the two-month period covering the month of the latest meeting and the following month (see Chart 3).

In 1976, the Committee instructed the Desk to assign approximately equal weight to M_1 and M_2 in evaluating the short-run behavior of the aggregates, rather than placing primary emphasis on M_1 as it had in the past. The Committee continued to include in its directive an instruction that the Manager take account of developments in the domestic and international financial markets.

Following each FOMC meeting, the Account Manager seeks to achieve the Committee's current objectives through operations in Treasury and Federal agency securities and bankers' acceptances. Decisions about the size and type of operations and their timing are based partly on projections of reserve availability. The Manager also looks to the behavior of the Federal funds rate for additional information on factors affecting the supply of, and demand for, bank reserves. But participants in the Federal funds market have become more reluctant to trade at rates which they perceive to be out of line with the System's objective. Thus, the role of the funds rate as a short-run objective for open market operations tends to reduce its usefulness as a guide to reserve availability. Furthermore, the Manager, in shaping open market operations, has to take into account the sensitivity of market expectations to the behavior of the funds rate.

In evaluating the prospective behavior of the Federal funds market, the Manager and his staff seek to appraise the demand for, and supply of, bank reserves over the statement week ending on Wednesday. Member banks must meet their reserve requirements on average each week, and in addition they hold some margin of excess reserves as the result of the rapid shift of balances within the banking system. Required reserves are determined by deposits on the banks' books two weeks earlier and are thus known by each bank and the Federal Reserve at the start of the statement week. The Manager estimates the excess reserves that banks are likely to hold, taking into account seasonal deposit flows, the size and distribution of reserve excesses (or deficiencies) carried over from the previous week, the presence of holidays or statement publishing dates, and interest rate movements. The Manager then has in hand an estimate of the total reserves likely to be demanded by the banking system in the current week.

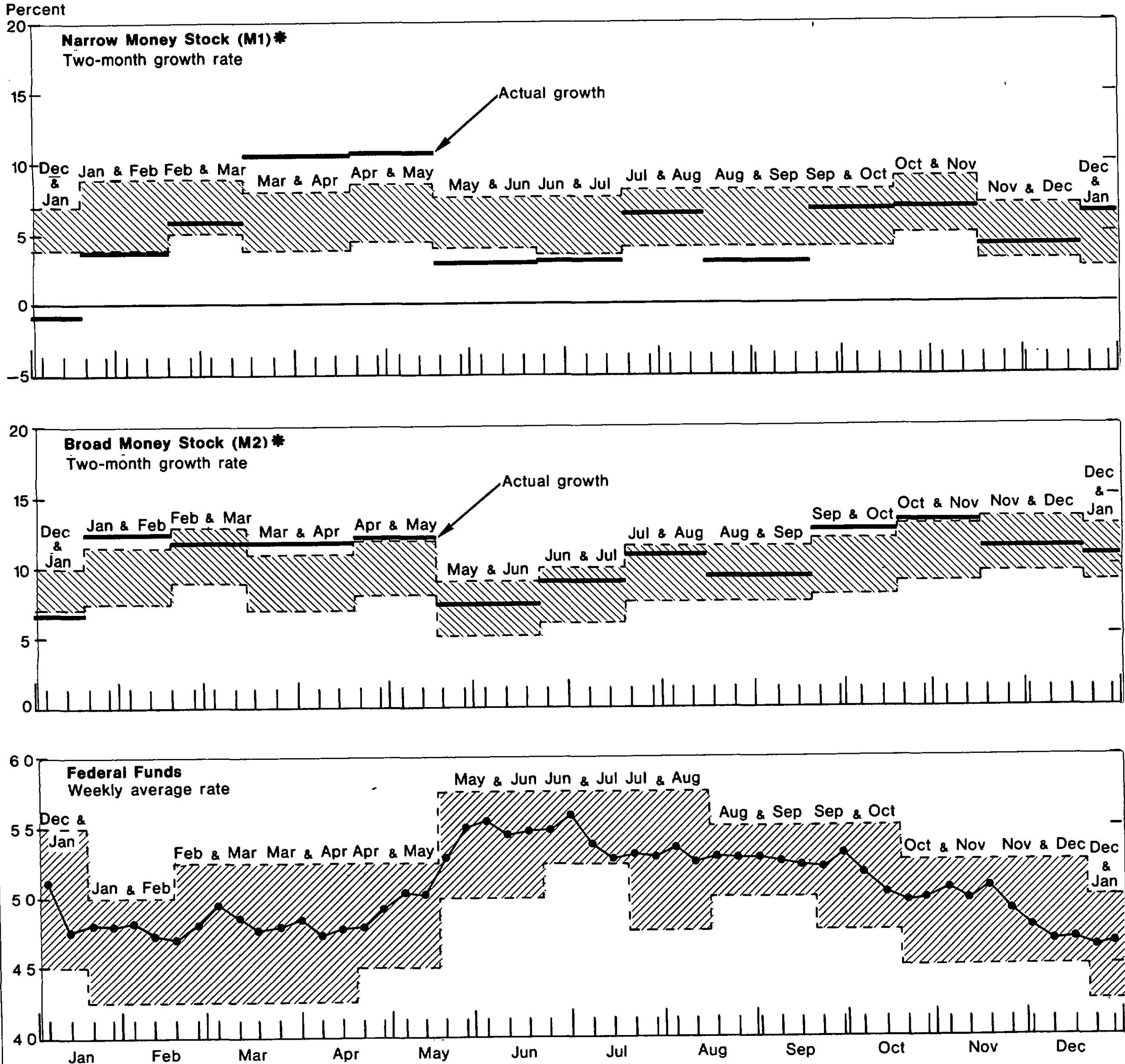
With these demand considerations in mind, the Manager reviews projections of the supply of nonborrowed reserves in the banking system for the week. These projections estimate the impact on reserves of "market factors", such as Federal Reserve float, currency in circulation, and the Treasury's balance at the Federal Reserve Banks The Manager will then have an estimate of nonborrowed reserve levels stretching out four to six weeks into the future, based on the assumption that the Trading Desk takes no action to affect reserves

The Manager is thus able to compare the projected level of nonborrowed reserves over the week ahead with estimates of total reserves demanded. He can then determine the appropriate volume of reserves to be added or subtracted on a daily average basis if open market operations are to maintain the existing rate on Federal funds. In doing this, account is taken of the expected addition to reserves likely to arise from borrowings at the discount window.

The Manager's approach to operations each week is shaped partly with an eye on the extent to which nonborrowed reserves in subsequent weeks are expected to fall short of, or exceed, projected reserve requirements If reserve deficits extend into future weeks, the Desk is more likely to use outright purchases of securities to meet a reserve need. If the need is temporary, greater reliance on repurchase agreements is likely. Conversely, when reserve surpluses are projected over several weeks, outright sales and redemptions of maturing securities may be appropriate.

Chart 3

FOMC Ranges for Short-run Monetary Growth and for the Federal Funds Rate, 1976



Shaded bands in the upper two charts are the FOMC's specified ranges for money supply growth over the two-month periods indicated, in the bottom chart they are the specified ranges for Federal funds rate variation. Actual growth rates in the upper two charts are based on data available at the time of the second FOMC meeting after the end of each period.

*Seasonally adjusted annual rates

If there is only a temporary need to absorb reserves, matched sale-purchase transactions are employed.[3]

The Manager also relies on the behavior of trading in Federal funds as a source of additional information on the supply and demand forces affecting the money market. The Desk may defer putting its program into effect until the trading level of Federal funds in the money market confirms the statistical estimates of reserve availability. Care is taken to avoid actions that might lead to misinterpretation of the System's intentions by market participants. Thus, when a need to supply reserves is anticipated, the Manager may wait for the funds rate to edge up at least to or above the operational objective before entering the market. When an overabundance of reserves is projected, the Manager may wait for the funds rate to edge down at least to or below the objective before entering the market to absorb reserves.

At times, the money market may not reflect the projected conditions of reserve abundance or scarcity. In this case the Manager may merely delay carrying out his plans to affect reserves. However, when reserves are estimated to be abundant (scarce) and the funds rate threatens to rise (fall) significantly above (below) the desired level, that situation calls into question the accuracy of the estimates of the supply of, and the demand for, reserves. The System's absence from the market in that event could be misleading, and the Manager is likely to enter the market to counteract undesirably firm (easy) conditions.

The value of the Federal funds rate as an indicator of the conditions of reserve availability probably has diminished in recent years. Large shifts in the Treasury's balances at the Reserve Banks have led to much greater day-to-day volatility in the level of nonborrowed reserves. Exposed to such volatility, money position managers at the banks are less likely to react to the immediate ebb and flow of funds because they expect the Federal Reserve to compensate for these massive surges. They appear to be willing to accumulate larger reserve deficits or surpluses before taking offsetting actions in the Federal funds market. Thus, the actual Federal funds rate tends to remain close to the market's perception of the System's objective for the rate until rather late in a statement week.

The primary source of the large shifts in the Treasury's balance has been the Treasury's cash management policy of holding the bulk of its balances at the Federal Reserve Banks rather than in its tax and loan accounts at commercial banks. The Treasury's balance at the Federal Reserve tends to fall early in the month as social security and other regular payments are made and then to rise later in the month when taxes and other revenues are received. The average weekly change in the Treasury's balance at the Reserve Banks amounted to $2 billion in 1976, a 45 percent increase from 1975 and a fourfold increase from 1974. In fourteen weeks in 1976 the change exceeded $3 billion. As a result, the Trading Desk undertook substantially enlarged operations just to counteract short-run swings in bank reserves (see Chart 4).

Faced with shifts in reserves of this magnitude, the Manager often needs to enter the market very early in the week to take offsetting action But the reserve estimates available at the start of a week are often in error—by about $490 million on average in 1976, a 55 percent increase from the year before. Since Federal funds tend to trade close to the market's perception of the Desk's objective, it is difficult to get confirmation from the money market of the magnitude of the reserve need or surplus before the calendar weekend. To deal with this situation the Manager may seek to compensate for a major part of the reserve swings by announcing, on Wednesday, intentions to supply or to absorb reserves on the first day of the forthcoming statement period.[4] Even so, the scale of operations needed after the weekend often remained quite large

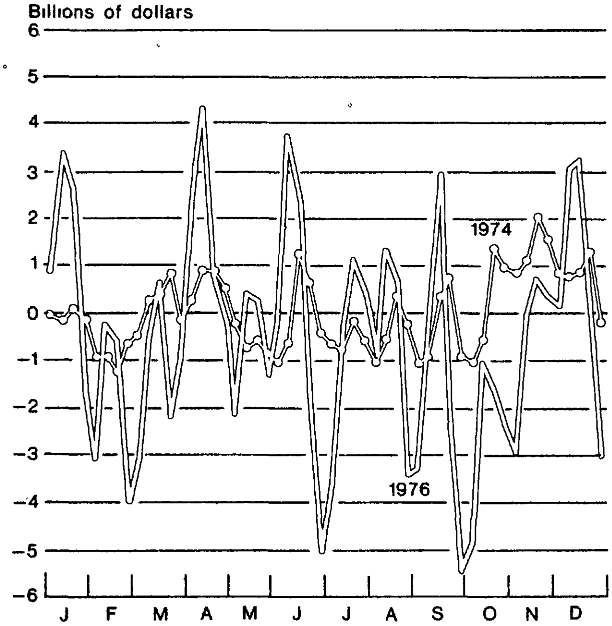
The Account Management often has the option of engaging directly in transactions with foreign accounts to carry out System reserve objectives rather than acting as agent to execute these foreign orders with dealers in the market. For example, when the Desk receives foreign orders to buy securities, it may elect

[3] The System temporarily adds reserves through repurchase agreements and withdraws reserves through matched sale-purchase transactions In making repurchase agreements, the Desk enters into a contract under which dealers sell United States Government securities, Federal agency issues, and bankers' acceptances to the System and agree to buy them back at a specified time, usually one day to a week later, at the same price plus a competitively determined rate of return The Desk generally permits dealers to offer customer securities as well as the dealers' own holdings Repurchase agreements either may allow dealers to buy securities back at a date earlier than specified initially or may not allow such early withdrawals—an alternative form introduced in 1976 The Manager's decision on the amount of securities to be purchased is partly based on the statistical estimates of reserve supplies The volume and aggressiveness of the dealers' offerings provide additional information on the size of the reserve need Under matched sale-purchase transactions the System sells Treasury bills to the market, and at the same time contracts to buy them back on a certain day, usually up to a week later The rate at which bills are sold and repurchased is set through competitive bidding by the dealers Matched sale-purchase transactions cannot be terminated before maturity

[4] Reserve operations affecting an entire week have been employed with increasing frequency The Manager arranged six- or seven-day operations either to add or to absorb reserves during twenty-eight weeks in 1976 Furthermore, nine of the week-long repurchase operations were announced to the dealers on Wednesday afternoon and executed on Thursday morning to allow the dealers additional time to round up securities from customers Preannouncing also diminished any significance that might be attached to the funds rate prevailing when the transactions were completed the next day

Chart 4

Effect on Bank Reserves of Changes in Treasury Balance at the Federal Reserve 1976 and 1974



Cumulative change in weekly average from final week of previous year

to meet such orders by selling directly from the System's own portfolio at prevailing market prices. Similarly, when the foreign order is to sell securities, the Desk may buy for the System Account. When the Desk arranges foreign transactions with the System Account in this way, the transactions have the same effect on bank reserves as System operations through dealers in the market.

Foreign acounts often also have funds available for overnight investment. When this is the case, the Desk may arrange matched sale-purchase transactions with the System Account to drain reserves overnight rather than act as agent and place these funds in the market as repurchase agreements with dealers. When a reserve abundance is projected, System matched sale-purchase transactions made directly with foreign accounts can help to reduce the excess. Moreover, when the reserve levels are expected to be approximately satisfactory, or in somewhat short supply, and the Federal funds rate is below the desired level, transactions directly with foreign accounts can sometimes be used to encourage a firming of conditions in the money market.

Open Market Operations in 1976

January to mid-April

The FOMC's view at the beginning of the year was that the economy was expanding in an orderly manner, as industrial production, retail sales, and employment all displayed good-sized gains. Although growth in the money supply was expected to rebound from the slow rate that had developed during the second half of 1975, there were significant uncertainties in the forecast. It was difficult to assess the impact on growth of M_1 likely to result from continued technological change in business and household management of cash balances and from the further growth of savings accounts recently authorized for businesses. Moreover, seasonal adjustment of the money supply was problematical, with alternative adjustment techniques producing different results.

Against this background, the Committee preferred not to allow modest deviations in the projected growth of the aggregates relative to the Committee's short-run ranges to prompt changes in the Desk's Federal funds rate objective. The directives issued after the January and February meetings instructed the Manager to maintain prevailing money market conditions unless growth of the aggregates deviated significantly from the midpoints of their specified ranges.[5] Such a "money market" directive places primary emphasis on maintaining prescribed money market conditions .

At the January 1976 meeting, the Committee specified ranges for the aggregates that were somewhat wider than usual. This specification reduced the likelihood that the Federal funds rate would change. The behavior of the money stock measures was divergent in the weeks that followed, but taken together the estimates for the two months ended in February did not warrant a change in reserve conditions M_1 remained near the bottom of its range, while M_2 was at or above the top of its range.

A money market directive was also adopted in February. But the aggregates showed strength shortly thereafter, with estimates of both M_1 and M_2 moving well up in their ranges. Accordingly, the Trading Desk sought to hold back slightly on supplying nonborrowed reserves relative to the emerging demand by banks. On Friday, February 27, it began seeking conditions consistent with Federal funds edging up from 4¾ percent to a 4¾ to 4⅞ percent range. That afternoon, when Federal funds were trading at 4¹³⁄₁₆ percent, the Desk entered the market as agent to arrange repurchase agreements for customer accounts This

[5] When significant weakness had developed in the aggregates during late December and early January, the Desk had lowered the Federal funds rate objective to 4¾ percent

was contrary to market expectations that the Desk would enter to provide reserves on behalf of the System when funds were trading at that level. It was interpreted by participants as indicating a change in the System's previous stance. The funds rate moved swiftly to 4¹⁵⁄₁₆ and 5 percent that afternoon, though this occurred when it was too late for the Desk to make any significant volume of repurchase transactions for its own account for payment that day. By Monday, funds were trading at 5 percent and above and the Desk provided reserves in volume. The money market remained unduly tight until shortly before the end of the statement week even though the banking system held a substantial volume of excess reserves at the week's end.

The financial markets had expected interest rates to move higher in view of the improvement in the economy, but the late-February evidence of firming by the System occurred sooner than had been expected. Interest rates moved up sharply: the rate on three-month Treasury bills rose by around 30 basis points over the week, while long-term bond yields moved about 15 basis points higher.

During the following statement week, new data suggested that the aggregates were not, in fact, moving outside the Committee's tolerance ranges, and the Desk returned to the 4¾ percent Federal funds rate objective. A surfeit of reserves was being provided by a declining Treasury balance, but the surfeit had to be reinforced by additional System reserve injections in order to put enough downward pressure on the funds rate to bring it close to 4¾ percent by the week's end. Other markets were somewhat slower to settle back. Participants in these markets continued to view underlying economic conditions as suggesting a rise in short-term rates.

At its March meeting the Committee favored essentially little change in conditions of reserve availability but expressed greater willingness at that point to resist any strengthening that might develop in the monetary aggregates. Consequently, the Committee voted for an "aggregates" directive, the more common form of its operational instructions. Such a directive places primary emphasis on the behavior of the aggregates, thereby establishing a somewhat greater likelihood that conditions of reserve availability will be altered between meetings. The aggregates, in fact, behaved about as expected over the next month, and thus the Federal funds rate remained around 4¾ percent through mid-April.

Mid-April through May

At the April and May meetings the recovery appeared to be proceeding at a vigorous pace, with preliminary estimates indicating that real gross national product (GNP) had expanded at a 7½ percent rate in the first quarter. The outlook for economic growth appeared bright, with prospects of further inventory accumulation and continued sizable advances in consumer spending. Also the underlying demand for money appeared to be strengthening. M_1 growth in February and March had averaged about 6 percent at an annual rate, and the staff projected very rapid growth in April. Expansion in M_2 and M_3 was also quite fast. Most members preferred to restrain such strong growth of the aggregates and were willing to tolerate some firming in money market conditions after both the April and the May meetings.

At the April meeting the Committee directed the System Account Manager to seek reserve conditions consistent with Federal funds trading around 4⅞ percent—within a tolerance range of 4½ to 5¼ percent. In addition, the Committee's directive allowed the Desk to respond further to indications of undesired strength in the money supply. Throughout the interval between the two meetings, expected growth in the aggregates was high relative to the Committee's specified ranges, prompting the Account Management to continue to hold back on nonborrowed reserves in relation to demand. By the time of the May meeting, Federal funds were trading at 5¼ percent, the top of the range. The Committee called for an immediate increase in the Federal funds objective to around 5⅜ percent, and by the end of May the Federal funds objective had been raised to 5½ percent under an aggregates directive.

At the time of the April Committee meeting, interest rates on short- and long-term debt had fallen to the lowest levels reached thus far in the year. Three-month Treasury bills traded at rates as low as about 4 70 percent in mid-April, and long-term Government bond yields were down to around 7.80 percent. Still, participants in the markets were cautious about the interest rate outlook as they prepared to face a large volume of offerings during the approaching quarterly Treasury refunding. Indications of vigorous economic growth strengthened market expectations that the System might well resist the rapid growth of the monetary aggregates that was emerging.

During the six weeks from mid-April to late May, when the Desk pursued a less accommodative policy toward reserve provision, the yield curve for Treasury securities moved substantially higher and flattened out a bit. Rates on Treasury bills due in three and six months increased by about 90 basis points; yields on coupon issues maturing in three to seven years moved up by about 55 to 70 basis points; yields on long-term bonds advanced about 35 basis points. During this period bond quotations became especially volatile, particularly on Thursday afternoons following publication of the weekly money stock series, as participants sought to anticipate future System actions. About three quarters of the overall increase in yields on long-term Treasury bonds over the period was concentrated in market trading late on Thursdays and during the day on Fridays.

One episode during this period provides an interesting setting for examining the methods that the Trading Desk uses to implement System policy as well as the market's response to the Desk's actions and other influences. Operations during the bank statement week running from Thursday, May 6, to Wednesday, May 12, posed a particularly difficult challenge: how to effect a change in the System's posture while contending with volatile reserve flows and sensitive securities markets in the midst of a Treasury refunding operation. Prior to the start of that statement week the System's operations had already led to a rise in the Federal funds rate from about 4¾ percent in mid-April to a 5 percent level in early May

On the first day, Thursday, May 6, reserve projections indicated that a fall in the Treasury's balance at Federal Reserve Banks would release about $3 billion of reserves, on average, to the banking system during the statement week beginning that day, although there would be some offsetting reserve absorption by other factors. These estimates thus pointed to an overabundance of about $1 billion of nonborrowed reserves that week. Federal funds were trading at 4 15/16 percent, only slightly on the comfortable side of the 5 percent level sought at that time.

In these circumstances the Desk sought initially to absorb reserves unobtrusively, limiting its operations to transactions directly with foreign accounts. The System sold Treasury bills outright to these accounts and also arranged overnight matched sale-purchase transactions with them, thereby meeting overnight investment requirements of the foreign accounts. Since overnight customer orders were not placed in the market on Thursday, participants concluded that the Desk was draining reserves to a certain extent By early afternoon, however, the weight of the reserve excess began to tell in the money market, with funds threatening to trade at 4⅞ percent. The Desk then entered the market to drain reserves by arranging a moderate amount of four-day matched sale-purchase transactions. These efforts did not affect the expectations of market participants because the Treasury balance typically declines near the start of each month and the need to drain reserves was widely expected.

Through most of Thursday, prices of United States Government securities had been edging lower in quiet activity as the market adjusted to the previous rise in the Federal funds rate. There was also some nervousness because the market was still awaiting the results of the Treasury's offering of ten-year 7⅞ percent notes —the centerpiece of the May refinancing—on which subscriptions had been taken on the preceding day. In this atmosphere, the announcement of a large increase in the wholesale price index added to the market's concern about renewed inflationary pressures. Then, late in the day, the weekly money stock data were released, showing a decline of $800 million in the level of M_1 for the statement week ended April 28. However, this decline was smaller than some market participants had expected and did little to offset the substantial growth recorded in previous weeks. Consequently, market observers grew more concerned that the System might continue to press for a higher trading level of the Federal funds rate. In this uneasy market atmosphere, securities prices continued to decline.

Market weakness persisted on Friday morning after the Treasury announced that it would increase the size of the ten-year note issue by $1.2 billion to $4.7 billion because of heavy subscriptions from investors. While dealers and others subscribing for large amounts had been allotted 15 percent of their subscriptions, some of these subscribers by that time were hoping to receive few, if any, of the new notes. Dealers felt uncomfortable with their awards, and there was further downward pressure on prices in advance of the final refunding auction that day of an additional $750 million of 7⅞ percent bonds, due February 15, 2000. From the time just prior to the release of the money stock data to the close of trading on Friday, Treasury bill rates rose about 5 to 12 basis points, while prices of intermediate-term Treasury issues fell about ¼ to ⅜ point. Prices of long-term bonds fell about 1⅛ points, as the market grew less willing to take on additional bonds in the auction.

On Friday morning the new projections of the monetary aggregates continued to show undesirable strength. The data suggested that growth of M_1 would be well above the Committee's 4½ to 8½ percent range specified for the April-May interval, while M_2 was running well up in the 8 to 12 percent range. This information indicated that it would be appropriate for the Desk to seek conditions of reserve availability consistent with the Federal funds rate moving up from about 5 percent to around 5⅛ percent by Wednesday, the end of the statement week.

In view of the sensitive state of the securities markets in the midst of the Treasury's refunding, the Desk proceeded cautiously in seeking this adjustment. Reserve projections on Friday, May 7, suggested adequate reserve availability because of the System's operations on the previous day and a substantial downward revision in the estimate of reserves likely to be released by a decline in the Treasury balance. Federal funds traded at 4$^{15}/_{16}$ percent and then at 5 percent In an effort to achieve a firmer money market by Wednesday, the Desk again drained reserves unobtrusively by selling Treasury bills outright and arranging over-the-weekend matched sale-purchase transactions, in both cases with foreign accounts Given the sensitive state of the securities markets and the Treasury's long bond auction that day, no overt action to drain reserves was taken in the market.

By Monday, new estimates of reserve availability suggested the need to add about $1 billion to the weekly average, reflecting another large downward revision in the estimates of reserves expected to be provided by the decline in the Treasury balance and other factors. With Federal funds opening at 5 percent, the Desk confined its initial action to a modest purchase of Treasury bills from foreign accounts. When the funds rate began to rise above 5 percent, the Desk entered the market to fill a good portion of the projected reserve deficit by arranging three-day repurchase agreements.

The securities markets remained apprehensive. The bonds sold in Friday's auction had an average yield of 8.19 percent, higher than many had anticipated Treasury bill rates rose an additional 5 basis points or so during the day, while prices of longer maturity coupon issues fell by nearly ½ point. The corporate market also reflected supply pressures, as unsold issues piled up in dealers' inventories and a heavy forward calendar grew even larger.

On Tuesday, reserve estimates indicated adequate availability for the week, due to the Desk's injection of the previous day and an upward revision in the effect of market factors on reserves of about $350 million for the week. Federal funds traded predominantly at 5$^{1}/_{16}$ percent during the day. The Desk took no action in the market to affect reserve supplies but did drain reserves through matched sale-purchase transactions with foreign accounts to establish conditions that would promote a slightly firmer money market on the following day.

Federal funds traded at 5⅛ percent on the morning of Wednesday, May 12, and reserve projections indicated a moderate need to add reserves for the statement week ended that day. With conditions in the money markets about as desired, the Desk arranged temporary investment orders from foreign accounts in the market and awaited further developments. Funds traded steadily at 5⅛ percent until the noon hour and then moved higher. The Desk entered the market at this point to provide reserves through overnight repurchase agreements The funds rate thereafter moved back to about 5⅛ percent. The credit markets, still digesting the recent Treasury offerings, remained quite sensitive to the Desk's toleration of higher trading levels in Federal funds. Treasury bill rates moved up about 5 to 12 basis points, and prices of coupon issues generally fell by ⅛ to ⅜ point.

The Desk's caution during the week stemmed from the fragile state of the securities markets. Until recent years, the System typically tried to avoid changes in its posture with regard to reserve management while the Treasury was formulating its offering and while underwriters were taking on and distributing Treasury securities on a large scale. Such "even keel" considerations have diminished considerably in the past few years. The use of the auction technique for selling coupon securities since 1970 has substantially increased the ability of underwriters to adjust their expectations of future rate levels up to the time of the Treasury's sale The regularization of the Treasury's debt offerings has also reduced uncertainty regarding the size and timing of the Treasury's borrowings. Furthermore, given the increased frequency of the Treasury's sales of coupon issues, the System could no longer maintain an even keel if it were to retain flexibility in pursuing an open market policy consistent with its long-term objectives. Nonetheless, the sharp rise in interest rates during the May 1976 period had not been fully anticipated in the market, and underwriters incurred significant losses on this occasion.

June to mid-October

In early June, with projections of the aggregates showing a somewhat more moderate growth than in late May, the Manager continued to seek a Federal funds rate of around 5½ percent.

By the June FOMC meeting, economic growth appeared to be slowing from the rapid pace seen earlier in the year, and most members viewed this deceleration as a healthy development. In addition, monetary growth appeared to be settling back to a more acceptable rate. Therefore, while awaiting further information on the economic situation, the Committee favored relative stability in money market conditions, preferring to avoid both a significant easing, which might have to be reversed shortly, and also a significant firming. It adopted an aggregates directive but specified a relatively narrow Federal funds rate range of 5¼ to 5¾ percent, thus limiting the potential response to deviations in the aggregates. As it turned out, the estimates of M_1 and M_2 weakened in early July, prompting the Manager to provide reserves more readily, and the Federal funds rate fell from around 5½ percent to about 5¼ percent by mid-July.

The Committee retained a steady posture with respect to reserve availability over the rest of the summer. While there were signs of hesitation in the pace of the economy, data on consumer and business spending at times suggested that the deceleration could be temporary and similar to those observed in the recovery phases of previous business cycles. At the July meeting, the Committee selected a wider Federal funds rate range as part of the specifications for an aggregates directive, though several members still favored keeping the range narrow in view of the uncertainties in the outlook. These concerns were more widespread in August, and the Committee voted for a money market directive at that time. The aggregates remained well within the specified ranges after both meetings, and the thrust of open market operations was not altered.

During the summer the financial markets began a prolonged rally, which gained considerable momentum in August. The short-term markets were buoyed by the moderation in the growth of the money supply and the overall stability of Federal funds trading. Long-term markets were aided by growing confidence that inflationary pressures were waning and by a cutback in demand from corporate borrowers. From the beginning of June to mid-September, three-month Treasury bill rates fell by about 50 basis points and long-term bond yields declined around 35 basis points. With commercial banks and others extending the maturities of their purchases of Treasury coupon securities, yields on intermediate-term issues registered the largest declines—about 65 basis points.

At the September meeting, FOMC members noted the significant interest rate declines that had been registered in the debt markets. While growth in M_1 had slowed, M_2 was expanding at a relatively rapid pace. As the pause in economic growth persisted, however, more attention was given to the possibility that future growth would fall below expectations. Against this background, the Committee in September voted for an aggregates directive, structuring the Federal funds rate range to permit greater room for easing than for firming. The range was established at 4¾ to 5½ percent with the focal point at 5¼ percent, thus allowing the possibility of a 50 basis point decline should growth in the aggregates turn out lower than expected at the time of the meeting.

In the statement week that followed the meeting, the week ended September 29, the Federal funds objective remained at 5¼ percent. However, the Account Management experienced considerable difficulty in achieving this objective, as the Treasury's operations drained a larger than expected volume of reserves. Initially, the Desk faced a sizable estimated reserve deficit of $3½ billion to $4 billion (daily average), mainly due to the continuing buildup in the Treasury's accounts at the Federal Reserve Banks after the September 15 tax date. On the first day of that week, the Desk arranged $3.8 billion of seven-day repurchase agreements, an operation that had been announced to the market on the previous afternoon. While the reserve injections that day about met the week's need, the Manager expected that withdrawals from the repurchase agreements would necessitate further reserve injections late in the week.

Indeed, early terminations of such contracts, which came to $1.3 billion on a daily average basis, substantially eroded the net reserve injection. Furthermore, upward revisions in the estimates of the Treasury's balance, amounting to $1.1 billion on average, enlarged the reserve deficit. Consequently, the money market became quite firm beginning on Monday, September 27, and the Desk arranged five additional rounds of repurchase agreements over the rest of the statement week. Despite taking virtually all propositions for repurchase agreements on the final two days, the Desk still was unable to depress the Federal funds rate from around 5⅜ and 5½ percent to the 5¼ percent objective. On Wednesday night, holdings in the repurchase account, including bankers' acceptances, reached a record $8.7 billion.[6] The securities markets seemed to show little reaction to the tight conditions after the weekend, partly because they could observe the Desk making every effort to counteract the money market firmness.

To prevent a repetition of the money market strains and the uncertainties associated with sizable early terminations of repurchase agreements, the Desk instituted an alternative form of repurchase contract in the week of October 6, one that did not permit termination before maturity. On the first day of the new statement period, the Desk arranged about $1.4 billion of such agreements in addition to $4.6 billion of four-day contracts that carried the right of early termination. As expected, most of the securities involved in the nonterminable contracts came from the portfolios of banks and other institutions while the dealers themselves, both bank and nonbank, exhibited a preference for the terminable contracts.

In early October the projections of the monetary aggregates began to indicate a substantial weakening in the growth of demand deposits for the September-October interval, although M_2 growth remained near the middle of its range. In view of this, the Desk began to seek Federal funds trading in a range of 5⅛ to 5¼ percent instead of the previous 5¼ percent objective. When subsequent projections confirmed this picture,

[6] This record was eclipsed on December 29 when such holdings built up to $10.7 billion

the Desk became steadily more accommodative, and by the time of the October meeting funds were trading around 5 percent.

Mid-October to the year-end

Most FOMC members favored a slight easing in money market conditions at the October meeting. The economy's lackluster performance continued; the growth of real GNP had slowed a little further in the third quarter from the rather modest pace of the second quarter. Moreover, the risks of a shortfall from expectations had increased, since it appeared that the slow growth of personal income, the protracted sluggishness in consumer spending, and the decline in stock market prices could, if extended, dampen business confidence and adversely affect investment plans. The Committee voted an aggregates directive and decided to seek a decline in the Federal funds rate from 5 percent to 4⅞ percent (the middle of a 4½ to 5¼ percent range) during the first full statement week after the meeting.

A few days after the meeting, however, the outlook for the monetary aggregates displayed surprising strength, with both M_1 and M_2 projected near the upper limits of their tolerance ranges. Moreover, it was apparent that, unless later data contradicted this outlook, an easing move would only have to be reversed one week later. Accordingly, the Committee concurred in the Chairman's recommendation that the Manager should hold the System's posture unchanged. Data received in the following week continued to indicate unexpected strength, and the Manager again consulted with the Chairman who advised that any significant increase in the Federal funds rate objective would be inconsistent with the Committee's intent. The Desk continued to seek reserve conditions consistent with Federal funds trading around 5 percent until the November meeting.

At its November meeting, the Committee concluded after its review of economic and financial developments that a decline in the Federal funds rate to about 4⅞ percent would be appropriate within the first week after the meeting, followed by a further decline to around 4¾ percent during the second week. The Federal funds rate range was set at 4½ to 5¼ percent. Subsequent changes in the objective would depend on the outlook for the aggregates. This time the monetary growth rates remained closer to expectations, although M_1 growth was slowing. In these circumstances, the Desk held to the 4¾ percent objective through early December and then shifted to 4⅝ percent when it appeared that M_1 was weakening further.

The deliberations at the December meeting struck a more optimistic chord as most members agreed that the business situation had strengthened. Indications of strong gains in personal consumption and residential construction suggested that, once the decline in inventory accumulaton had run its course, economic growth would soon accelerate. The Committee preferred to maintain the prevailing money market conditions in the weeks ahead. In part, this reflected the difficulties in assessing the significance of monetary growth rates over the December-January period. Also, improvement in the economy and substantial interest rate declines strengthened expectations for the future. The Committee voted a money market directive and the Desk continued aiming for conditions of reserve availability consistent with Federal funds trading at 4⅝ percent through the year's end.

The securities markets extended the summertime rally through the end of the year. Over the last three months, interest rates fell considerably, with both short- and long-term Treasury securities posting declines of about 70 basis points The economy's sluggish advance through most of the fourth quarter had suggested that two of the markets' major concerns, the possibility of heavy demands from borrowers and a rebound in inflationary pressures, would not prove troublesome for the time being. In addition, very sharp price gains were recorded in the markets during those intervals when the System had shifted toward a more accommodative interest rate stance. In late November and December the markets' perceptions of the Desk's moves toward ease, in conjunction with a reduction in the Federal Reserve discount rate from 5½ percent to 5¼ percent, and a flow of news that emphasized the economy's slow growth generated expectations in the markets of further accommodative steps. The markets also reacted bullishly to the Federal Reserve's reduction in reserve requirements in December. Speculative enthusiasm was widespread among market participants, and dealers built up inventories of Government securities to record levels in December.

Against this background, the retreat in the securities markets that followed in the first few weeks of 1977 was especially pronounced. New economic data indicating a strengthening in business activity, the absence of further accommodative steps by the System, and participants' attempts to capture profits all gave rise to heavy selling pressure. Moreover, there were anxieties over the inflationary pressures that might arise out of the severe winter conditions and the new administration's proposed fiscal stimulus program. By the end of January, the backup in yields on Treasury issues had eliminated a substantial portion of the declines posted in the fourth quarter of 1976; the sell-off in the corporate and tax-exempt sector was less pronounced.