

Monetary Policy and Open Market Operations in 1985

Monetary policy in 1985 sought to encourage sufficient money and credit growth to sustain the economic expansion against a background of relatively well-contained inflationary and cost pressures. Economic growth tended to be slower than the rapid pace in 1983 and the first half of 1984. Policy decisions were made amid considerable uncertainty about how to interpret the behavior of money. It appeared that money demand was increasing, particularly for the narrow M1 definition. The strength in demand was seen as a reaction to lower inflation and related declines in nominal interest rates, as well as to a pronounced narrowing of the differential between market rates and rates on interest-bearing transactions accounts. In the face of a generally sluggish economic expansion, the Federal Open Market Committee (FOMC) accommodated to varying degrees the relatively rapid growth in M1. However, it continued to be alert to a possible leveling-off of money demand to guard against allowing excessive monetary growth which would foster renewed inflationary forces.

A variety of other factors, outside the direct control of the FOMC, framed the environment in which policy functioned. The huge Federal and current account deficits and the uneven participation by various sectors in the economic expansion were constant sources of concern in the policy-

making process. Interest rates, both in nominal terms and relative to recent inflation rates, were higher than they might have been without the Federal deficits, although rates did fall substantially over the year.

The persistent large budget deficits were a source of year-long Congressional debate. At times, the prospects for fundamental changes seemed dim; debate continued until August before agreement was reached on a budget for fiscal 1986. The latter part of the year was taken up by debate on a new approach to deficit reduction, the so-called Gramm-Rudman-Hollings amendment to the bill to increase the debt ceiling, which was passed in December. The amendment mandated year-by-year reductions of the deficit to zero by 1991. According to the amendment, if the Administration and Congress could not agree on a budget consistent with the yearly deficit ceilings, then across-the-board spending cuts would be made automatically to all programs not specifically exempted. The financial markets were encouraged by the amendment even though its constitutional-ity was under question from the start, and there was much doubt about whether it would achieve the mandated deficit reduction.

During 1985, foreigners continued to be willing to increase holdings of dollar assets, thereby helping to finance part of the Federal deficit and to keep the dollar relatively strong internationally even in the face of unprecedented current account deficits. The exchange value of the dollar did fall irregularly during much of the year after having risen sharply in January and February to levels almost universally perceived as unrealistic. In September, the Group of Five industrial nations (G-5)¹ agreed to encourage further appre-

Adapted from a report submitted to the Federal Open Market Committee by Peter D. Sternlight, Executive Vice President of the Bank and Manager for Domestic Operations of the System Open Market Account. Ann-Marie Meulendyke, Manager, Securities Department and Sandra Krieger, Chief, Securities Analysis Division were primarily responsible for preparation of this report. Other members of the Securities Analysis Division assisted in the preparation: Robert Van Wicklen, Senior Statistician, Douglas Schindewolf, Market Research Analyst, and Laura Raftery, Assistant Economist, each prepared sections. Connie Raffaele, Senior Statistician, oversaw the checking and production of the report.

¹ France, Japan, the United Kingdom, the United States, and West Germany

ciation of nondollar currencies and succeeded, through market intervention and comments by various central bank and Treasury officials, in promoting significant exchange rate adjustments.

The continued high value of the dollar during the year contributed to strains in several sectors of the economy that are heavily dependent on exporting. Agriculture and the lending institutions that service it, along with some types of manufacturing that are in close competition with imports, were particularly weak. The pressures in the adversely affected areas encouraged a worrisome demand for protectionist measures. Weakness in these areas was offset by strong growth in the service sectors.

Mindful of these crosscurrents and uncertainties, the FOMC continued to pursue its objectives flexibly, drawing on a number of monetary and economic developments to help shape its policy decisions. It instructed the Trading Desk here at the Federal Reserve Bank of New York (FRBNY) to follow the same basic approach to policy implementation that had been used in the previous two years. Under these procedures, the FOMC stated in its directives a desired degree of pressure on reserve positions, translated for operational purposes into a level of adjustment plus seasonal borrowing at the discount window. It then indicated factors to be taken into account in determining whether an adjustment to the degree of reserve pressure might be appropriate, including developments in monetary aggregate growth, economic activity, inflation, and the credit and foreign exchange markets. The weights given to the factors entering the decision and the urgency for change in one direction or another shifted from meeting to meeting depending on the Committee members' perceptions of the balance of likely risks. After the G-5 agreement, for instance, the exchange value of the dollar got more attention in the day-to-day decision making process.

Several special factors affected the technical implementation of policy during the year. A crisis of confidence affected privately-insured thrift institutions in Ohio and subsequently in Maryland. For a few months, the Desk adjusted the discount window borrowing assumptions to avoid unintentional changes in reserve pressure as these institutions met some of their liquidity needs at the discount window. Reserve availability was subject to very large swings and considerable uncertainty as the Treasury's cash balances at the Federal Reserve moved up and down dramatically several times during the year. Disruptions were particularly severe during the fourth quarter as the Congress delayed action to increase the debt ceiling while it debated the Gramm-Rudman-Hollings amendment. Late in the year, a massive securities clearance failure disrupted reserve management and forced one bank to borrow an unprecedented \$22.6 billion overnight at the discount window. The event put a spotlight on the vulnerabilities of the payments system in an era of increasingly heavy payments flows.

The monetary aggregates

For the year, the narrow M1 measure grew at a rate substantially above its planned growth range even after the range was rebased and widened at midyear (Chart 1). However, the broader aggregates, M2 and M3, grew at rates within their annual ranges (Charts 2 and 3). The persistently strong growth in M1 moved it out of line with its traditional relationships to economic activity and the broader aggregates. The measure of nonfinancial debt monitored by the Committee also exceeded its range (Chart 4).²

In 1984, it had appeared that the behavior of M1 was returning to a more normal relationship with the other measures. Its income velocity³ returned to an increasing pattern after having fallen sharply in late 1982 and much of 1983. However, M1 velocity declined steeply throughout 1985 (Chart 5). The FOMC looked for clues to explain the exceptional growth of M1 and interpreted it in the context of the behavior of the broader aggregates and the outlook for economic activity, inflationary pressures, conditions in foreign exchange markets, and developments in the domestic and international financial markets.

The Committee had long recognized that changes in the relationship of M1 to income had developed as deposit deregulation took effect. In the late 1970s, but more dramatically in the 1980s, a series of rule changes permitted the payment of market-related rates on consumer time and savings instruments and of explicit interest on consumer transactions accounts. The latter, called NOW and Super NOW accounts,⁴ became a mix of relatively high velocity transac-

² For a more detailed discussion of the behavior of the aggregates see John Wenninger and Lawrence J. Radecki, "Monetary Aggregates in 1985," this *Quarterly Review* (Winter 1985-86), pages 6-10.

All money and debt growth rates cited in this report are based on the data available before the benchmark and seasonal revisions in February and March 1986. The earlier data were used because they represent the information available to the FOMC members at the time their decisions were being made. The revisions raised the fourth quarter to fourth quarter growth rate of M1 from 11.6 to 11.9 percent. They left the M2 growth rate unchanged at 8.6 percent. The growth rate of M3 was lowered from 7.9 to 7.7 percent. The non-M2 component of M3 was revised downward because of slower growth of thrift repurchase agreements. The quarterly growth patterns of the aggregates were generally similar to what they had been before the revisions. The growth rate of domestic nonfinancial debt was revised to 13.9 percent from 13.5 percent.

³ The income velocity of M1 is defined as nominal GNP divided by the level of M1.

⁴ Interest is paid on a NOW account, and unlimited withdrawals are allowed to be made by negotiable or transferable instruments to make payments to third parties. Since December 31, 1980 all depository institutions have been allowed to offer NOW accounts to individuals, nonprofit organizations, and governments. Prior to that, issuance was limited to selected states in the Northeast. Regulations stipulated that the interest rate paid on the deposit could be no higher than 5¼ percent until early 1986, when the interest rate ceiling would be removed. Super NOW accounts were authorized on January 5, 1983. These accounts were similar to NOWs but were distinguished by having a \$2,500 minimum balance (cut to \$1,000 in January 1985 and eliminated in January 1986). In addition, there were no restrictions on the rate of interest that could be paid.

Chart 1

M1: Levels and Target Ranges

Cones and tunnels

Billions of dollars

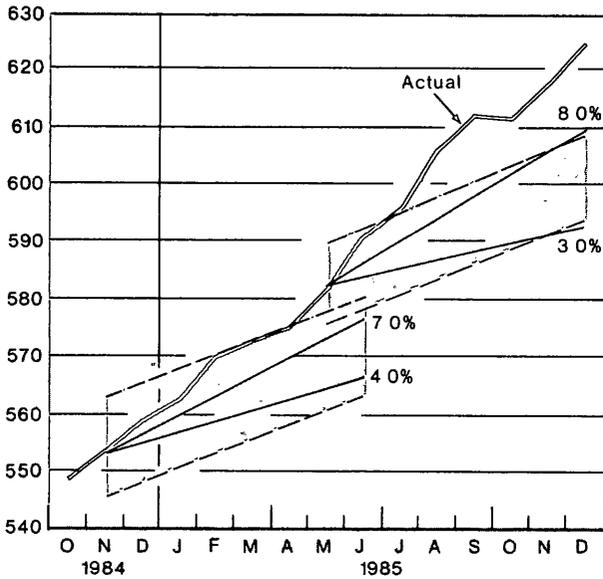


Chart 3

M3: Levels and Target Ranges

Cones and tunnels

Billions of dollars

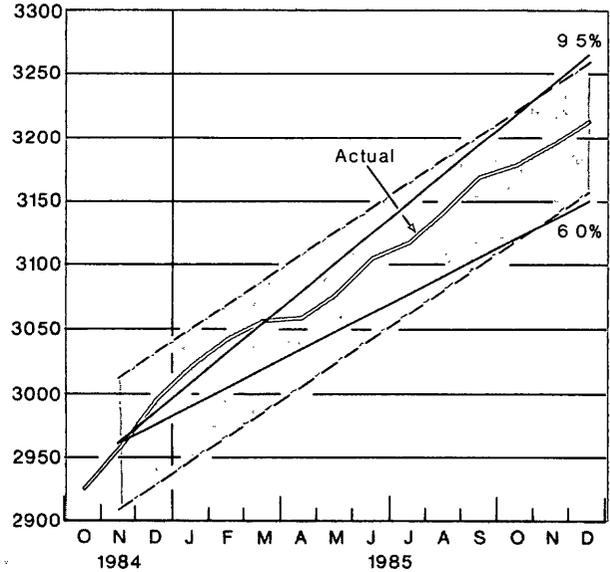


Chart 2

M2: Levels and Target Ranges

Cones and tunnels

Billions of dollars

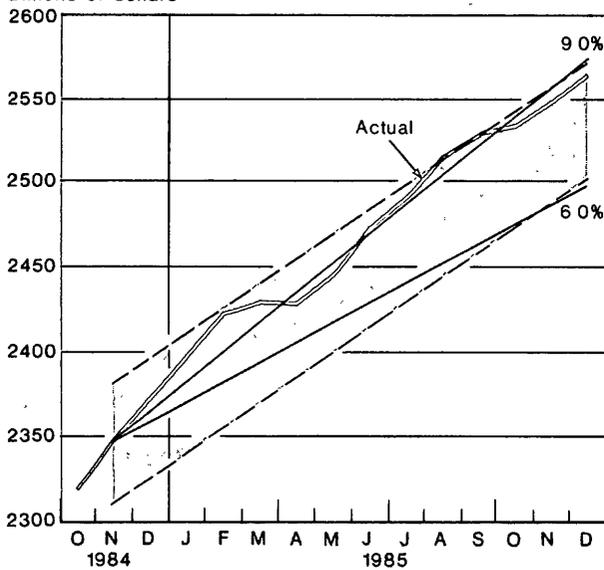
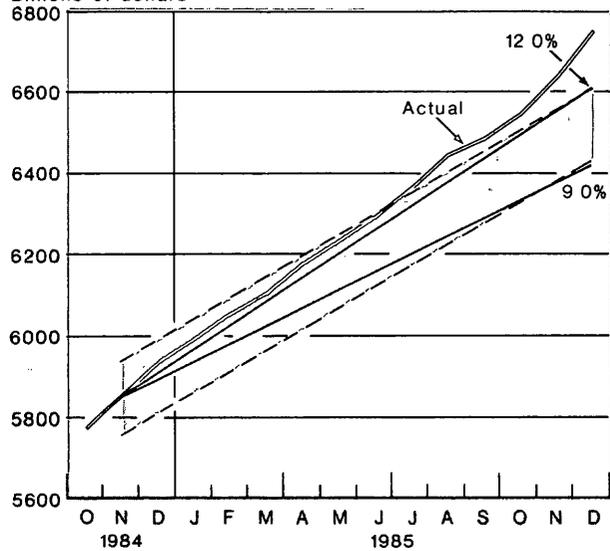


Chart 4

Total Domestic Nonfinancial Debt : Levels and Monitoring Ranges

Cones and tunnels

Billions of dollars



tions vehicles and low velocity savings vehicles. The inclusion of these deposits in M1 tended to reduce its overall income velocity. It had appeared in 1984 that the behavioral changes in M1 stemming from regulatory changes might be nearing completion. However, a new pattern of response also seemed to be developing. Banks generally adjusted the rates offered on Super NOW accounts slowly and could not raise the rates on NOW accounts because of the mandatory interest rate ceiling. Consequently, the sensitivity of M1 velocity to changes in market rates appeared to have increased. When market rates fell in the latter part of 1984 and in 1985, holding funds in NOW and Super NOW accounts became much less costly, since, in percentage terms, the opportunity cost of holding deposits in these accounts declined by relatively more than market interest rates.

Beyond the effects of regulatory changes on velocity was the response to the lowering of inflation and inflationary expectations. As interest rates fell, partly reflecting greater price stability, and as holding wealth in money form became less costly, the quantity of money demanded rose. The significant decline in interest rates during the second half of 1984 and through much of 1985 was likely a factor in the buildup of individual and business cash balances.

In February, the Committee adopted the 4 to 7 percent growth rate range for M1 from the fourth quarter of 1984 to

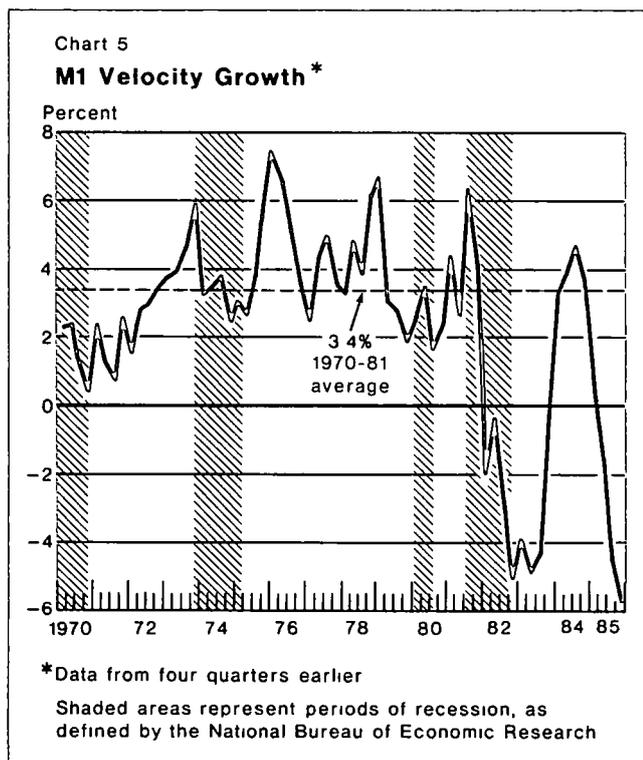
the fourth quarter of 1985, which was provisionally established at its July 1984 meeting. The range was predicated on the tentative expectation that M1 velocity would rise in 1985, though possibly more slowly than in the previous year or than its trend of the 1960s and 1970s. At that point the members were not particularly disturbed by the strong growth M1 was exhibiting in the early part of the year, noting that it had followed a period of slow growth. They expected M1 growth to move gradually into the target range as the year progressed assuming velocity followed the anticipated pattern. The use of parallel bands around the middle of M1's desired growth range tended to de-emphasize the artificially narrow range early in the year depicted by the traditional growth cones.

Through April, it still looked as if M1 might settle down to a pattern that would bring it within the growth range. However, the rapid growth in May and June made it apparent by midyear that M1 growth was out of line with expectations. It expanded at a 10½ percent annual rate from the fourth quarter of 1984 to the second quarter of 1985. Over the same period demand deposits increased at a rapid 8 percent annual rate, checkable interest-bearing transactions accounts increased at a 19 percent annual rate, and currency increased at a 7 percent annual rate; M1 velocity declined at a substantial 4¾ percent annual rate.

At its semiannual review of monetary targets in July, the Committee concluded that the above-target expansion in M1 could be accepted for the first half of the year in light of the sluggish growth in economic activity, relatively well-contained price pressures, and a high value of the dollar in foreign exchange markets. Moreover, growth in the broader aggregates up to that point had been consistent with the Committee's earlier expectations.

In its outlook for the remainder of 1985, the Committee generally expected a gradual return of velocity growth toward more usual patterns. In the absence of sufficient experience with the new institutional framework surrounding M1 and since the deregulation had occurred alongside a general decline in inflation and market interest rates, the members were uncertain about what new trend in velocity may have been emerging or the precise nature of the relationship between fluctuations in interest rates and the money supply. However, the Committee leaned toward the belief that the public's demand for M1 had risen more or less permanently and that once the adjustment to lower interest rates and inflation was complete, velocity would increase again. Thus, the Committee chose to rebase M1 in the second quarter and reset the growth range at 3 to 8 percent. This relatively wide range recognized the uncertainties surrounding the behavior of M1 yet still implied a substantial slowing in growth from the pace of the first half.

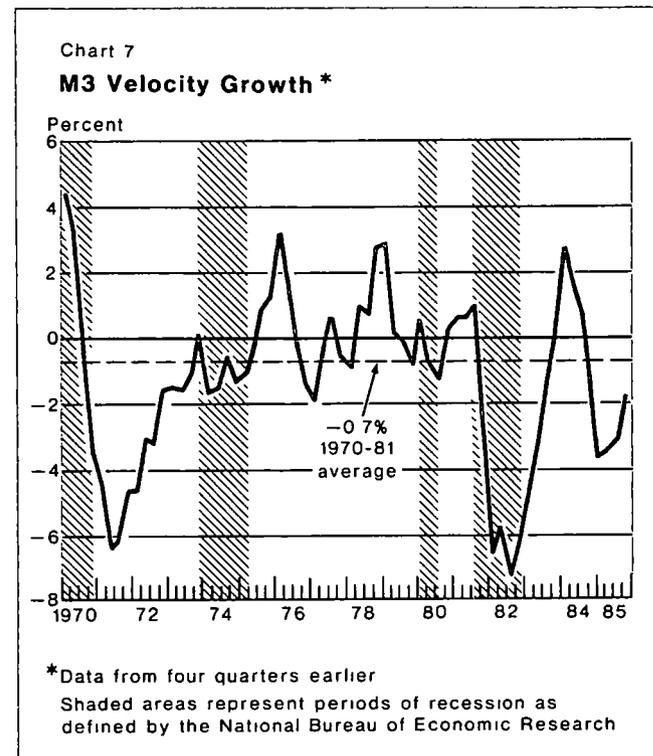
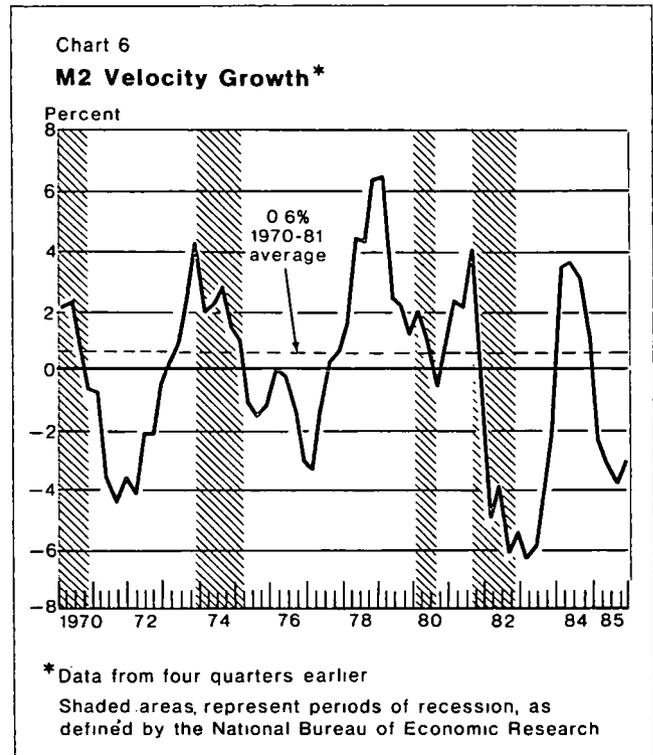
In fact, velocity did not resume its climb in the second half of the year, but instead continued to drop—at a 6 percent annual rate in the last two quarters of 1985. M1 ex-



panded at a 12 percent annual rate from the second quarter to the fourth quarter of 1985, far above the new range set in July. This brought M1 growth for the four quarters to about 11½ percent. The components' respective rates of growth in the second half of the year were similar to those for the first half of the year. For the four quarters of 1985, checkable interest-bearing transactions accounts grew 21¾ percent, about double the 1984 pace but similar to the pace in 1983 when Super NOW accounts were introduced. Currency expanded by a more typical 7½ percent.

Demand deposits grew 8¼ percent, the highest rate of increase since 1972. Business demand balances accounted for a good part of the expansion, especially balances of financial businesses. The strength may be partially explained by the impact of declining interest rates which reduced incentives to economize on demand deposits and encouraged increased levels of compensating balances. In addition, financial problems that developed in certain areas of the market may have encouraged more cautious bank and cash management practices. The high transactions volume associated with the strong stock market may also have built up these balances. Whether these factors in combination fully explain the expansion is an open question. Consumer demand deposit growth for the year was relatively modest, although it showed considerable volatility. Presumably some consumers switched during the year from demand deposits to interest-bearing accounts.

The Committee's target ranges for M2 and M3, established in February, were 6 to 9 percent and 6 to 9½ percent, respectively, with the upper ends of each raised one-half of a percentage point from the tentative 1985 ranges proposed in July 1984. These were technical adjustments, in response to estimates that M2 velocity growth would be more in line with its long-term trend of little change. M2 velocity growth had been very depressed late in 1982 and early in 1983 when the introduction of MMDAs drew funds into M2 deposits, but it had been above its long-term trend line in 1984 (Chart 6). Growth in the nontransactions component of M2 was strong in the first two months of 1985, propelled by growth in small time and savings deposits and noninstitutional money market mutual funds. For a time, these instruments were more attractive in yield than other instruments, as declines in rates paid on them lagged declines in market rates. The spread narrowed over the course of the year, and nontransactions M2 growth moderated. Over the year, M2 growth was probably restrained to an extent by a restructuring of household portfolios with such non-M2 instruments as shares of stock and bond mutual funds. From the fourth quarter of 1984 to the fourth quarter of 1985, M2 grew by 8½ percent, consistent with the Committee's goals, and its nontransactions component grew by 7¾ percent. Income velocity growth for M2 in 1985 turned out somewhat below the long-run trend line although it was much less depressed than that for M1.



M3 growth at 8 percent for the four quarters of 1985 fell comfortably within its annual range. Its non-M2 components were exceptionally weak, growing only 5½ percent over 1985. (The growth in these components was lowered to 4 percent reflecting seasonal and benchmark revisions in February and March 1986.) Large time deposits, the largest component of M3 not included in M2, grew very slowly during the year. Reflecting the slow growth in that component, the pattern of M3 velocity moved below its trend by less than either of the narrower measures (Chart 7).

Banks and thrifts have been relying less on funding through large negotiable certificates of deposit (CDs). Deregulation has allowed them to attract more consumer deposits, a less costly alternative to routine CD funding. In addition, stricter capital requirements have retarded balance sheet growth. Accordingly, the need to issue CDs has decreased as loan growth has slowed.

The monitoring range for domestic nonfinancial debt established by the Committee in February was 9 to 12 percent, which contemplated a slowing from the 13½ percent rise in 1984. Instead, the debt measure expanded by 13½ percent from the fourth quarter of 1984 to the fourth quarter of 1985, driven by the Federal deficit, rising consumer credit, the substitution of debt for equity as a result of mergers and other financial reorganizations, and the acceleration of state and local debt issuance in response to proposed tax law changes.

The economy and financial markets

Economy

The pace of economic expansion slowed considerably in 1985. Real GNP grew at only a 2.1 percent rate from the fourth quarter of 1984 to the fourth quarter of 1985, compared with 4.7 percent a year earlier.⁵ The pace for 1985 was somewhat below the average growth in the third year of postwar expansions. According to the revised data, economic growth rebounded from the negligible rate at the end of 1984 to a moderate rate in the first quarter of 1985, led by a drop in net imports and a rise in consumption.⁶ The pace then slowed in the second quarter, picked up modestly in the third quarter, and dropped off again in the final quarter (Initial figures had shown essentially no growth in the first quarter, a slight pickup in the second quarter and a further acceleration in the third quarter.) A major factor slowing the expansion was the rise in net imports. The other major negative factor was reduced inventory accumulation. Except for the last quarter, the primary source of strength in the economy was consumer spending, which outpaced income growth

and led to a drop in the savings rate to 4.6 percent, the lowest since 1949. Consumption was boosted in the third quarter by strong auto purchases stimulated by financings offered by dealers at below-market interest rates. Its growth dipped to a negligible pace in the final quarter as these financings were temporarily discontinued and auto sales fell. Government spending and business investment then took up the slack and outweighed the rise in net imports.

While real GNP growth was modest, there was nonetheless a small net decline in the civilian unemployment rate, from 7.2 percent in December 1984 to 6.9 percent in December 1985, the lowest since April 1980. Manufacturing employment was weak, reflecting the worsening trade deficit. From December 1984 to December 1985, manufacturing employment declined 170,000 while total nonfarm payroll employment rose by nearly three million.

Inflation remained subdued for the fourth consecutive year. The good price performance benefited from modest wage settlements, low capacity utilization compared with the average of postwar expansions, weakness in agricultural prices, and oil price declines late in the year. The implicit price deflator rose by only 3.1 percent from the fourth quarter of 1984 to the fourth quarter of 1985, compared with 4.1 percent in the previous year; it was the slowest rise on that basis since 1967. From December 1984 to December 1985, the consumer price index rose 3.7 percent while the producer price index rose 2.1 percent, compared with increases of 4.0 and 1.7 percent, respectively, a year earlier.

Domestic financial markets

Interest rates fell substantially over the year on intermediate- and long-term debt (Chart 8). Short-term rate declines kept pace with those in the longer term markets through midyear but did not participate in the rallies in the longer term sectors during the latter part of the year in the absence of further declines in the Federal funds or discount rate (Chart 9). Consequently, the yield curve flattened considerably by the end of the year (Chart 10). The Treasury's constant maturity yield indexes dropped about 2 to 2½ percentage points on 2- to 30-year maturities while Treasury bill rates declined 80 to 140 basis points.

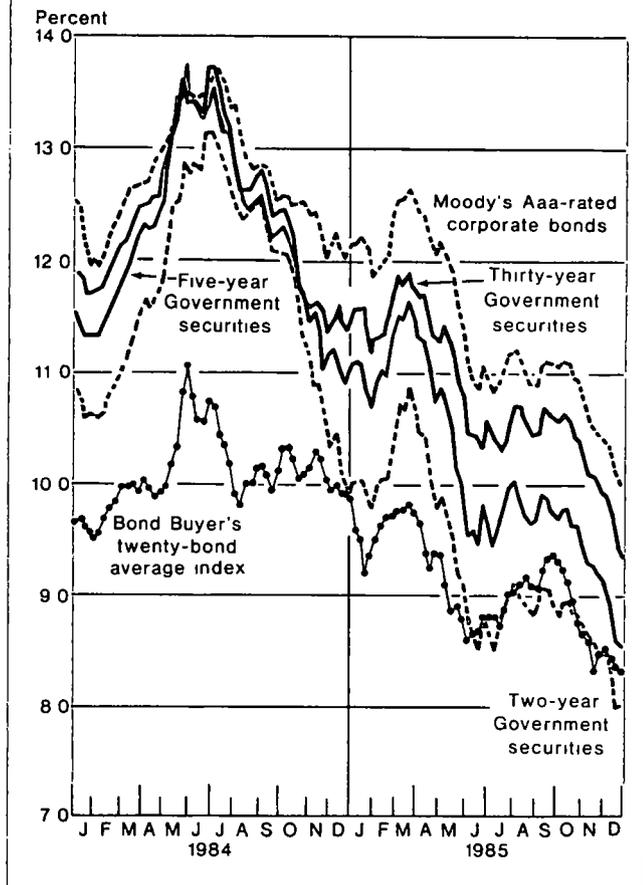
January's atmosphere was largely bullish with the monetary and inflation picture fueling participants' hopes of an easing in System policy. Then from late January to mid-March rates rose sharply, reaching their highs of the year on most categories of securities. Chairman Volcker in his February "Humphrey-Hawkins" testimony noted an end to the System's recent policy easing. Against this background, participants reacted bearishly to strong monetary data, signs of stronger economic growth, and an abrupt drop in the dollar following concerted central bank intervention in late February. There was also some concern that the weaker dollar might reduce foreign demand for U.S. securities.

⁵ The economic information incorporates major revisions in historical GNP data made through April 1986, including a rebasing from 1972 to 1982 in the implicit price indexes and constant dollar series and revisions in nominal series back to 1973

⁶ All data referred to in this section are seasonally adjusted

Chart 8

Selected Intermediate and Long-term Interest Rates

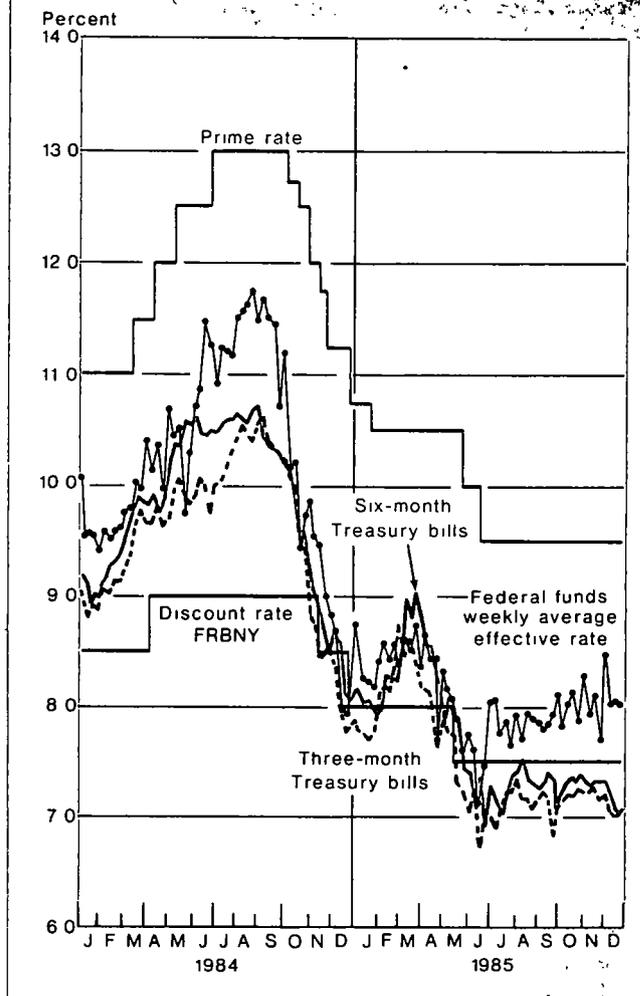


Around mid-March the markets began a fairly sustained rally that, with a few brief interruptions, was to last through early July. Data suggesting weakness in the economy encouraged hopes of an easing in System policy, including a discount rate cut. In this atmosphere reserve provisions by the Desk, though recognized as technical, were viewed positively and some ordinarily bearish money supply data were shrugged off. Signs of progress in reducing the Federal budget deficit also boosted sentiment. The cut in the discount rate before the May FOMC meeting prolonged the bullish momentum. Major banks lowered their prime lending rates from 10½ to 10 percent at the time of the discount rate cut and to 9½ percent in mid-June.

Another moderately bearish period began in July, after Chairman Volcker's midmonth Humphrey-Hawkins testimony which discouraged participants' hopes for a near-term easing. Efforts to come up with a Federal budget to reduce

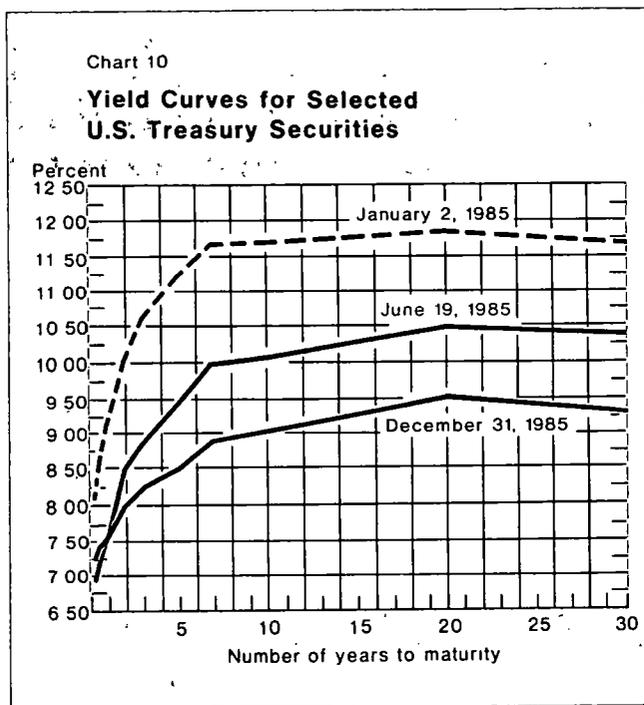
Chart 9

Selected Short-term Interest Rates



the deficit stalled in Congress, and mixed economic reports during the period muddled the economic outlook. Dealers approached the August Treasury refunding with some apprehension that the weaker dollar would reduce foreign demand for U.S. securities, but the auctions went well at the prevailing higher rates.

Between mid-August and late October, rates moved moderately in either direction, largely in step with changing perceptions of the economy's strength. The most sizable rate movements were a rise in early September and a decline later that month. The G-5 agreement announced on September 22 initially had a mixed impact, leading to a dip in short-term rates on the belief that the Federal Reserve



would refrain from tightening policy but a rise in long-term rates due to concerns over the impact on inflation.

A bullish atmosphere began to reemerge in late October and rates on intermediate and long-term issues followed a downward trend for the balance of the year. Data showed continued low inflation and moderate economic growth. In addition, the inflation outlook benefited from a decision by OPEC to lift pricing restrictions and decisions elsewhere to increase production or reduce prices. Prospects for the passage of the Gramm-Rudman-Hollings amendment also were viewed favorably. Confidence grew that the G-5 agreement would preclude a firming in monetary policy. Official comments were read as suggesting that the recent high monetary growth was not inflationary, and that System policy was more likely to ease than to tighten. The comments renewed hopes of a discount rate cut. Congressional delays in extending the Treasury's debt ceiling aided the technical condition in the Treasury market. Some concerns emerged briefly as to the market's ability to absorb the huge backlog of debt scheduled within a short period once the ceiling was increased. However, dealers had established sizable short positions in anticipation of the debt sales, and long-term Treasury yields fell, reaching single digits by late November for the first time since 1980. The rally was sustained by the enactment of the Gramm-Rudman-Hollings budget balancing amendment, prospects of further cuts in oil prices, and more generous reserve provision by the Desk over the final months of the year.

The emergence of the Treasury's STRIPS program (Separate Trading of Registered Interest and Principal of Securities) became an important element in the zero coupon securities market. The program allows for the separate trading of the interest and principal components of selected Treasury issues in book entry form as direct obligations of the U.S. Treasury. The first issues eligible for the program were the 10- and 30-year securities sold in the February refunding. In July, the Treasury introduced generic CUSIP⁷ numbers (for book entry identification) on all coupon payments maturing on the same date to broaden the secondary market in stripped issues. (The final principal payment of any issue retained a separate CUSIP number.) This made coupon payments for particular dates interchangeable, regardless of the original security from which the coupons were stripped, thus enhancing their liquidity. Coupons continued to trade at different prices from the corpus of the same date, however, particularly since Japanese investors could realize tax advantages from buying the latter but not the former. By the end of the year a total of 11 "strippable" issues had been marketed, of which \$23 billion, or 28 percent, was converted into STRIPS. The most popular issues were a 20- and a 30-year bond of which 60 to 65 percent was converted. Stripping activity outside of the STRIPS program virtually disappeared with only a few new proprietary issues being created, mostly targeted at small accounts or at specific defeasance programs.

The market for Federally sponsored agency issues was affected in July by reports of the deterioration of the loan portfolio of the Federal Farm Credit Bank System (FFCB). Yield spreads between new six-month and nine-month FFCB bonds and comparable Treasury issues widened in several stages from a negligible level to as much as 80 to 85 basis points in the fall as a series of reports pointed to large actual and prospective losses. For some longer dated issues the spreads widened to well over 100 basis points. Some market participants were reluctant to accept FFCB issues as collateral in RP transactions and at times there was only limited trading in FFCB securities. Spreads narrowed as a bill to provide backup support for the FFCB was debated and were about 50 basis points after the bill was passed by the Congress on December 18. To a lesser extent, prices of Federal Home Loan Banks (FHLB) securities were adversely affected by reports in September of plans to issue a large volume of new debt to shore up the ailing Federal Savings and Loan Insurance Corporation (FSLIC). Demand for FHLB issues subsequently improved and yield spreads to comparable Treasury issues returned to a more normal level.

Borrowing in the corporate bond market rose sharply from the previous year. Publicly-offered domestic sales increased by \$46 billion to \$119 billion. The lower rates that

⁷ The Committee on Uniform Securities Identifying Procedures assigns identification codes to various securities. These codes are described as CUSIPs.

emerged provided an incentive to refinance old issues carrying high coupons. The financing of corporate acquisitions as well as stock purchases to forestall some unwanted takeovers also boosted issuance. Corporations took the opportunity to borrow heavily in the Eurobond market when rates proved attractive. They did so in January at yields close to Treasury yields. For the year as a whole such borrowings totaled \$36.3 billion, compared with \$21.5 billion in 1984. Moody's high grade corporate bond index declined 2¼ percentage points over the year, similar to the drop in Treasury yields on comparable 20-year maturities.

New issuance in the tax-exempt sector showed the most dramatic increase, more than doubling to an estimated \$216 billion from the previous record total of \$107 billion in 1984.⁸ Aside from the decline in rates, the increased borrowing was prompted by the specter of tax reform legislation that might eliminate or curtail many types of issues. The mounting supplies limited the rate declines in the municipal sector and the ratio of tax-exempt to taxable yields rose to unusually high levels. Banks showed a ready appetite for the new issues, since tax reform proposals included the elimination of the deductibility of carrying costs of municipal securities issued after year-end 1985. Nontraditional investors were attracted by the relatively high yields compared with taxable issues. Substantial "crossover" demand was reported, particularly in October when there was a dearth of Treasury issues before the debt ceiling was increased. Bond funds and casualty insurance companies remained heavy investors. The Bond Buyer's index of 20 municipal bond yields fell from 9.91 percent in late 1984 to 8.36 percent a year later. The decline was 65 basis points less than the drop in the Treasury's 20-year constant maturity index.

Foreign exchange markets

The value of the U.S. dollar in foreign exchange markets peaked in late February, reaching either record highs or the highest level in a number of years against most major currencies. The dollar had been supported by the economic strength and high interest rates in the United States relative to the more subdued economic outlook abroad. Perceptions of relative political stability in the United States helped fuel the rise. The dollar then reversed course, working irregularly lower over the balance of the year. Late in February, concerted dollar sales by the United States and a number of other industrial countries helped put some downward pressure on the dollar. Around mid-March a more pessimistic reassessment of the outlook for the U.S. economy and a concomitant shift in view regarding U.S. interest rates emerged. The dollar dropped until late April. It then firmed a bit and remained fairly steady through the end of June as fears faded that foreign investors would liquidate their hold-

ings on a large scale. Yields on dollar investments also remained relatively attractive. Moreover, the U.S. economy continued to outperform most other industrialized economies.

In July the dollar resumed its descent. The performance of the U.S. economy appeared to be more moderate than most observers had anticipated. Mounting U.S. trade and current account deficits were increasingly perceived as a drag on the domestic economy. Given the increase in protectionist pressures, speculation emerged that the Administration might welcome a further decline in the dollar. The dollar declined particularly sharply following the announcement of the September 22 G-5 agreement, more than offsetting the small increases in late August and early September. The announcement effect was supported by dollar sales by the United States and other central banks through late October. In the final two months of the year, the dollar's value continued to fall amid declining U.S. interest rates without substantial further intervention by the Federal Reserve in the exchange markets.

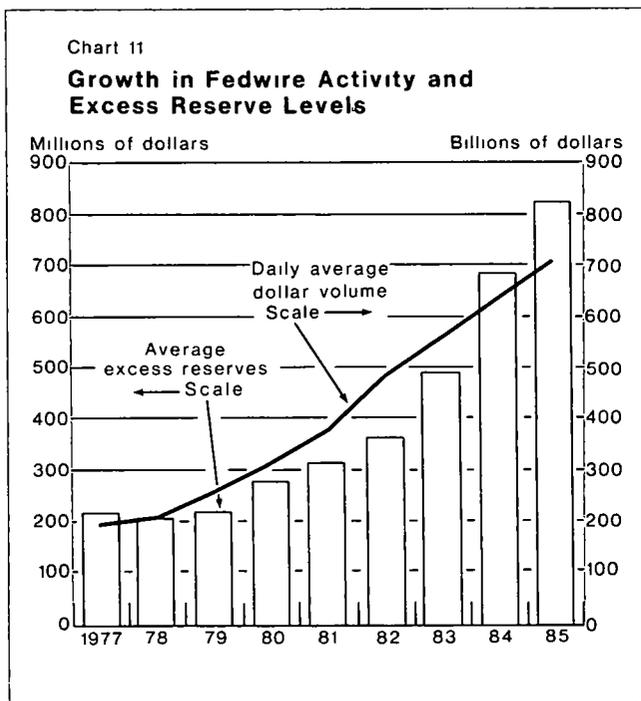
Policy Implementation

Techniques

The FOMC retained the approach to implementing policy developed in 1983 as modified in February 1984 with the reinstatement of contemporaneous reserve requirements (CRR). Reflecting the consensus reached at the meetings, the Manager for Domestic Operations translated the Committee's desired degree of reserve restraint into a level of nonborrowed reserves consistent with the volume of adjustment plus seasonal borrowing at the discount window associated with the specified reserve pressure. To construct a maintenance period objective for nonborrowed reserves, estimates were made of average required reserves for the period and the likely demand for excess reserves. From the sum of these, which is an estimate of the demand for total reserves, the Desk subtracted the borrowing assumption to get the nonborrowed reserve objective. By comparing that objective with the projected average supply of nonborrowed reserves for the two weeks, the Desk obtained an estimate of the open market operations needed to meet the objective. In forming its strategy, the Desk also had to take account of the distribution of required and nonborrowed reserves within the period, and recognize the potential for revisions to the various components as the period went along. Both Board and FRBNY staffs made estimates of required reserves, with primary Desk reliance placed on the Board staff estimates.

Under this approach, the path for nonborrowed reserves would change to reflect revisions to any of the path parameters. In practice, required reserve estimates for the period in progress were revised as new deposit data became available, usually about six times per two-week maintenance period. During the year, the average absolute revi-

⁸ Par amounts of long-term issues at time of sale as compiled by the Public Securities Association, and published in the *Federal Reserve Bulletin*



sion to the Board staff's required reserve estimate from the first to the last day of the maintenance period was \$235 million, compared with \$220 million in the CRR periods of 1984. Revisions after the period ended averaged \$70 million on an absolute basis, close to the 1984 experience

The regular assumption for excess reserves initially remained at \$600 million but it was raised by \$50 million in late March and by a like amount in early August. These adjustments were made in recognition of actual levels that prevailed during the year.

As in recent years, the average level of excess reserves continued to grow (Chart 11). A major factor in the rise from 1980 to 1984 is believed to have been the impact of reserve requirement changes mandated by the Monetary Control Act of 1980 (MCA) and the Garn-St Germain Act of 1982. The MCA lowered reserve requirements on member banks in a series of steps over the four years through 1984 and the Garn-St Germain Act eliminated requirements on the first \$20 million of reservable liabilities (indexed to \$24 million by 1985). Lower requirements left banks with less maneuvering room to assure a positive balance in their reserve account each night, and led some banks to hold a greater reserve cushion relative to requirements. Meanwhile, more nonmember institutions were opening reserve accounts at the Federal Reserve both to meet requirements, which were being phased in on an eight-year schedule, and to provide for check clearing. Many of the smaller institutions often found that they needed more reserves for clearing purposes

than they needed to meet requirements, especially since vault cash met the bulk of their requirements

With the phase-in of member bank reserve requirements completed, another large rise in excess reserves had not been expected in 1985. However, the volume of transactions clearing over the Fedwire continued to push upward in 1985 (Chart 11). It is likely that many banks found they needed an enlarged reserve cushion to avoid overdrawing their Federal Reserve accounts. The Federal Reserve's admonitions about overdrafts and its plan for reducing daylight overdrafts beginning in March 1986 may have added to bank caution in this area. Another factor may have been the decline in the level of interest rates during the year which lessened the opportunity cost of holding idle reserve balances, although the body of econometric evidence on the relationship between the level of the Federal funds rate and the level of excess reserves has been inconclusive. For the year, excess reserves averaged about \$830 million, compared with \$670 million in the CRR periods of 1984. Omitting the periods that contain the June and December quarter-end statement dates reduces the average for 1985 to \$795 million.

The Committee adjusted the borrowing assumption used in constructing the path nine times in 1985, as it had in 1984. The range of borrowing assumptions (\$300 million to \$500 million), however, was much narrower than in recent years. Most adjustments to the borrowing assumption were made to change the degree of reserve pressure on the banks. However, a couple of technical adjustments also were made.

The Desk adjusted its reserve provision when a number of privately-insured thrift institutions first in Ohio and then in Maryland turned to the discount window when faced with heavy deposit withdrawals. The crisis was precipitated by the failure in the beginning of March of E.S.M. Government Securities, Inc. (ESM), a non-primary dealer, and the report that Home State Savings Bank in Ohio had consequently suffered losses which threatened to exhaust the resources of its insurer, the Ohio Deposit Guarantee Fund. Fear spread quickly that the Fund would be inadequate and people questioned the safety of deposits at other thrifts insured by that Fund. To stabilize the situation, the Governor ordered temporary closings and then limitations on withdrawals at some of the thrifts while longer run solutions were worked out. These took the form of expeditious review of applications for Federal insurance and exceptions to interstate banking laws to encourage buyouts by stronger institutions. The problems in Ohio led depositors to reexamine private insurance arrangements in other states and made them particularly sensitive to reports of problems at a privately-insured thrift in Maryland in early May. Similar runs and limits on withdrawals followed in that state.

The technical effects on policy implementation arose since a number of the affected thrifts worked out arrange-

ments to borrow temporarily from the Federal Reserve. Because of the special nature of this borrowing it did not seem appropriate to treat it as adjustment credit for reserve path purposes. It was gradually shifted to the extended credit category after the prospects for the different institutions were examined. (Extended credit borrowing is treated as akin to nonborrowed reserves for reserve path purposes.) Hence, formal and informal adjustments were made to the reserve paths for a time in order to prevent the special borrowing from distorting the intended pressure on reserves. During late April through mid-May, there was a \$50 million increase in the borrowing assumption to make a partial allowance for the portion of special situation borrowing that was not in the extended credit category. By the latter part of May, most of the special borrowing had been classified as extended credit and the borrowing assumption was lowered again following the FOMC meeting on May 21.

The Desk's focus of attention is often on short-term variations in reserve availability that need to be offset if a desired degree of reserve pressure is to be maintained. However, most outright open market operations address the need to provide for secular growth and some of the more extended seasonal variations in required reserves and currency. From December 1984 to December 1985, the Desk provided reserves on balance to support Federal Reserve issuance of \$13.7 billion in currency, an increase of \$7.2 billion in required reserves, and a decline in extended credit borrowing of \$2.1 billion. The net increase in the System's Government securities portfolio of \$18.6 billion over the year to support these factors was supplemented by a \$2.2 billion rise in foreign currency holdings. The net increases in the portfolio and in reserve requirements far outstripped 1984's respective increases of \$7.2 billion and \$1.5 billion. Faster money growth in 1985 played a part in the increased portfolio expansion but so did a number of technical factors. The rise in extended credit borrowings in 1984 had reduced the need to add to the portfolio as had the final phase-down of member bank reserve requirements under MCA.

There were many short-term developments which changed reserve demands and supplies. For instance, the average absolute period-to-period changes in the levels of the Treasury balance at the Federal Reserve, currency, and required reserves were \$1.4 billion, \$1.2 billion, and \$0.7 billion, respectively. To offset the reserve impact of such swings, the Desk both purchased and sold securities in the market. Consequently, the gross changes in System holdings were much greater than the net changes. In 1985, outright purchases of Treasury securities totaled \$26.5 billion, \$17.1 billion in the market and the remainder from foreign official accounts. The System sold \$4.1 billion of securities from its portfolio, \$1.5 billion in the market and the balance to foreign accounts, and allowed \$3.5 billion of Treasury bills and \$162 million of agency issues to mature without replacement. Repurchase agreements on behalf of the Sys-

tem totaled \$156.4 billion while customer-related repurchase agreements amounted to \$116.7 billion; matched sale-purchase transactions arranged in the market totaled \$36.6 billion.

As in past years, estimates of factors affecting nonborrowed reserve availability other than open market operations were a source of considerable day-to-day uncertainty. In 1985, the overall forecast accuracy for these so-called market factors deteriorated modestly compared with the previous year. From the first day of the two-week period to the final figure, the average absolute revision was \$900 million;⁹ from the start of the second week it was \$425 million; and from the final day of the maintenance period it was \$95 million. The comparable figures for 1984 were \$810 million, \$320 million, and \$75 million, respectively. The Treasury balance appears to have played the biggest role in the deterioration. Most other factors had similar average absolute forecast errors in both years. The exceptions are discussed below.

Variations in the Treasury's balance at the Federal Reserve provided by far the largest single source of forecasting error—a \$760 million average absolute miss comparing the estimate on the first day to the actual average balance over the maintenance period. In 1984, the comparable figure had been \$565 million. Swings in the Treasury's balance at the Federal Reserve have become larger in recent years. The average absolute change over two-week intervals grew from \$1.0 billion in 1983, to \$1.35 billion in 1984, and to \$1.43 billion in 1985. Generally, greater variability implies greater forecasting difficulty. The Treasury tax and loan note option accounts had been developed in 1977 to reduce the variability in Treasury balances at the Federal Reserve.¹⁰ However, the swings in the total cash position have grown to the point where, after major tax dates, they far outstrip the capacity of the tax and loan accounts and force the Desk to make large transactions to offset the reserve impact of the swings so as to prevent wide gyrations in reserve availability. In 1985, the normal uncertainty surrounding the Treasury balance levels was exacerbated toward the end of the year by the Congressional impasse on debt ceiling legislation. The imbroglio forced the Desk to work with two separate forecasts of nonborrowed reserves on occasion—one based on passage of the legislation and a relatively normal Treasury balance, the other based on a continued stalemate

⁹ This figure does not treat the foreign repurchase pool as a market factor. The average absolute error in forecasts of the pool was \$325 million. However, these errors, on balance, offset other forecast misses so that the net effect of including these forecasts is a reduction of the overall error for nonborrowed reserves to \$765 million, slightly lower than the error on this basis in 1984.

¹⁰ The Treasury's previous use of commercial bank depositories to smooth cash balances at the Federal Reserve had fallen into disuse between 1974 and 1977 because of a prohibition on interest payments in an era of high rates. For more details on the system currently in use, see "Treasury Tax and Loan Accounts and Federal Reserve Open Market Operations," this *Quarterly Review* (Summer 1978), pages 41-46.

and a Treasury balance of zero. (The error estimates are calculated using the normal balance assumption.)

The job of forecasting borrowing under the extended credit program became easier during the year, as this factor became increasingly less volatile. Continental Illinois National Bank, the largest user of the program in 1984, gradually worked down its need to borrow under the program and did not borrow at all late in the year. The average absolute forecast error computed from the start of the maintenance period to the final figure decreased from \$540 million in 1984 to \$160 million in 1985. However, the improved accuracy of extended credit borrowing forecasts did not make the contribution to overall forecast accuracy that might have been expected since, in 1984, the large misses in this factor were almost completely offset by misses in forecasts of other factors. In 1985, such offsets were considerably smaller.

Meanwhile, foreign currency holdings rose sharply during the periods of active exchange market intervention early in the year and particularly in the fall following the September G-5 meeting. This was in contrast to 1984 when intervention was minimal. Since intervention is not forecast but is taken into account when transactions take place, forecast errors rose significantly in weeks when the heavy intervention occurred although they were modest for the year as a whole. By convention, foreign exchange transactions are effected on a skip-day delivery basis. Thus, there are no forecast errors for the delivery day because advance notice of the exact amount of the reserve impact is available. However, information is not available for subsequent days in the maintenance period.

Conducting open market operations

January to late May

Monetary policy over the first five months of the year generally accommodated the strong demands for reserves that emerged while making modest alterations in the degree of pressure on bank reserve positions. Initially, open market operations were directed toward achieving some further reduction of pressures on reserve positions but by the latter part of January, against the background of continued rapid growth in the monetary and credit aggregates and the relatively good performance of the economy, the easing process was ended. The Desk became slightly more cautious in its provision of reserves until mid-April when the reserve posture was relaxed very slightly. In the middle of May, the Board underscored the move to a more accommodative posture by approving a cut in the discount rate from 8 to 7½ percent. It did so against a background of relatively unchanged output in the industrial sector, reasonably well-contained price pressures, and appreciable slowing through April in the monetary aggregates.

At the December 1984 meeting, the FOMC had approved a directive calling for a reduction of reserve pressures. (Specifications from the FOMC directives including

guidelines for inter-meeting period adjustments to the reserve stance are presented in the table.) The allowance for seasonal and adjustment borrowing used in construction of the nonborrowed reserve paths initially was reduced to "up to \$300 million" from \$400 million. In mid-January, in light of the significantly stronger monetary and economic picture, the Desk pulled back from the extra tilt toward easier reserve conditions and anticipated a borrowing average of \$300 million. The usual allowance for excess reserves over the first part of the year was \$600 million but it was raised to \$750 million to accommodate year-end pressures over the period ending January 2, 1985, and lowered to \$550 million for the subsequent period in light of the opportunities for carryover provided by the \$1.2 billion of excess reserves actually held in the year-end maintenance period.

The year opened with a seasonal need to add reserves in the first period followed by needs to drain as the year-end bulge in money unwound. The Desk achieved the seasonal needs to drain reserves in late January and early February through outright transactions. On occasion, against a background of a firm Federal funds market, above path levels of borrowing, and a very strong dollar in the foreign exchange markets, the Desk let an indicated reserve surplus ride rather than intensify market perceptions of a firmer policy stance. In addition, the Desk faced some temporary needs to provide reserves. These needs arose in part because of higher-than-anticipated levels of the Treasury's balance at the Federal Reserve, lower levels of extended credit borrowing, and higher-than-anticipated demands for excess reserves, particularly at smaller institutions.

The seasonal need to drain reserves in late January and early February was accomplished with Treasury bill sales in the market totaling \$1.5 billion, redemptions of \$2.0 billion, and sales of Treasury securities to foreign accounts totaling \$1.5 billion. The net decline in System holdings was about \$5.0 billion. Temporary reserve needs were addressed by arranging a combination of overnight and term System repurchase agreements and customer-related repurchase agreements in the market. Federal funds traded mostly in a range of 8 to 8¼ percent once year-end pressures subsided. However, between late January and mid-February, funds traded mostly near 8½ percent or somewhat higher.

In accordance with the decision of the Committee, Desk operations in February and March sought to maintain reserve conditions similar to those that prevailed in the weeks immediately preceding the February 12-13 meeting. Consistent with the directive and recent prior levels of borrowing, the nonborrowed reserve paths were built with an allowance for \$350 million of adjustment plus seasonal borrowing. The allowance for \$600 million of excess reserves was retained.

The Desk faced sizable needs to add reserves during much of the February-to-March intermeeting period. Between February 14 and March 4 it purchased unusually large

amounts of Treasury bills and coupon issues being sold by official foreign accounts to finance the heavy intervention undertaken to halt the rise in the dollar. Total purchases from foreign accounts of \$2.8 billion, in combination with purchases of \$1.8 billion of Treasury bills in the market and temporary transactions, more than filled the estimated reserve needs. The Desk at times permitted indicated reserve surpluses to ride, taking into consideration the tone in the financial and foreign exchange markets and the level of bor-

rowing relative to the path objective. The Desk did offset part of the unwanted reserve injections by redeeming \$500 million of maturing bills at a Treasury bill auction, selling a total of \$550 million of bills to foreign accounts as opportunities arose, and arranging one round of matched sale-purchase transactions in the market. The net increase in the System's holdings over this intermeeting period was about \$3.7 billion. In early March, some privately-insured Ohio thrifts began to make use of the discount window after

Specifications from Directives of the Federal Open Market Committee and Related Information

Date of meeting	Short-term annualized rate of growth specified for period indicated			Initial central borrowing assumption for deriving nonborrowed reserve path*	Discount rate	Notes
	M1	M2	M3			
	(percent)			(millions of dollars)	(percent)	
12/17-12/18/84	7	9	9	300	8½ 8 on December 21†	The Committee sought to reduce reserve pressures consistent with the indicated monetary growth rates from November to March. It noted that greater reserve restraint might be acceptable in the event of substantially more rapid monetary growth and indications of significant strengthening of economic activity and inflationary pressures.
2/12-2/13/85	8	10 to 11	10 to 11	350	8	The Committee sought to maintain reserve conditions characteristic of recent weeks, noting that modest increases would be sought if the aggregates exceeded the objectives while lesser restraint would be acceptable in the event of substantially slower growth. In either case adjustments would be considered in the context of the growth in business activity and exchange market pressures.
3/26/85	6	7	8	400	8 7½ on May 17†	The Committee sought to maintain the existing degree of pressure on reserve positions noting that somewhat lesser/greater reserve restraint might be acceptable in the event of substantially slower/faster growth of the monetary aggregates. In either case such a change would be considered in the context of appraisals of the strength of the business expansion, progress against inflation, and conditions in domestic credit and foreign exchange markets.

* There is typically a fairly narrow range of borrowing levels considered to be consistent with the desired degree of reserve pressures.

† Announcement date.

the collapse of ESM which brought down one thrift and threatened the Ohio insurance fund. Because of the special nature of these borrowings, the Desk treated them as more in the nature of nonborrowed reserves.

Nonborrowed reserves were relatively close to path at

the conclusion of each maintenance period in the February-to-March intermeeting period but borrowing exceeded the planned level as demand for excess reserves proved to be greater than expected. Smaller banks continued to hold more excess reserves than seemed consistent with the path

Specifications from Directives of the Federal Open Market Committee and Related Information *(continued)*

Date of meeting	Short-term annualized rate of growth specified for period indicated			Initial central borrowing assumption for deriving nonborrowed reserve path*	Discount rate	Notes
	M1	M2	M3			
	(percent)			(millions of dollars)	(percent)	
5/21/85		March to June				
	6 or a little higher	7	8	350	7½	The Committee sought to maintain about the same degree of reserve pressure as in recent weeks, abstracting from special situation borrowing by thrift institutions. Somewhat lesser reserve restraint would be acceptable in the event of substantially slower growth in the monetary aggregates while somewhat greater restraint might be acceptable in the event of substantially higher growth. In either case such a change would be considered in the context of appraisals of the strength of the business expansion, progress against inflation, and conditions in domestic credit and foreign exchange markets.
		In light of their weakness in April M2 and M3 were expected to grow more slowly than indicated				
7/9-7/10/85 . . .		June to September				
	5 to 6	7½	7½	350	7½	The Committee sought to maintain the existing degree of reserve pressure. Somewhat lesser reserve restraint might be acceptable in the event of substantially slower growth of the monetary aggregates while somewhat greater restraint would be acceptable in the event of substantially higher growth. In either case such a change would be considered in the context of appraisals of the strength of the business expansion, progress against inflation, and conditions in domestic credit and foreign exchange markets.
8/20/85		June to September				
	8 to 9	8½	6½	425	7½	The Committee sought to maintain the degree of reserve pressure sought in recent weeks. Somewhat greater/lesser restraint would be acceptable in the event of substantially higher/slower growth in the monetary aggregates. In either case, such a change would be considered in the context of appraisals of the strength of the business expansion, developments in foreign exchange markets, progress against inflation, and conditions in domestic and international credit markets.
	M1 growth was expected to slow from its recent pace but the recent rapid growth suggested the June-to-September expansion might be at the indicated annual rate					

* There is typically a fairly narrow range of borrowing levels considered to be consistent with the desired degree of reserve pressures.

allowance. Average borrowing also reflected some day-to-day reserve shortfalls and a willingness on the Desk's part to tolerate somewhat higher borrowing while M1 data were showing substantial strength. Federal funds traded mostly in a range of $7\frac{3}{4}$ to $9\frac{1}{8}$ percent over the interval. The weekly

average funds rate crept up to range between $8\frac{3}{8}$ and $8\frac{3}{4}$ percent while the period averages rose from 8.49 to 8.57 percent (Chart 12)

At its meeting in late March, the Committee voted to maintain the existing degree of pressure on reserve posi-

Specifications from Directives of the Federal Open Market Committee and Related Information *(continued)*

Date of meeting	Short-term annualized rate of growth specified for period indicated			Initial central borrowing assumption for deriving nonborrowed reserve path*	Discount rate	Notes
	M1	M2	M3			
	(percent)			(millions of dollars)	(percent)	
10/1/85	September to December					
	6 to 7	6 to 7	6 to 7	500	$7\frac{1}{2}$	The Committee sought to maintain the degree of reserve pressure sought in recent weeks. Somewhat greater or lesser reserve restraint would be acceptable depending on the behavior of the aggregates, taking account of appraisals of the strength of the business expansion, developments in foreign exchange markets, progress against inflation, and conditions in domestic and international credit markets. It was understood that policy might be implemented with somewhat more flexibility than usual over the relatively short intermeeting period, given the uncertainties associated with particularly sensitive conditions in the foreign exchange and other markets.
	Slower growth of M1 would be acceptable in the context of satisfactory economic performance, given recent very rapid growth in M1					
11/4-11/5/85	September to December					
	6	6	6	450	$7\frac{1}{2}$	The Committee sought generally to maintain about the existing degree of reserve pressure. Somewhat greater reserve restraint might, and somewhat lesser reserve restraint would, be acceptable depending on behavior of the aggregates, taking account of appraisals of the strength of the business expansion, developments in foreign exchange markets, progress against inflation, and conditions in domestic and international credit markets. Given the sensitivity of economic and financial conditions and exchange market developments, it was understood that policy would be implemented with some added degree of day-to-day flexibility.
	Slower growth for M1 would be acceptable in the context of satisfactory economic performance given the very rapid M1 growth over the summer					
12/16-12/17/85	November to March					
	7 to 9	6 to 8	6 to 8	350	$7\frac{1}{2}$	The Committee sought to decrease somewhat the existing degree of pressure on reserve positions. Somewhat greater reserve restraint might, and somewhat lesser reserve restraint would, be acceptable depending on behavior of the aggregates, the strength of the business expansion, developments in foreign exchange markets, progress against inflation, and conditions in domestic and international credit markets.
	It was noted that the behavior of M1 continued to be subject to unusual uncertainty					

* There is typically a fairly narrow range of borrowing levels considered to be consistent with the desired degree of reserve pressures

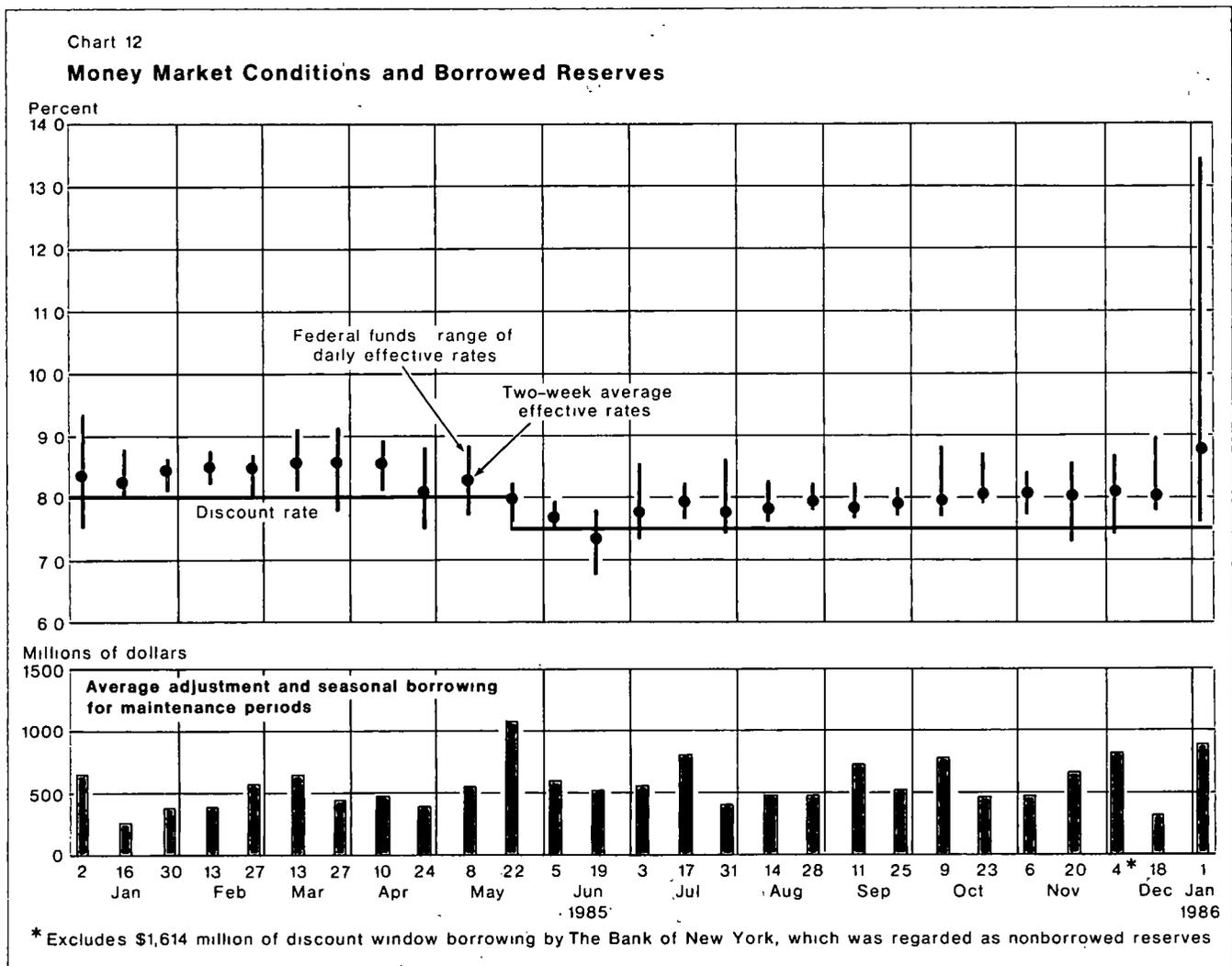
tions. The path allowance for borrowing was raised by \$50 million in light of recent experience. The nonborrowed reserve paths in the periods following the meeting incorporated \$400 million of adjustment and seasonal borrowing, the middle of the \$350 to \$450 million range discussed by the Committee. The path incorporated a \$650 million allowance for excess reserves, a \$50 million increase made in light of recent experience.

The observed levels of borrowing in April and May continued to be distorted by special situation borrowing at some privately-insured thrift institutions in Ohio and Maryland. At the start of the May 8 maintenance period, the borrowing level used in path construction was raised \$50 million to \$450 million, making an additional allowance for this borrowing which rose to a little over \$100 million in early May from around \$50 million when the Committee met in March. Special borrowing peaked at \$300 million in the period ended May 22. That portion in excess of the allowance was treated as akin to nonborrowed reserves. Late in the May 22 period,

most of it was classified as extended credit borrowing which is automatically treated as nonborrowed reserves. Thus, the distortions were ended and the allowance for adjustment plus seasonal borrowing was lowered accordingly.

The Desk faced a large seasonal need to supply reserves in April and early May as income tax receipts filled the Treasury tax and loan accounts and spilled over into the Treasury's balance at the Federal Reserve. The Desk built up its outright securities holdings in April to offset the bulk of the estimated drain from the rise in Treasury balances. The size and timing of the moves in the Treasury's cash position proved difficult to project. At the start of each of the two maintenance periods in April, projections indicated that the period's remaining reserve needs would be concentrated in the second week. In each case the money market was initially to the firm side of expectations, prompting the Desk to add enough reserves to meet part of the need early in the period.

In the second week of the late April period, revisions to



required reserves, the Treasury's balance, and extended credit borrowing altered the reserve outlook considerably and indicated a moderate surplus. The Desk executed temporary transactions in the market to drain reserves, paring the projected surplus to well within the range of forecast error. Nonborrowed reserves ended the period substantially over path nonetheless due to a lower-than-expected Treasury balance on the final day.

The Treasury's balance at the Federal Reserve was expected to decline sharply in early May. The runoff occurred later than expected, however, leaving a substantial reserve deficiency in the beginning of May. At this time, upward pressure intensified in the funds market. Repeated actions were undertaken to meet the reserve shortfall which was enlarged by downward revisions to the supply from other factors. Later, when the dimensions and timing of the drop in the Treasury balance became clearer, reserves were drained through the redemption of Treasury bills at weekly auctions and the sale of a small amount of Treasury bills to foreign accounts.

Over the March-to-May intermeeting period, the System's outright holdings of securities rose by nearly \$6.5 billion. An increase of almost \$7.7 billion through the period of the steep ascent of the Treasury's balance was accomplished through two large bill purchases in the market totaling about \$5.3 billion, the purchase of \$1.3 billion of coupon-bearing issues in the market, and purchases of about \$1.1 billion of bills from foreign accounts. At the final stages of the huge increase in the Treasury balances, temporary transactions were also used, including \$11.75 billion of pre-announced overnight and four-day fixed-term System repurchase agreements on May 2, when the Treasury balance at the Federal Reserve peaked at \$19.9 billion.

The Federal funds rate averaged about $8\frac{1}{2}$ percent over the first part of April and eased to about $8\frac{1}{8}$ percent by early May. The variability in reserves around the April 15 tax date contributed to fairly wide variations in the funds rate. After the discount rate reduction in mid-May, Federal funds traded mostly between $7\frac{5}{8}$ and $7\frac{3}{4}$ percent.

Late May to late September

Over the period from late May to late September, open market operations initially were directed toward maintaining the degree of reserve pressure that had developed before the May meeting. With money appearing to have been in line with or to the weak side of intended paths through April, the May directive had expressed a leaning toward lesser restraint. However, the growth in the aggregates and the economy had picked up by the time of the July meeting, so the preferred direction of possible changes was shifted. Slightly greater reserve restraint was sought beginning in early August against a background of strong growth in M1 and M2, a weaker dollar, and sustained economic activity. This modest shift was affirmed at the August meeting, as the

Committee voted to maintain the somewhat more cautious approach to reserve provision which had been adopted in the weeks just prior to the meeting, and voiced an even-handed acceptance of further adjustments in either direction. Another slight firming move was encouraged in early September as further data pointed to continued strength in the monetary aggregates, especially M1.

Following the May FOMC meeting, the nonborrowed reserve paths were constructed to incorporate \$350 million of adjustment plus seasonal borrowing excluding special situation thrift borrowing. The borrowing allowance was close to the amount of borrowing in the preceding intermeeting period after taking out the special situation borrowing.

The borrowing assumption was raised to \$400 million at the start of the maintenance period ended August 14 to take account of the recent experience with borrowing and the strong monetary growth, a weaker dollar, and moderate economic growth. The adjustment was meant to impose a very slightly firmer degree of reserve restraint on bank positions. At the same time, the assumption for excess reserves was raised by \$50 million to \$700 million in recognition of the higher levels that had prevailed over the year, for which the Desk had been making an informal allowance as the stronger demands emerged. During most maintenance periods between late May and mid-August, the Federal funds rate averaged between $7\frac{5}{8}$ and $7\frac{7}{8}$ percent but rose above 8 percent for a few days around the quarter-end and in early July, when seasonal influences and sharply rising Treasury balances temporarily increased pressures on reserves.

Following the August FOMC meeting, the borrowing assumption was raised to \$425 million, the middle of the \$350 to \$500 million range discussed by the Committee at that meeting. The higher level of borrowing used in construction of the nonborrowed reserve paths was expected to maintain the slightly firmer degree of reserve restraint that had characterized the weeks preceding the meeting. In early September, the borrowing allowance was raised to \$500 million, a decision based on indications of strength in economic activity and rapid monetary growth, particularly in the narrowest money measure. Federal funds traded mostly in a range of $7\frac{3}{4}$ to 8 percent following the adjustments in the degree of reserve restraint.

Reserve management during the late May to late September period was complicated by considerable variability in the Treasury balances at the Federal Reserve Banks, and difficulties in projecting the balances. In mid-June, a string of lower-than-anticipated Treasury balances, which defied normal probabilities, contributed to a temporary accumulation of excess reserves and funds market trading below 7 percent. In early July, the Treasury balance surged on one day from \$2.0 billion to \$10.2 billion, draining \$8.2 billion of reserves when issues from the quarter-end financing settled and the tax and loan note option accounts

were filled to capacity with June tax receipts. The balance fell back to \$3.7 billion the next day when social security payments were made.

Nonborrowed reserves generally finished the maintenance periods close to the planned levels, with one significant overshoot and a few shortfalls. However, the average levels of borrowing (excluding special situation thrift borrowing) persistently exceeded the path assumptions. Much of the unintended borrowing resulted from wire problems, unexpected late-day outflows, the overlapping of Treasury settlements and seasonal demands, or enlarged excess reserve demands at smaller institutions.

The borrowing overshoots were greatest between late May and mid-July and again around Labor Day, in periods when reserve management was complicated by wire problems and pressures associated with statement dates and holidays. Settlement day borrowing surged in the July 3 maintenance period when the confluence of Treasury settlements and seasonal demands boosted the demand for excess reserves, even though some rough allowance had been made for greater demands. (Excess reserves averaged \$1.2 billion for the period, well above expectations.) The borrowing automatically carried over the July 4 holiday, the first day of the next period. In that period, the July 3 borrowing was treated as nonborrowed reserves but subsequent borrowing still ran high. The Desk left reserves below the path level in order to avoid creating the incorrect impression of an easier policy tilt. Borrowing also averaged substantially over path in the September 11 period as a result of overlapping demands associated with the Labor Day holiday, social security payments, and computer and bank reserve management problems.

During September, as the Desk acted to bring about the slightly greater degree of reserve restraint, it sometimes deferred meeting a projected need when money market conditions were quite soft. In the second week of the September 11 period, excesses that had accumulated in the first week as a result of heavy borrowing were beginning to show through to the money market; the Desk, therefore, held back on providing reserves until the need was more evident in the funds market. In the next period, the Desk again was faced with a soft money market but a projected reserve need, in part related to high Treasury balances at the Federal Reserve as quarterly tax payments filled banks' Treasury tax and loan accounts to capacity. The seeming contradiction suggested that there might be more reserves than projected, or that some banks might have underestimated their required reserves. The period included the phaseup of reserve requirements at nonmember institutions in accordance with the timetable of the MCA, and incoming reserve data suggested that nonmember institutions, which normally hold surpluses, were deficient in reserves. In view of the uncertainties, the Desk proceeded cautiously and did not meet the entire need. Over the course of the final day of the peri-

od, the nonmember institutions offset their aggregate deficit reserve position but their average level of excess reserves ended well below normal.

Late September to year-end

Over the latter part of the autumn and early winter, monetary policy gradually eased in response to changes in the outlook for economic and monetary growth. Late in September, following the G-5 accord, the behavior of the dollar in foreign exchange market trading assumed a somewhat greater role in Federal Reserve policy consideration. Under the Committee's direction, in response to indications of more sluggish growth in the broader aggregates and only a modest economic expansion, the Desk, in November, suspended the slight increase in reserve pressure that had been introduced in September. In mid-December, it became somewhat more accommodative in its provision of reserves. The weekly effective average Federal funds rate was mostly within a $7\frac{7}{8}$ to $8\frac{1}{8}$ percent range but trading on occasion exhibited considerable volatility associated with extraordinary conditions described below.

A number of unusual developments greatly complicated reserve management late in the year. Delays in raising the debt ceiling, and the series of stopgap measures that were taken while the Congress debated the Gramm-Rudman-Hollings amendment attached to the debt ceiling bill, affected forecasts of the Treasury's balances. Hence, the reserve outlook was affected intermittently from late September when the Treasury first postponed some auctions until almost the middle of December when the permanent increase in the debt ceiling was finally approved. The other major developments were limited to one reserve maintenance period each. The first was a hurricane which battered the East Coast on the last Friday of September, forcing limitations on securities and banking operations. The second was a massive computer failure at a major clearing bank in late November, which forced it to borrow an unprecedented amount from the discount window and left reserves very unevenly distributed both among institutions and over the reserve maintenance period.

At the conclusion of the October 1 FOMC meeting, the Committee issued a directive that called for maintaining the degree of reserve pressure sought in recent weeks. It emphasized the role of the dollar's value in the foreign exchange markets as a factor to consider in evaluating possible adjustments to reserve pressure.

Between late September and late October, the System purchased a total of \$1.6 billion of foreign currency in connection with the G-5 agreement. (This was half of the U.S. intervention. The other half was financed by the Treasury and did not generally impact reserves since the calls on tax and loan accounts were stepped up to cover the cash needs.) Daily open market operations were particularly sensitive to conditions in the foreign exchange markets late in

October when the dollar reversed earlier declines and strengthened sharply.

Reserve management in the October 9 period was complicated by the effects of Hurricane Gloria, which hit on the first Friday of the period, on reserve factors and deposit levels. The resultant heavy weekend borrowing was treated for reserve path purposes as akin to nonborrowed reserves. The weakening of the dollar in foreign exchange markets also was a factor in reserve maintenance decisions.

Later that maintenance period, the Treasury reached the first of several crisis points when the cash drains from social security and other pension fund payments near the start of the month could not be replaced with proceeds from auctions of 4-, 7-, and 20-year issues which typically would have occurred in late September. It inadvertently ran a \$113 million overdraft of its balance at the Federal Reserve on October 8. The deficiency was extinguished the following day out of funds received by the Treasury that day. At that point, the Treasury gained some room to sell debt to the public when it began using almost \$15 billion of untapped borrowing authority in the Federal Financing Bank (FFB). It issued FFB debt to a Treasury trust fund enabling it to retire a like amount of nonmarketable Treasury debt thus making room for marketable debt sales under the old ceiling. On October 9, the Treasury sold for same-day settlement \$5 billion of cash management bills. The Desk arranged customer repurchase agreements that day to ease settlement problems and meet remaining estimated reserve needs. Borrowing, nevertheless, averaged well above the path level as a result of the unusual strains.

Economic activity at the time of the November meeting suggested a more sluggish performance than had been indicated earlier. The Committee elected to maintain about the existing degree of reserve restraint but indicated a leaning toward somewhat lesser rather than greater restraint depending on monetary, economic, and foreign exchange considerations. In accord with the Committee's decision, the borrowing assumption used in construction of the nonborrowed reserve path was lowered to \$450 million, about in line with recent experience.

Disruptions in reserve management as a result of Congressional delay in raising the debt ceiling again came to dominate in the November 20 maintenance period. The FFB borrowing authority was running out, leaving no room to proceed with the mid-quarter refunding, which would have meant default on November 15 on maturing debt and coupon payments. In the first part of the period, the Desk worked with two sets of reserve projections, one which assumed a zero Treasury balance at the Federal Reserve beginning November 15 if no debt legislation were approved and the other which assumed Congress would pass debt legislation and the Treasury's balance would be restored to a more normal level of around \$3 billion. The alternative projections of the supply of nonborrowed reserves differed

by about \$1.3 billion on a two-week average basis.

Congress did approve a temporary increase to the debt ceiling in time for the Treasury to auction for same-day settlement \$22 billion of cash management bills on November 15. To avoid excess pressure on the funds market that day, the Desk made an early announcement of its intention to arrange System repurchase agreements in the market at noon, after the auction results would be known. This left the Desk with a need to drain reserves in the final days of the period although its ability to do so was constrained by the daily minimum clearing needs of the banking system. The reserve settlement day was also the settlement day for a massive volume of mortgage-backed securities. Transactions were complicated by operational difficulties at Federal Reserve and money center commercial banks that caused borrowing to surge, raising the average for the period well above the path assumption.

The debt ceiling problems temporarily moved to the back burner in the next period when, on the first day of the period, a massive securities clearing failure at the Bank of New York (BONY) caused major complications in reserve management. BONY suffered a computer failure which left it unable to send securities or receive payment. It did, however, receive securities and make payments, leaving it with a huge overdraft. When BONY's problems could not be resolved on the evening of November 21, it borrowed an unprecedented \$22.6 billion at the discount window. (It still ended with an unplanned \$1 billion overdraft.) This added an average of \$1.6 billion to the supply of reserves for the period which was considered "nonborrowed" reserves for path purposes. More critically, it resulted in extremely large, poorly distributed reserve excesses at other banks that had been waiting to receive securities and make payments. Some institutions borrowed and others basked in excesses.

Even with the reserves provided by BONY's borrowing, there was an average shortage for the period. However, the weight of large cumulative excesses early in the period resulted in noticeably easier money market conditions. At the same time, there was downward pressure on the dollar in the foreign exchange markets related to expectations of a cut in the discount rate. Against this background, the Desk absorbed reserves about midway through the period to reduce the large cumulative excesses, and provided reserves later. A problem on settlement night with the Clearing House Interbank Payments System (CHIPS) left a number of large banks short of reserves too late to obtain reserves from the many smaller institutions that held them, and borrowing bulged, raising the average, excluding BONY's borrowing, to slightly over \$800 million. Excess reserves averaged about \$1.1 billion, in part due to the settlement date problems but primarily because some institutions that had large excess reserve holdings early in the period could not work them off without overdrawing their accounts. Late in the period, the Treasury once more avoided default on early December

pension and social security benefits by disinvesting certain trust funds and making room for the debt sales needed to finance the payments.

In the maintenance period ended December 18, debt ceiling considerations were again in the spotlight, as the prospects of a default on December 12 on maturing three- and six-month Treasury bills once more introduced the possibility of two scenarios for the Treasury balance in the latter part of the reserve period. Once the debt ceiling legislation was passed, the Desk stepped in to ease the prospective strains of financing a same-day auction and settlement of three- and six-month bills by arranging customer repurchase agreements, inviting propositions after the auction results were known.

The buildup of the seasonal need to supply reserves was somewhat delayed by the System's purchase of foreign currencies in October, the lower-than-normal levels of the Treasury's balance over the period of pending debt ceiling legislation, and the BONY borrowing. By late November, however, the need had become pronounced. Recurring revisions to currency in circulation, the volume of foreign overnight investment orders, and required reserves increased the need. During November and December, the Desk purchased about \$7.2 billion of Treasury securities on an outright basis, including about \$3.3 billion of bills and \$1.6 billion of coupon issues in the market, and \$2.4 billion of bills from foreign accounts. Temporary transactions were also used to provide reserves.

At the conclusion of the December 16-17 FOMC meeting, the Committee issued a directive that called for a de-

crease in the degree of pressure on bank reserve positions. The outlook for M1 growth continued to be subject to unusual uncertainty and its short-run target was increased somewhat. The Desk used a \$350 million borrowing assumption in path construction.

After the December FOMC meeting, the Desk was particularly quick to meet projected needs, in accord with the Committee's decisions. In the final period of the year, despite repeated reserve injections, reserve needs persisted due to revisions to required reserves and market factors, including very high Treasury balances at the Federal Reserve. The Treasury balance was enlarged beyond normal levels by heavy sales of nonmarketable debt to tax-exempt authorities which were engaged in large sales in the market to get ahead of proposed restrictive tax legislation. Borrowing was heavy Christmas Eve and the two days before the New Year's holiday, in part because nonborrowed reserves fell short of projections and one Federal Reserve Bank experienced wire problems on New Year's Eve, but also because of very large demands for excess reserves, particularly at smaller institutions. Although the allowance for excess reserves was raised to \$1.0 billion to accommodate year-end demands, excess reserves averaged \$1.3 billion for the period. Funds market trading was within a wide range over the maintenance period; the 8.78 percent average effective Federal funds rate received a boost at year-end from the high rates paid by foreign agency banks. Dealer needs to finance heavy inventories of municipal debt also contributed to pressures in the funds market at year-end.