MONETARY POLICY
AND
OPEN MARKET OPERATIONS
DURING 1989

A Report prepared for the Federal Open Market Committee by the Open Market Group of the Federal Reserve Bank of New York, March 1990

THE 1989 ANNUAL REPORT OF THE SYSTEM OPEN MARKET ACCOUNT MANAGEMENT

Monetary Policy and Open Market Operations in 1989

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LONG-TERM INTEREST RATES

Yields are weekly values of Moody's indexes of Aaa-rated corporate and municipal bond yields. The bonds used to derive the indexes have average maturities of 20 years. The two-year Treasury note and 30-year Treasury bond yields are constant maturity values.

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Three-month Treasury bill rates are bank discount rates in the secondary market (Wednesday weekly averages). Federal Reserve discount rates are those in effect on Wednesdays. Commercial paper rates are weekly averages of 90-day rates.

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The bottom panel presents the spreads between Moody's Aaa-rated corporate bond index and the ten-year Treasury constant maturities index, and those between Moody's Aaa-rated municipal bond index and the ten-year Treasury constant maturities index (Wednesday weekly averages).

Chart 5: M2: LEVELS AND TARGETS

M2 consists of M1, overnight (and continuing contract) repurchase agreements (RPs) issued by all depository institutions and overnight Eurodollars issued to U.S. residents by foreign branches of U.S. banks worldwide, money market deposit accounts, savings and small denomination time deposits, and balances in both taxable and tax-exempt general purpose and broker/dealer money market mutual funds. Excludes individual

retirement account and Keogh balances at depository institutions and money market funds. Also excludes all balances held by U.S. commercial banks, money market funds (general purpose and broker/dealer), foreign governments and commercial banks, and the U.S. Government. The chart is based on data as of March 15, 1990. The target ranges are for Q4 1987 to Q4 1988 and Q4 1988 to Q4 1989.

M3: LEVELS AND TARGETS

M3 consists of M2, large-denomination time deposits (in amounts of $100,000 or more), term RP liabilities issued by all depository institutions, term Eurodollars held by U.S. residents at foreign branches of U.S. banks worldwide and at all banking offices in the United Kingdom and Canada, and balances in both taxable and tax-exempt institution-only money market mutual funds. Excludes amounts held by depository institutions, the U.S. Government, money market funds, and foreign banks and official institutions. Also subtracted is the estimated amount of overnight RPs and Eurodollars held by institution-only money market mutual funds. The chart is based on data as of March 15, 1990. The target ranges are for Q4 1987 to Q4 1988 and Q4 1988 to Q4 1989.

TOTAL DOMESTIC NONFINANCIAL DEBT: LEVELS AND MONITORING RANGES

Total domestic nonfinancial debt is a measure of the outstanding credit market debt (as defined in the Flow of Funds Accounts, Board of Governors of the Federal Reserve System) of domestic nonfinancial borrowers--Federal and state and local governments, and private nonfinancial sectors. The chart is based on data as of March 15, 1990. The monitoring ranges are for Q4 1987 to Q4 1988 and Q4 1988 to Q4 1989.

M1: LEVELS AND GROWTH RATES

M1 consists of currency outside the U.S. Treasury, Federal Reserve Banks, and the vaults of depository institutions; travelers checks of nonbank issuers; demand deposits at all commercial banks other than those due to depository institutions, the U.S. Government, and foreign banks and official institutions, less cash items in the process of collection and Federal Reserve float; and other checkable deposits, consisting of negotiable order of withdrawal (NOW) and automatic transfer service (ATS) accounts at depository institutions, credit share draft accounts and demand deposits at thrift institutions. The chart is based on data as of March 15, 1990.

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Growth of velocity from four quarters earlier. Velocity equals nominal Gross National Product divided by the quarterly average level of the respective aggregate.

Chart 7: BORROWING AND FEDERAL FUNDS-DISCOUNT RATE SPREAD

Adjustment and seasonal borrowing values are not seasonally adjusted, maintenance-period averages. Federal funds rates are maintenance-period averages, while the discount rates are those in effect at the end of the period.

Chart 8: SEASONAL BORROWING

Seasonal borrowing values are not seasonally adjusted, maintenance-period averages.

MONETARY POLICY AND OPEN MARKET OPERATIONS DURING 1989

I. Overview

In the early months of 1989, the Federal Open Market Committee (FOMC) continued to pursue a gradual firming of reserve pressures as it had during most of 1988, but in the spring, signs of a slowdown in economic activity led the Committee to move gradually to a more accommodative posture. Following its December 1988 meeting, the Committee directed the Desk to institute a two-stage move to firm reserve pressures in light of evidence indicating that the economy was expanding at a vigorous pace and that inflation might intensify. The initial move was implemented on December 15, while the second step was made in early January. As incoming data signaled mounting inflationary pressures, another tightening move was made in February. Moreover, the Board of Governors approved a 1/2 percentage point increase in the discount rate, to 7 percent, on February 24.

By May, however, the FOMC saw the risks between higher inflation and a substantial shortfall in economic growth as more evenly weighted. Then, in early June, with new evidence pointing to a slowdown in economic activity and with some indicators suggesting that a gradual reduction of inflation was likely, the FOMC began moving to a more accommodative reserve posture. In July, additional data reinforced perceptions of a moderation in economic activity, and reserve pressures were reduced twice in that month. As the economy showed a continuing tendency toward weakness over the final months of the year, reserve pressures were eased further in October, November, and December.

While the longest recorded economic expansion in U.S. peacetime history continued in 1989, the pace of that expansion slowed considerably. Real GNP advanced 2.5 percent (Q4 over Q4) or 2.0 percent after adjusting

for the impact of the 1988 drought. Consumer spending and investment in producers' durable equipment accounted for most of the expansion in real GNP, although the growth of consumer spending was more subdued than in the previous year. The reduced pace of economic activity was reflected in smaller job gains in 1989. Nonetheless, the civilian unemployment rate in the fourth quarter was unchanged from its year-earlier level. Meanwhile, most broad inflation measures advanced at roughly the same pace as in 1988, although pressures abated somewhat in the second half of the year.

Yields on investment-grade fixed-income securities fell in 1989. They rose over the first three months of the year in response to strength in economic and inflation indicators. Yields fell considerably from late March to early August as the market sensed a softening economy and a Federal Reserve shift to accommodation. Over the balance of the year, yields backed and filled but showed no trend. Yields backed up in August and September in response to a sense that economic activity was stronger than had been anticipated earlier and to uncertainties about how much further the Fed would ease. Later, yields fell a bit in light of data that suggested weaker economic activity and perceptions that the Federal Reserve would continue to ease its policy stance.

In contrast, yields on below-investment-grade bonds, known as "high-yield" or "junk" bonds, rose sharply. This sector was buffeted by large defaults and bankruptcy threats, especially during the latter part of the year. These events focused attention on the risks associated with highly leveraged companies, causing spreads to widen between their debt and investment-quality instruments. Trading and issuance thinned, and investors became increasingly sensitive to the characteristics of specific issues.

Credit worries also remained a problem in the thrift industry where large losses and insolvencies at a number of institutions continued to place

strains on the financial system. The need to finance the restructuring and rescue operations was addressed by legislation passed in August. The Financial Institutions Reform Recovery and Enforcement Act of 1989 provided for $18.8 billion of "on-budget" Federal financing in fiscal 1989. In addition, the Act established a new agency, the Resolution Funding Corporation (REFCORP), with the authority to borrow $30 billion before October 1991. REFCORP auctioned its first offering of bonds late in the year.

Money and debt growth decelerated in 1989. M2 advanced at a 4.6 percent rate (Q4 over Q4) and finished the year well within its target range, while M3 expanded at a 3.2 percent rate and ended just below the lower bound of its growth cone.[1/] For the year as a whole, M1 grew a meager 0.6 percent. Total nonfinancial debt expanded at an 8.0 percent rate, which placed it below the midpoint of its monitoring range. M2 and M3 grew slowly over the first half of the year, while M1 fell.[2/] In contrast, M1 and M2 growth accelerated sharply over the second half of the year as the opportunity cost of holding money fell. M3 growth initially picked up a bit, along with the narrower measures, but then weakened when managed liabilities at thrifts contracted as part of the restructuring of the thrift industry.

1/ All money and debt growth rates cited in this report are based on the data available on March 15, 1990. The money data incorporate the February 1990 benchmark and seasonal revisions, as well as subsequent revisions, and the redefinition of M2. The redefinition incorporated thrift overnight repurchase agreements into M2. Over the four quarters of 1989, these revisions increased the growth rates of M1 and M2 by 0.1 percentage point and lowered the growth rate of M3 by 0.1 percentage point.

2/ February and March 1990 revisions elevated money growth in the first half of the year (H1) and lowered growth in the second (H2). The growth of M2 was raised by 0.5 percentage point in H1 and lowered by 0.3 percentage point in H2. M3 growth was increased by 0.5 percentage point in H1 and decreased by 0.5 percentage point in H2. M1 fell by 0.7 percentage point less than originally reported in H1, and its growth was 0.6 percentage point lower in H2.

The Trading Desk's reserve management procedures, which depend upon a reasonably predictable relationship between borrowing and the spread between the Federal funds rate and the discount rate, were again complicated by shifts--mostly downward--in the willingness of depository institutions to borrow from the discount window under the adjustment credit program. As a result, the relationship between the amount of borrowing and the degree of money market firmness was somewhat uncertain. The Desk, therefore, pursued the borrowing objective flexibly in order to achieve the degree of restraint desired by the FOMC. With adjustment credit running light in 1989, the behavior of seasonal borrowing dominated the movements of adjustment plus seasonal borrowing. To accommodate the tendency of seasonal borrowing to be high in the summer and low in the winter, a number of technical adjustments were made to the borrowing allowance during the year in order to leave reserve pressures unaffected.

Record purchases of foreign currency by U.S. monetary authorities altered the nature and timing of the Desk's open market operations in 1989. As a consequence, the growth of the System's holdings of foreign currency provided more than enough reserves to cover the drain on reserves from the rise in currency--an increase that was in itself below average. Furthermore, in the face of weakness in reservable deposits that held down required reserves, nonborrowed reserves were permitted to grow only modestly. The Desk reduced the size of the System portfolio (on a year-over-year basis) for the first time since 1957. This reduction was accomplished through redemptions of maturing Treasury securities and with sales of Treasury issues in the market and to foreign customer accounts.

II. The Economy

The economy expanded less vigorously in its seventh consecutive year of growth. Real GNP grew 2.5 percent in 1989, down from 3.4 percent in

the preceding year.[1/] Excluding the effects of the 1988 drought, the U.S. Department of Commerce estimates that real GNP growth was 2.0 percent in 1989, about half of the 1988 drought-adjusted rate of expansion. Slower growth in consumer spending and exports as well as a sharp drop in residential construction accounted for much of the deceleration in economic activity. Nonfarm business inventory accumulation fell for a second consecutive year in 1989, but not as much as in 1988. Real final sales increased 2.4 percent, compared with 4.4 percent in 1988.[2/] Employment gains in 1989 were also below the previous year's pace; nonfarm payroll employment was up 2.4 percent, compared with 3.2 percent in 1988. The civilian unemployment rate was mostly steady during the year and stood at 5.3 percent in the final quarter of 1989, unchanged from its year-earlier level.

Over the year as a whole, growth was primarily sustained by consumer and investment expenditures. Consumer spending grew 2.5 percent over the four quarters of 1989, considerably below the nearly 4 percent advance of 1988. Most of this slippage reflected some retrenchment in purchases of motor vehicles.[3/] Supporting the growth in consumer spending over the year was a 3.6 percent pickup in real disposable income, which was only moderately below its 1988 rate of increase. Heavy purchases of computer-related equipment led to another year of healthy growth of business

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1/ All references to annual growth rates in this section are on a fourth quarter over fourth quarter basis unless specified otherwise. Quarterly growth rates are seasonally adjusted annualized changes from the preceding quarter.

2/ These increases are not drought-adjusted. The slowdown in final sales growth would be even more pronounced if the impact of the drought were excluded.

3/ In addition, growth in 1988 had been boosted by a low level of consumer outlays at the end of 1987. Late 1987 consumption was dampened by the expiration of auto sales incentives and by some consumer caution in the aftermath of the October 1987 stock market break.

investment in producers' durable equipment. In contrast, housing construction slid under the weight of weak real estate markets, and nonresidential construction remained sluggish in the face of high vacancy rates.

Economic activity showed signs of losing strength as the year progressed. Real fixed investment in the second half of the year was nearly unchanged from its average level in the first half. Following strong gains in the first quarter, real net exports only improved a bit, on balance, over the remainder of the year, as slower export growth was accompanied by an upswing in imports. In the final quarter, total GNP growth slowed to a 0.9 percent annual rate, with much of the increased output winding up in business inventories. Meanwhile, employment growth declined successively in each quarter from a peak rate of over 3 percent in the first quarter to under 2 percent in the fourth quarter of 1989.

The slowing pace of economic activity was most evident in the manufacturing sector. Manufacturing employment edged a bit lower in 1989, after having risen almost 2 percent in 1988. Sizable manufacturing job losses occurred in each of the last four months of 1989. These losses stemmed in part from the slackening pace of industrial production over the second half of the year. Meanwhile, the capacity utilization rate also declined modestly over the final two quarters. It began the year at its 1989 high of 84.3 percent--the peak level for the current expansion--and closed the year at 83.3 percent.

By most broad measures, prices in 1989 continued to rise at roughly the pace set in 1988. Led by surging food and energy costs, price pressures appeared to be mounting in the first half of the year, but inflation subsided later when energy costs declined. The consumer price index rose 4.6 percent in 1989 (December over December) and 4.4 percent excluding its volatile food and energy components, roughly the same rates of increase

recorded in 1988. The fixed-weighted price index advanced 4.1 percent, down from 4.5 percent in 1988. Price pressures were somewhat stronger at the early stages of production, as the producer price index (PPI) increased 4.8 percent, up sharply from 4.0 percent in 1988, largely reflecting higher food and energy costs. (Excluding these costs, the PPI advanced at about its 1988 pace.) Wage pressures showed no signs of abating. The employment cost index in December 1989 was 4.8 percent above its year-earlier level, virtually the same rate of increase as in 1988, indicating little change in underlying wage pressures. Indeed, unit labor costs rose 5 percent in 1989, compared with 3 percent in the previous year, reflecting higher compensation costs and a decline in productivity growth.

Solid gains were made in reducing the merchandise trade deficit early in 1989, but progress stalled around midyear. Measured in current dollars, the average annual trade deficit for the year narrowed by $16 billion to $111 billion; the real trade deficit diminished by a similar amount and averaged $107 billion. By both measures, the reduction in the trade deficit was about half the improvement achieved in 1988. A strong export performance was again registered in the first half of 1989, extending the pattern set in the preceding two years, but growth decelerated markedly in the final two quarters of the year. Meanwhile, import growth continued at its 1988 rate. The slowing pace of improvement in the trade balance largely reflected the waning impact of the dollar's steep 1985-1987 decline. In 1989, the trade-weighted value of the dollar rose sharply in the first half of the year, but then skidded to finish the year close to its year-end 1988 level.[1/]

Fiscal restraint at the Federal level left total government purchases of goods and services, measured in real terms, virtually unchanged

1/ The dollar fell 4.6 percent against the West German mark over the year, while it rose 15.3 percent against the Japanese yen.

in 1989. Purchases by the Federal government fell for a second consecutive year, while growth in state and local government purchases eased slightly. At the Federal level, both defense and nondefense spending declined (including and excluding purchases by the Commodity Credit Corporation). The Federal budget deficit in fiscal year 1989 was $152 billion on a unified basis, close to its level in each of the preceding two fiscal years. Continued economic expansion lifted revenues during the fiscal year, but sizable increases in net interest payments and spending to liquidate insolvent thrifts boosted growth in total outlays, despite restraint exercised in other spending categories.[1/]

III. Domestic Financial Markets

Yields on investment-grade fixed-income securities fell in 1989 (Chart 1). In sharp contrast, yields on many below-investment-grade corporate securities finished the year markedly higher because major defaults and bankruptcies in the latter half of the year upset investor confidence in this sector. In areas not plagued by credit quality worries, shorter dated issues led the move to higher yields over the first three months of the year. After peaking in late March, yields fell considerably through early August. Over the rest of the year, yields moved in a narrow range and finished modestly above their midsummer lows.

The principal influences on financial markets in 1989 were the prospects for real economic growth and inflation and the outlook for Federal

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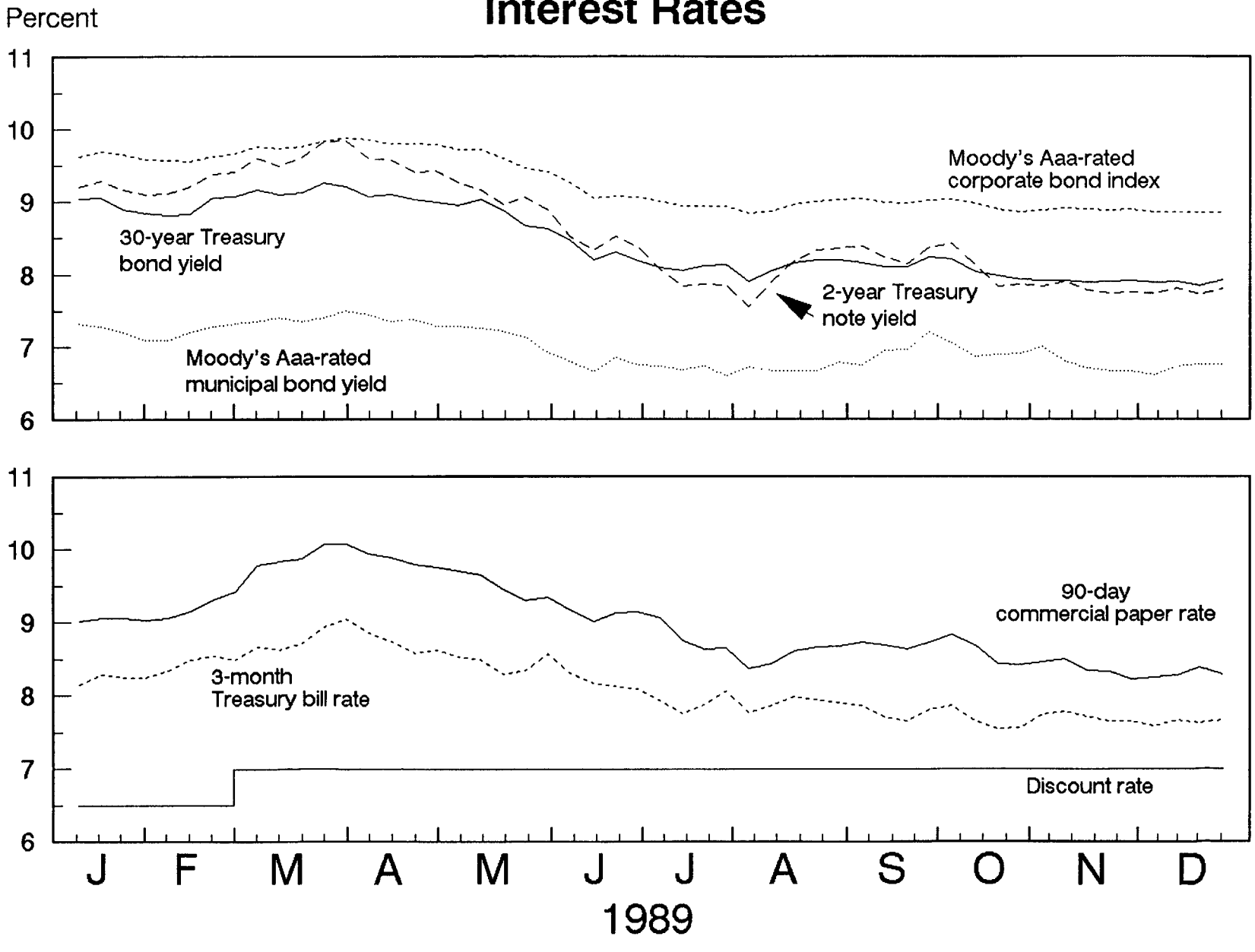
1/ In fiscal year 1989, net budget outlays aimed at resolving the thrift crisis more than doubled to $18 billion from $8 billion in 1988. In 1989, roughly half of the net outlays were made by the now-defunct Federal Savings and Loan Insurance Corporation (FSLIC), while the remainder were made by the Resolution Trust Corporation--created by legislation passed in August. Previously, almost all such outlays had been undertaken by the FSLIC. Expenditures for this purpose are widely seen as having a minimal impact on economic activity.

Chart 1

Long-Term and Short-Term Interest Rates



Reserve policy. A number of economic releases, which were regarded as offering insight into the underlying strength of economic activity and price pressures, were routinely monitored and helped to shape investors' outlooks for economic growth, inflation, and their expectations about System policy. Market participants paid particular attention to the monthly nonfarm payroll employment data, a timely and relatively comprehensive measure of economic performance. The monthly national purchasing managers' report was also closely scrutinized for early signs of developments in the manufacturing sector. Several price series were watched to keep abreast of the latest inflation trends; foremost among these was the producer price index. The behavior of the dollar on foreign exchange markets also influenced yields at times, partly through its impact on expected future inflation rates--a strong dollar lessened fears of higher inflation from rising import prices. In addition, a strengthening dollar was seen as encouraging investment inflows from abroad, as these inflows would tend to boost the value of dollar-denominated instruments. Throughout the year, yields often moved whenever market participants thought that an imminent change in System policy was likely. At these times, they closely followed movements in the Federal funds rate to gauge the stance of policy.

Yields on investment-grade securities rose over the first three months of the year, in part reflecting System moves to increase reserve pressures. Short-term yields moved up early in January following the System's firming action, but long-term yields declined modestly as inflation fears eased. The move to firm reserve pressures, along with Chairman Greenspan's mid-January Congressional testimony that reiterated the System's commitment to controlling inflation, dampened inflation expectations as did a strong dollar in foreign exchange markets. The market's inflation psychology shifted sharply in early February, however, and remained pessimistic through March because economic statistics pointed to a pattern

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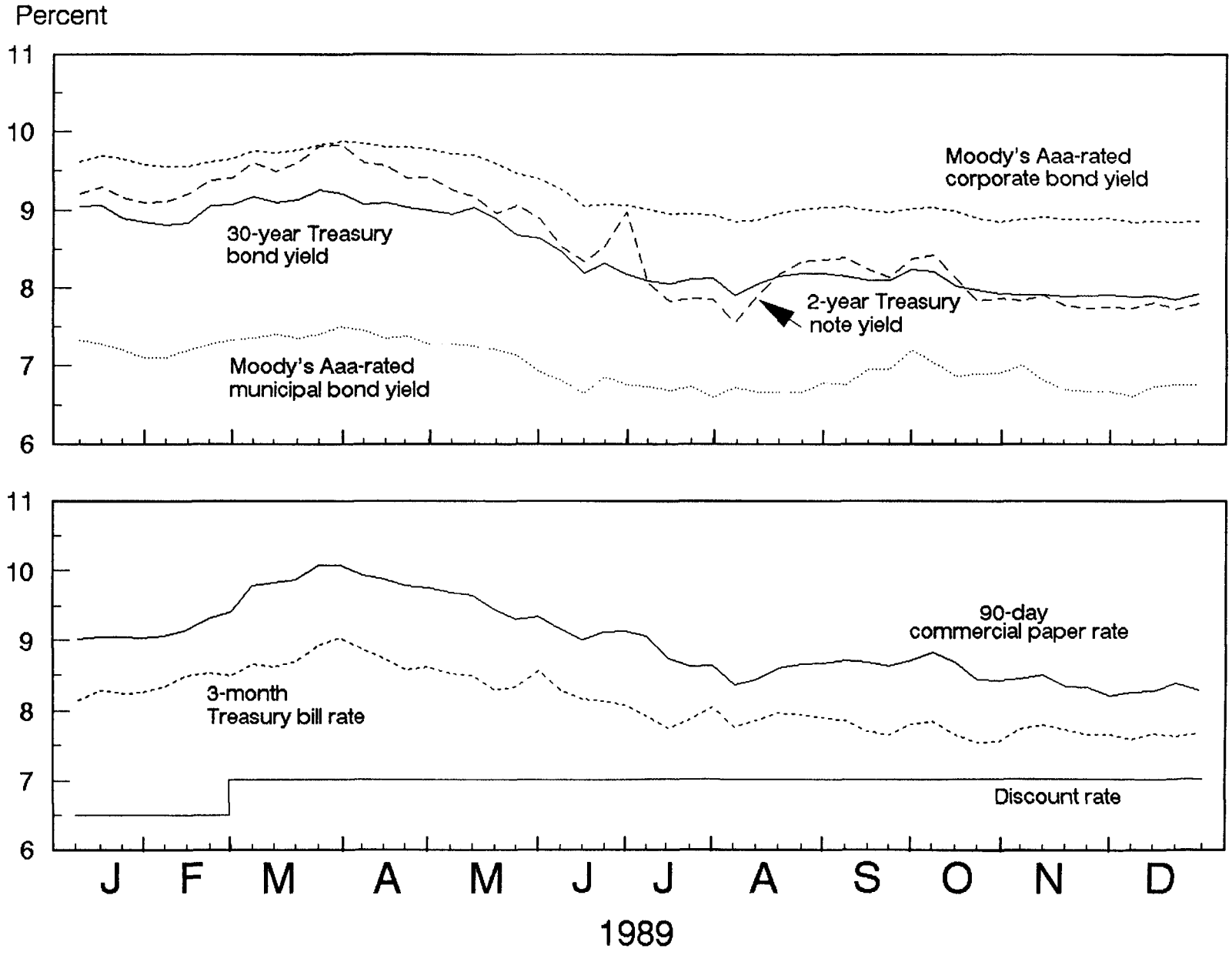

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of robust economic growth coupled with accelerating inflation. Payroll employment data for January and February showed strong job gains (Chart 2), while the producer price indexes for these months recorded sharp advances. Rising oil prices also aggravated the negative inflation prospects. Shorter term yields rose more than those on longer term issues in response to prospective and actual policy actions aimed at combating these price trends, including the discount rate hike in February.[1/]

Evidence that the economy was losing some momentum while inflation was stabilizing led to a period of declining interest rates that lasted from early April until midsummer. Reports that the purchasing managers' index tumbled and nonfarm payrolls showed only a small gain for March supported some earlier signs of a slowdown, such as a decline in February retail sales. Meanwhile, producer prices for March advanced more modestly than in the previous two months. Together, these developments helped to dispel expectations that monetary policy would be firmed again, and yields edged off the levels reached late in March. As May progressed and incoming data suggested a further slowing in economic activity, market sentiment gradually shifted towards anticipations of an easing in the policy stance. A strong dollar against major foreign currencies also exerted downward pressure on yields. Yields tumbled in mid-May after the release of the April producer price index, which showed a slight decline when the volatile food and energy components were excluded. These developments were reinforced in early June by the report of weak job gains in May. Moreover, the purchasing managers' index dropped to 49.7 percent, the first time that the index had fallen below 50 percent in 33 months. (A reading below 50 percent implies that activity in the manufacturing sector is contracting.) Chairman Greenspan's

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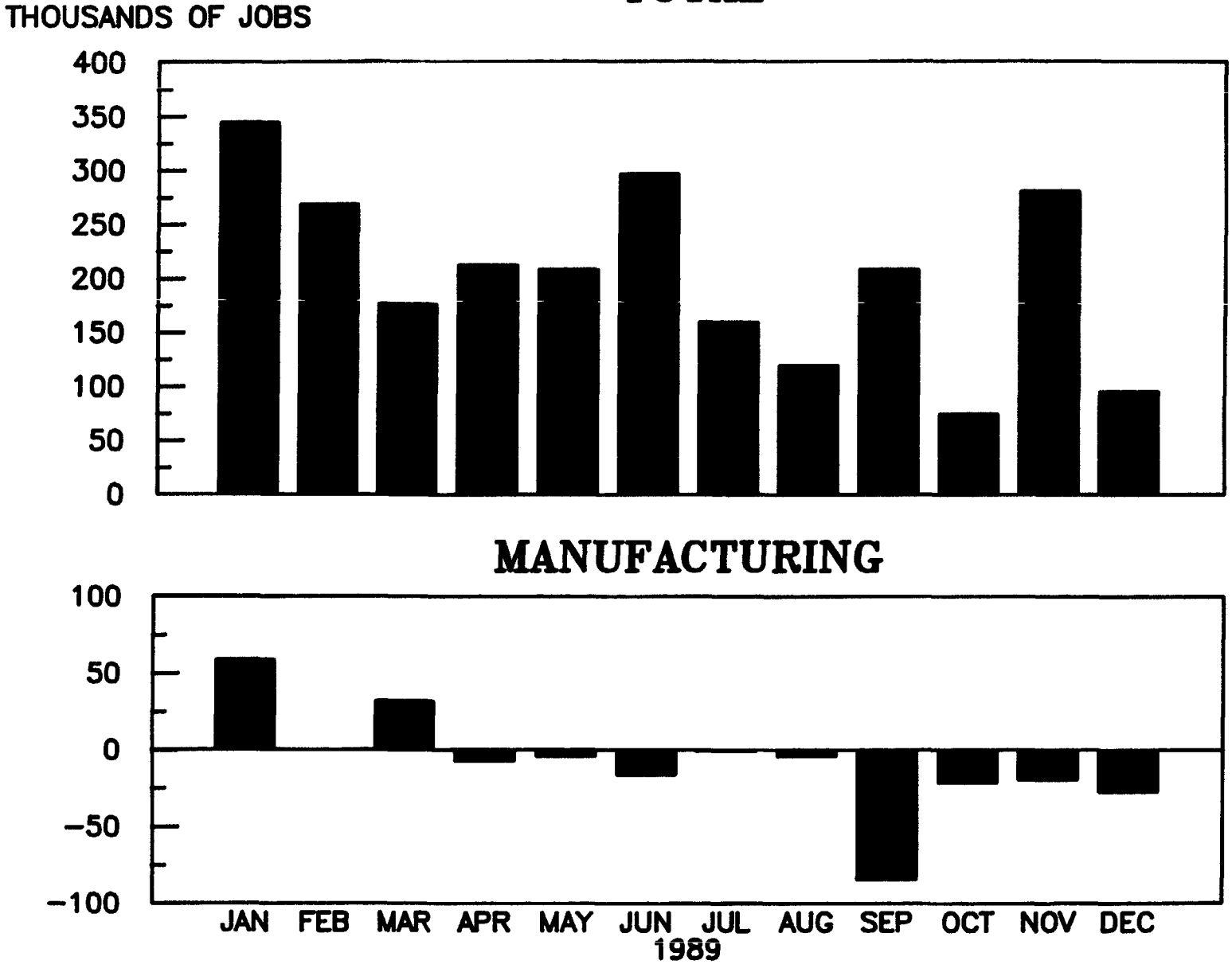
1/ One outgrowth of the higher yields on shorter dated Treasury issues in the early months of the year was a surge in noncompetitive tenders, a measure of individual investor interest, at auctions of Treasury bills and short-dated notes.

Chart 2

CHANGE IN NONFARM PAYROLL EMPLOYMENT TOTAL



concerns about weakness in the economy, expressed during his July 20 Humphrey-Hawkins testimony, added brief support to the markets. Also in July, the yield on the two-year note fell below that on the 30-year bond and the yield curve took on a positive slope for maturities between two and 30 years.

In August and September, economic activity showed some signs of vigor, but this growth was not expected to exacerbate inflationary pressures. In this environment, policy was expected to remain on hold, and yields moved slightly higher because several easing moves had already been incorporated into the yield structure. News of sizable job gains in July, along with a substantial upward revision to June's rise, pressured yields higher in early August. Uncertainties about financing provisions of the thrift legislation and about the Treasury's debt ceiling added briefly to the pressures, particularly in the Treasury sector. (The Treasury obtained a temporary increase in the ceiling in early August that lasted until October 31.) A series of mixed economic reports followed that, on balance, supported the perception of a moderate pace of economic activity. The producer and consumer price indexes reported during this time generally suggested lower inflation than earlier in the year.

Yields moved irregularly lower over the final three months of the year, based in part on expectations that the signs of sluggish economic activity would lead to additional moves to ease the stance of policy. Market participants increasingly focused on the performance of the manufacturing sector, which appeared to be contracting at the same time that other sectors of the economy were showing signs of continued growth. Manufacturing employment fell markedly in each of the final three employment reports released during 1989. Further evidence of a manufacturing slowdown was found in the purchasing managers' index and the industrial production index. Meantime, prices seemed to be rising at a slower pace than in the

early months of the year. Yield declines, especially on short-term issues, were fostered by prospective and actual System moves to ease policy. Indeed, the System reduced reserve pressures on three more occasions before year-end. (However, yields responded only briefly to the December easing move because the easing had been anticipated and was already almost fully reflected in yields.)

U.S. Treasury Securities

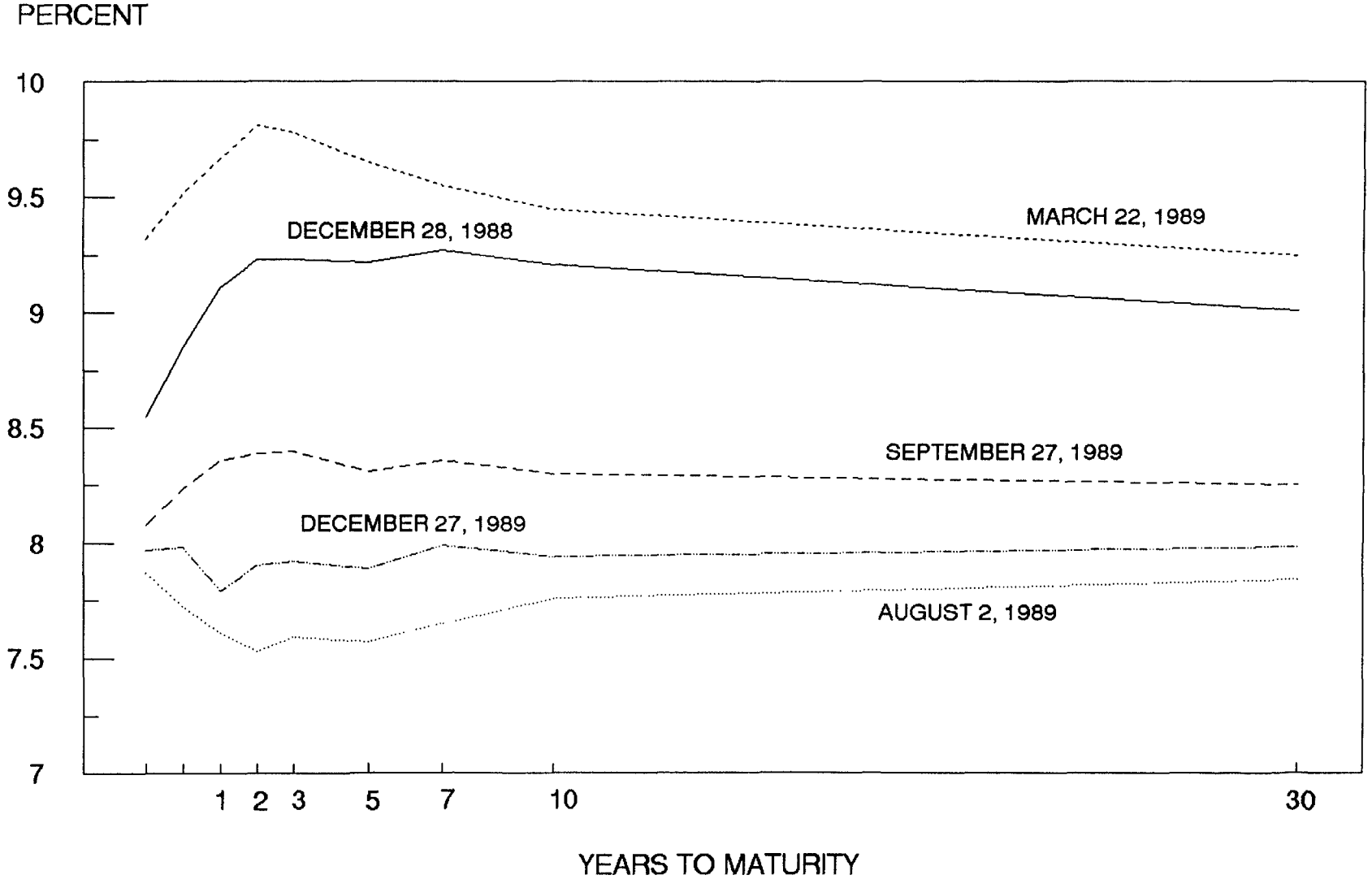
The Treasury yield curve was hump-shaped from the beginning of the year until early July and again from mid-August to mid-October (Chart 3). Yields on Treasury bills were generally below those on short-dated coupon issues, whose yields, in turn, mostly exceeded those on the 30-year bond. During the remainder of the year, the yield curve was relatively flat, with bill yields frequently exceeding those on shorter dated issues. On balance, yields on Treasury coupon securities, as measured by the constant maturity series, declined between 110 and 140 basis points in 1989, with smaller reductions on the longer maturities. Treasury bill rates fell 60 to 120 basis points, with the largest decline for 52-week bills.

From time to time during the year, yields on Treasury issues were pushed lower when market disturbances elsewhere set off "flight-to-quality" demand. The most dramatic example occurred in mid-October. Yields fell on October 13 in response to the late-afternoon, 190-point plunge in the Dow Jones Industrial Average. The selloff in stocks was sparked by the failure of a bidding group to arrange financing for its proposed takeover of United Airlines and led investors to seek the safe haven of Treasury issues. The yield declines were partially retraced the next trading day, as stock prices recovered but yields remained below their prior levels, partly reflecting the soft Federal funds rate.

Debt ceiling limitations complicated Treasury financing toward the end of October and briefly affected yields. Bill rates jumped when the

Chart 3

YIELD CURVES FOR SELECTED U.S. TREASURY SECURITIES



Treasury announced an earlier-than-usual settlement date for its October 30 bill auctions. The Treasury adopted the earlier settlement in order to raise as much cash as possible under the enlarged temporary debt ceiling before it expired on October 31. The start of the Treasury's midquarter refunding auctions and a regular weekly bill auction were postponed until after a new $3.12 trillion debt ceiling was enacted on November 8.[1/] Potential upward pressures on coupon yields from the compressed financing schedule were offset by expectations of a falling rate pattern.

Thrift Legislation and its Impact on Treasury and Agency Borrowing

The Federal government's efforts to raise cash to manage the process of closing or merging insolvent thrift institutions had a significant impact on borrowing by the Treasury and by U.S. Government-sponsored agencies in 1989. The Financial Institutions Reform Recovery and Enforcement Act of 1989 (FIRREA), originally proposed by President Bush in February and enacted on August 9, set forth the framework within which the thrift industry problems were to be resolved. The legislation was also aimed at overhauling the institutional structure and the rules by which the entire industry is supervised and regulated. One provision created the Resolution Trust Corporation (RTC), which is empowered to take possession and dispose of the assets of failed thrifts over the next several years. It inherited this role from FSLIC, which discontinued its operations.

The RTC was authorized to spend a net total of $50 billion to resolve the problems of insolvent thrifts. The legislation stipulated that $18.8 billion of these outlays were to be financed out of general revenues, and Congress appropriated these funds in fiscal 1989. About half of them had been spent by the end of the 1989 fiscal year, and the remaining portion was expected to be used over the following two years. The RTC was to acquire the other $31.2 billion through the sale of capital certificates to

1/ During 1989, net issuance of Treasury securities was $124 billion.

REFCORP, a new agency established by FIRREA.[1/] To finance its purchase of RTC capital certificates, REFCORP was authorized to sell $30 billion of long-term bonds in fiscal years 1990 and 1991, while the Federal Home Loan Banks contributed another $1.2 billion in fiscal year 1989. Although REFCORP bonds are not obligations of, nor is their principal guaranteed by, the U.S. Government, they have strong Federal backing. Prior to each bond issue, REFCORP, using thrift industry funds, purchases directly from the Treasury zero-coupon securities with a principal amount and maturity date that match the REFCORP obligation, thus defeasing the principal. Furthermore, interest on REFCORP borrowing is to be paid out of Treasury and thrift industry funds, with the Treasury guaranteeing all interest payments.

The Treasury's borrowing operations during the year were affected by these efforts aimed at meeting the U.S. Government's liabilities to thrift depositors. The Treasury raised part of the $18.8 billion appropriated by the Congress by increasing Treasury bill issuance. In anticipation, bill rates moved higher as the passage of FIRREA neared. The Treasury expanded the sizes of the regular weekly bill auctions and of the 52-week bill auctioned on August 24 and raised an additional $5 billion through a 247-day cash management bill auctioned on August 10. Subsequently, the prospect of the sale of REFCORP bonds placed some upward pressure on yields of longer dated Treasury securities. Nonetheless, the added borrowing undertaken to fund RTC's expenditures appeared to have little lasting impact on interest rates in the Treasury market in 1989.

REFCORP entered the public debt market for the first time on October 25 and auctioned $4.52 billion of 30-year bonds--the agency's only offering in 1989. Dealers approached the issue cautiously. Having no prior

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1/ Receipt of these funds by the RTC is scored as a negative outlay in the Federal budget accounts, thereby offsetting positive outlays of an equivalent amount.

experience with such issues, they were uncertain how actively it would trade in the secondary market. The auction went well with the average yield at 28 basis points above the yield on the Treasury's 30-year bond. The spread remained near this level in subsequent trading during the balance of the year, although actual trading was generally very light. Just over one-quarter of the issue was stripped to satisfy demand for zero-coupon instruments. As required by FIRREA, prior to the settlement of the issue, REFCORP purchased the zero-coupon Treasury bonds needed to ensure repayment of the principal, at a cost of about $400 million.

In related agency borrowing, the Financing Corporation (FICO) issued a total of $2.3 billion of 30-year bonds during the year and used up much of its remaining borrowing authority. FICO was created in 1987 as a subsidiary of the Federal Home Loan Bank Board (FHLBB) and was authorized to borrow up to $10.8 billion to help recapitalize FSLIC, which at the time was under the supervision of the FHLBB.

Other U.S. Government Agency Securities

The Tennessee Valley Authority (TVA) returned to the public debt market for the first time in 15 years by selling $4 billion of bonds in October and again in November. The proceeds of these sales were used primarily to refinance (through defeasance) roughly $7 billion in high-coupon debt held by the Federal Financing Bank (FFB), the agency through which the TVA had previously arranged its financing. TVA officials estimated that the refinancing could save the agency as much as $100 million per year in interest expenses. Typically, an agency that borrows directly in the public market cannot borrow from the FFB; however, TVA obtained an alternative credit facility for $2 billion from the FFB for the next two years. Strong investor demand for the offerings materialized and their sizes were increased from their originally planned levels. The November issue included $2.5 billion of 40-year bonds, callable after ten years, that

were unusual because of their long maturity.[1/] These bonds were initially priced to yield 110 basis points over the 30-year Treasury bond, which is fully protected against an early call, and the spread had narrowed somewhat by year-end.

Corporate Bonds

Public debt issued by U.S. corporations in the domestic bond market declined for the third consecutive year in 1989; such issuance fell by 12 percent to $177.4 billion.[2/] Total issuance was heaviest in the spring and fall, when borrowers sought to take advantage of ebbing interest rate levels. The dropoff in total new offerings stemmed from a sharp cutback in issuance of mortgage-backed securities and a decline in issuance of below-investment-grade securities. These decreases were partially offset by a modest increase in investment-grade offerings (those rated Baa or higher by Moody's) and another jump in asset-backed securities issues, most likely a result of continued reductions in bank and thrift balance sheets. Mortgage-backed issuance fell because of slow activity in the housing market and because the relatively flat Treasury yield curve limited profit potential from the issuance of collateralized mortgage obligations.

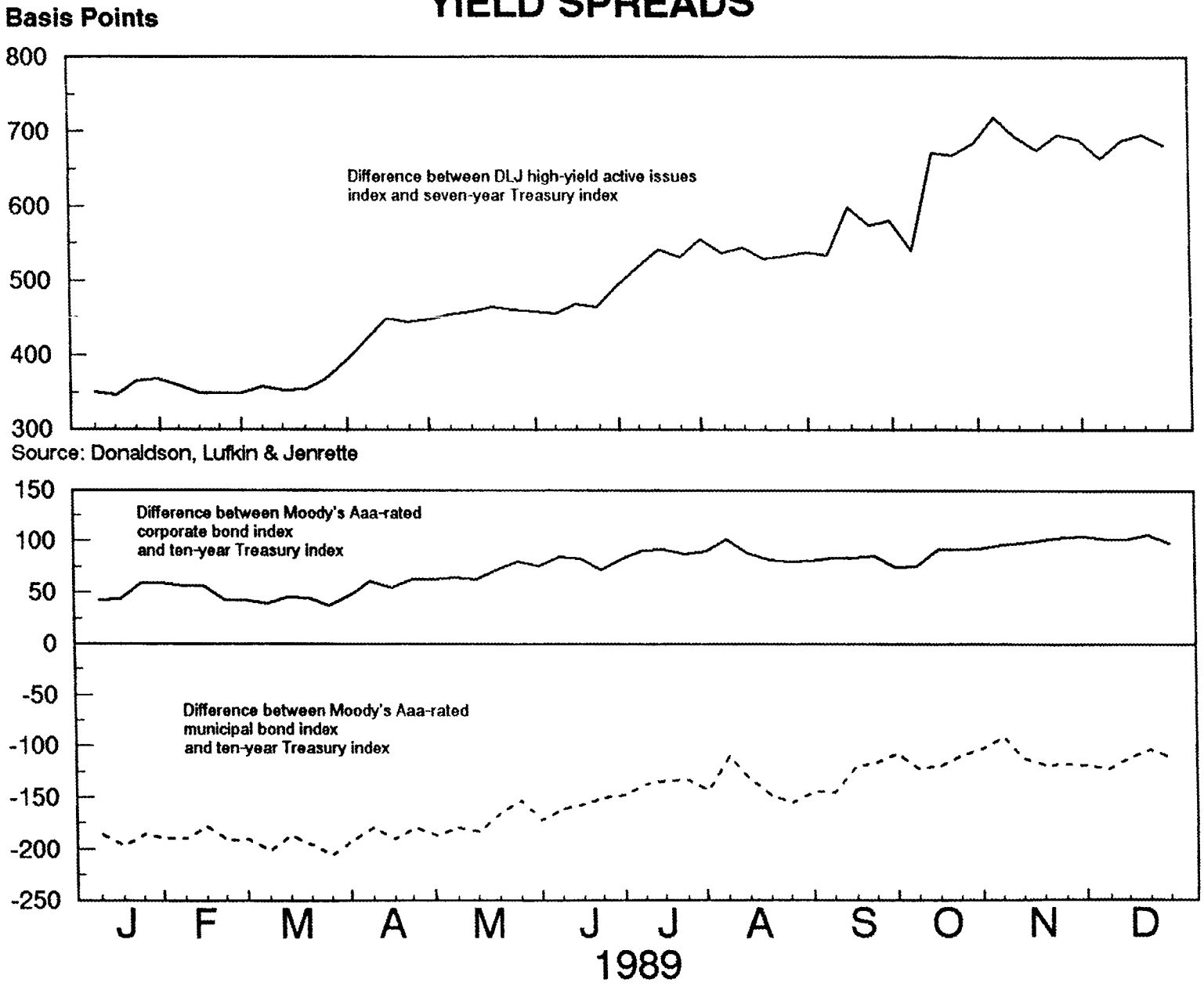
Yields on highly rated corporate bonds fell about 75 to 85 basis points, and spreads between yields on investment-grade corporate issues and those on Treasury securities widened throughout the year (Chart 4). The wider spreads in part reflected the increased issuance as well as investor concern over holding corporate bonds in a weakening economy. Spreads on debt of individual companies also depended on their "event-risk" covenants. In 1988, the leveraged buyout of RJR Nabisco made clear that all but a few

1/ Several telephone companies and foreign entities have offered callable 40-year debt in recent years.

2/ Data on corporate and municipal debt issuance were supplied by the Board of Governors of the Federal Reserve System.

Chart 4

YIELD SPREADS



firms were subject to mergers, takeovers, or recapitalizations that could cause their outstanding bonds to lose their investment-grade status. Consequently, bondholders demanded higher yields to hold bonds that did not have protection against such occurrences. In 1989, more new issues carried event-risk protection, such as a "poison put" which permits bond holders to resell their bonds back to the issuer at a specified price in case specified events cause the bonds to lose their investment-grade status. Bonds with event-risk protection generally had lower yields than similarly rated issues of another company that did not have such protection. In July, Standard & Poor's introduced a rating system that evaluates event-risk covenents. The covenant rankings assess the degree of protection provided in bond indentures against a sudden and dramatic decline in credit quality resulting from a takeover bid, recapitalization or similar restructuring. E-1 represents the highest level of protection, with E-5 indicating the lowest level.

Some bank holding company (BHC) debt was affected by problem loans to domestic real estate ventures late in the year. As real-estate markets weakened, especially in the Northeast, some BHCs had to increase their loan-loss reserves to account for problems with their real-estate portfolios and thus depressed their earnings. Yield spreads on BHC debt over Treasury issues widened and the ratings of some BHC debt were lowered.

In other developments affecting the operations of BHCs, the Federal Reserve Board in January granted approval to five BHCs to underwrite corporate debt, contingent upon the Board's acceptance of the individual BHC's plan to capitalize its debt underwriting operations. The Board ruled that such underwriting must be conducted by a separate subsidiary that does not generate more than 5 percent of its total gross revenue from underwriting corporate debt and certain other securities. (This limit was raised to 10 percent in September.) In addition, with limited exceptions, Federally

insured banks and thrifts cannot provide loans to their affiliated underwriting subsidiaries. In July, J.P. Morgan Securities Inc., a subsidiary of J.P. Morgan Bank Corporation, became the first subsidiary of a BHC to participate in a syndicated underwriting of corporate securities since the passage of the Glass-Steagall Act in 1933, and later became the first bank subsidiary since that time to act as the lead underwriter for a corporate bond offering.

Yields on below-investment-grade bonds, also known as high-yield or junk bonds, rose sharply during 1989 as investor wariness about holding such securities intensified in the face of rising concerns about a slowdown in economic activity and financial difficulties of several major issuers. The spread between yields on junk bonds and those on Treasury securities began to widen in the spring and summer as market expectations of an economic slowdown took hold and raised doubts about the ability of many issuers of junk bonds to repay their debts. These doubts were underscored in mid-June when Integrated Resources Inc., a real-estate partnership syndicate, declared its inability to make a pending interest payment because of short-term funding problems.[1/]

Yields on junk bonds were boosted even further over the second half of the year. In mid-September, Campeau Corporation, the Canadian-based owner of Allied Stores and Federated Department Stores, announced that it did not have funds to make interest payments on outstanding bonds of Allied Stores. The value of bonds sold by both Campeau units tumbled, as did prices on outstanding issues of other retail establishments. Even though Campeau received a cash infusion from Olympia and York that enabled it to meet its immediate interest obligations, prices on Allied and Federated

1/ Integrated adopted a restructuring plan later in 1989 but was forced into bankruptcy in February 1990.

debt remained depressed as the company's funding problems persisted.[1/] The episode increased sensitivity to the characteristics of specific issues in the junk bond market. Over the remainder of the year, a nervous undertone lingered in the market, fueled by rumored or actual adverse developments at many companies. "High-quality" junk bonds held their value better than "low-quality" junk bonds. Trading was periodically volatile, and ground to a virtual halt for a few days after the stock market declined precipitously on October 13. By year-end, the spread between the Donaldson, Lufkin & Jenrette (DLJ) index of yields on actively traded junk bonds and their index of yields on Treasury securities with seven years to maturity had almost doubled from its level at the start of the year (Chart 4).

As a result of the growing problems experienced in this sector, total issuance of junk bonds during the year fell to $28.7 billion, about 8 percent below the previous year's level. The pace of new offerings dropped off considerably in the second half of the year in light of the unsettled market conditions. Included in the year's total issuance was an offering of $4 billion of RJR Holdings Capital Corporation securities in May--the largest corporate offering ever. The proceeds were used to repay short-term loans arranged as part of the $25 billion leveraged buyout of RJR Nabisco Inc. by Kohlberg Kravis Roberts and Co. that was completed in February.

Several other developments during the year also affected the demand for junk bonds. As part of the August thrift rescue legislation, savings and loans institutions were required to divest their holdings of low-rated bonds by 1994, although separately capitalized affiliates were still permitted to invest in such debt, and sizable thrift selling was noted at times over the remainder of the year. In November, as part of its budget

1/ Allied Stores and Federated Department Stores ultimately filed for protection under Chapter 11 of the bankruptcy code in January 1990.

legislation, Congress imposed limits on the deductibility of interest payments on certain securities that have a maturity greater than five years, that defer interest payments, and that have a yield to maturity that is more than five percentage points above the Applicable Federal Rate, as defined by the Internal Revenue Service. Both legislative changes had been widely anticipated and had little immediate impact on the market for low-rated securities, but they underscored growing Congressional disapproval of the practice of issuing such debt, especially to finance corporate takeovers.

Municipal Bonds

The municipal bond market remained relatively quiet in 1989. Total municipal issuance for the year fell a bit to $113.6 billion from $114.5 billion in 1988. New-money issues posted a 5.5 percent increase, rising to $84 billion, while refunding issues declined 15 percent to $29.6 billion. The pace of new issuance was somewhat faster over the second half of the year, when municipalities took advantage of lower interest rates.

Yields on highly rated municipal bonds declined 55 to 65 basis points. Movements in municipal bond yields roughly followed those on Treasury securities, although the spread between yields on municipal bonds and those on Treasury securities narrowed somewhat over the year (Chart 4). The smaller spread over the second half of the year in part reflected the increased pace of new issuance at that time. Two other factors also contributed. Sizable additions to loan-loss reserves during the second half of the year reduced many commercial banks' needs for tax-exempt income and decreased their demand for municipals. Also, some tax benefits to holding municipal issues expired at the end of the year and thus prompted some institutional selling.

A notable development in the municipal bond market during the year was the reentry of the Washington Public Power Supply System (WPPSS) in

September, when it sold $721 million of refunding revenue bonds backed by projects 1, 2, and 3. The bonds were rated A by Moody's and AA- by Standard & Poor's. This offering marked the first time that WPPSS has issued municipal bonds since it defaulted on $2.25 billion of projects 4 and 5 bonds in 1983--the largest default in the municipal market to date. After some delay because of legal complications, the offering went smoothly. Strong investor demand enabled WPPSS to increase the size of the new issue from its originally planned level of $450 million, although yields were about 25 basis points above those on similarly rated long revenue bonds. WPPSS sold an additional $738 million of bonds in December.

IV. Monetary Aggregates

Growth of all three monetary aggregates and total domestic nonfinancial debt decelerated in 1989 (Chart 5). After having slowed in the latter half of 1988, M2 and M3 growth rates were even more sluggish over the first half of 1989, while M1 actually contracted. Growth of M1 and M2 rebounded sharply over the final two quarters of the year. Despite this rebound in M2 growth and a modest pickup in bank credit expansion, M3 growth decelerated further because of factors associated with the restructuring of the thrift industry. Debt expansion was a bit greater in the first half of the year than in the second. Overall, M2 and M3 grew 4.6 and 3.2 percent, respectively, from the fourth quarter of 1988 to the fourth quarter of 1989. M1 eked out a gain of 0.6 percent; total nonfinancial debt expanded at an 8.0 percent rate. These rates of expansion placed fourth-quarter M2 slightly below the midpoint of the FOMC's growth cone, and placed M3 just below its cone. The debt measure finished the year slightly below the midpoint of its monitoring range.

In February, the FOMC reaffirmed the 1989 growth ranges for M2 and M3 that it had tentatively established the preceding June. These ranges

with a lag, as the opportunity cost of holding M2 assets rises. Short-term variations in M2's opportunity cost arise because the rates offered on most M2 deposits respond sluggishly to movements in market rates. When holders of M2 deposits observe that the rates paid on these deposits are not keeping pace with the increases in market rates, they will redeploy some of their M2 holdings into higher yielding money market instruments and thus depress M2 growth. Gradually, as market rates stabilize, rates offered on most M2 deposits catch up with the adjustment in market rates and the opportunity cost of holding M2 moves back toward its usual level. As this happens, people readjust the proportion of their financial assets in M2 back toward the earlier ratio, speeding up the growth of M2 in the process.

The impact of a change in market interest rates on the growth of individual components of M2 depends on the speed at which the average offering rate for that component is adjusted. Banks typically adjust the offering rates on other checkable deposits, money market deposit accounts (MMDAs), and savings accounts relatively slowly. Demand deposits pay no explicit interest by law, and implicit returns are altered gradually through adjustments to charges and services associated with the account. Rates on money market mutual funds and small time deposits respond much more quickly to changes in market rates.

The deceleration of M2 growth over the first two quarters of 1989 largely resulted from the behavior of the opportunity cost of holding money, and the unexpectedly large tax liabilities that individuals faced in April. The average spread between market rates and those on M2 deposits widened further in the first quarter; however, it began to narrow in the second quarter as market rates fell from their highs and deposit rates lagged behind. Funds may have been funneled into taxes or nonmonetary assets rather than into M2 deposits--noncompetitive tenders at Treasury security auctions were already quite large during the first quarter. Deposits whose

rates adjust slowly contracted markedly during the first two quarters, with especially pronounced outflows in April and May when individuals appear to have drawn down their existing balances in these accounts to meet unanticipated tax obligations. The sizable declines in demand and other checkable deposits over the first half of the year caused M1 to fall sharply. Within M2, however, the contraction of deposits with relatively unresponsive rates was offset by gains in small time deposits and money market mutual funds, especially in the second quarter, when the average rates on small time deposits and money funds exceeded those on six-month Treasury bills. On balance, M2 expanded at an anemic 2.0 percent rate over the first two quarters, while M1 fell at a 2.3 percent annual rate.

The weak expansion of M2 depressed M3 growth. The non-M2 component of M3 grew briskly in the first quarter as banks stepped up their issuance of large time deposits to help fund the modest pace of loan expansion. The growth of these managed liabilities moderated in the second quarter because banks were able to fund credit expansion, which remained modest, with tax-swollen Treasury Tax and Loan account balances. Thrift issuance of managed liabilities slowed from its pace in the latter half of 1988, perhaps reflecting heavier reliance on Federal Home Loan Bank advances to fund credit expansion. On net, M3 grew at a 3.6 percent rate over the first two quarters of the year.

At the time of the FOMC's midyear review of the growth of the aggregates, M2 was about 1 percentage point below the lower bound of its growth cone, while M3 was at its lower bound. Total financial debt stood in the middle of its monitoring range. M1, meanwhile, was considerably below the level it had attained on average during the fourth quarter of 1988. M2 and M3 were expected to show stronger growth in the second half of the year, in light of the recent declines in market interest rates. Furthermore, it was anticipated that they would finish the year well within their target

ranges. Against this background, the Committee reaffirmed the 1989 target and monitoring ranges.

Over the second half of the year, M2 growth accelerated markedly as the opportunity cost of holding deposits narrowed. Deposits with relatively unresponsive rates expanded considerably and nearly recovered the outflows of the first half of the year. Money market mutual funds showed sizable monthly increases, despite the narrowing spread of their offering rates over market rates. The strong inflows into these funds likely reflected the fact that their rates exceeded those on other monetary instruments. Money market funds may also have benefited from the mounting losses on junk bond funds and the sharp contraction of stock prices on October 13, because money market funds are perceived as a means of avoiding the volatility of bond and equity funds. The growth of small time deposits slowed, in part because their rate advantage over some market rates eroded markedly. On balance, M1 and M2 grew at rates of 3.5 and 7.1 percent, respectively, over the final two quarters.

The troubles of the thrift industry appear to have affected the composition of M2 but not its overall growth. Thrift small time deposits declined from September through December, while other thrift deposits grew slowly. The fall in thrift small time deposits probably reflected the shrinkage in the spread between thrift and commercial bank rates on these deposits. With regulators actively discouraging thrifts from offering unduly high rates and with troubled institutions (which generally offered the highest rates) being seized, thrift rates on small time deposits declined more than those offered by commercial banks. The shrinkage in thrift small time deposits, and the modest growth of other thrift M2 deposits, appears to have been more than offset by flows into commercial bank deposits and money market mutual funds. Consequently, commercial banks

held a greater share of M2 deposits at the end of the year than at the beginning.

Unlike M2, the growth of M3 in the second half of the year was significantly restrained by the restructuring of the thrift industry. FIRREA imposed strict capital requirements on thrifts and limitations on the structure of their portfolios. While the use of RTC funds to pay off depositors at liquidated institutions also reduced M3 somewhat, the most pronounced impact of the law was on the funding practices of inadequately capitalized thrifts. These thrifts were required to reduce their balance sheets and did so by restricting their issuance of term repurchase agreements and large time deposits over the second half of the year.[1/] Together, these liabilities fell at a 34 percent annual rate over the final two quarters. Meantime, banks funded the modest pickup in credit expansion with M2 deposits so that their issuance of managed liabilities was weak. On net, M3 expanded at a meager 2.9 percent rate over the final half of the year.

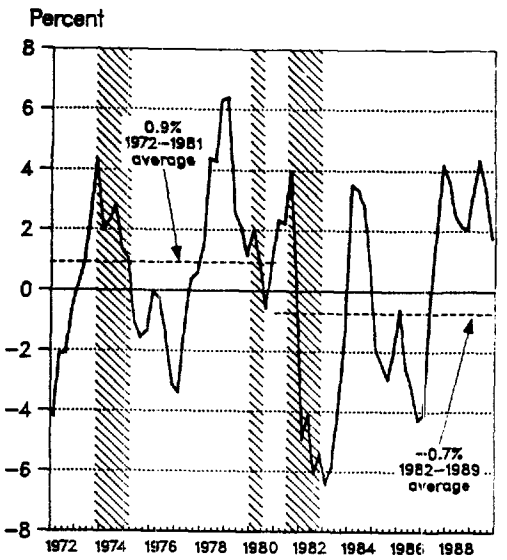
The income velocities of the monetary aggregates all grew faster than their 1982-88 average rates of growth (Chart 6).[2/] The velocity of M2 increased at a 1.8 percent rate in 1989, compared with 2.1 percent in 1988. The velocities of M3 and M1 advanced far more quickly than in 1988. M3 velocity grew 3 percent, while M1 velocity grew 5.8 percent. They advanced 1.2 and 3.1 percent, respectively, in 1988. The velocity of nonfinancial debt fell 1.5 percent, a slightly greater rate of decline than in the previous year.

1/ Thrifts also reduced their issuance of overnight RPs, which were added to M2 in the 1990 redefinition of that aggregate. From June to December 1989, overnight thrift RPs shrank by $1.1 billion, and stood at $2.5 billion in December. While the decline was sharp, they represent such a small share of the broader aggregates that the impact on M2 and M3 growth was minor.

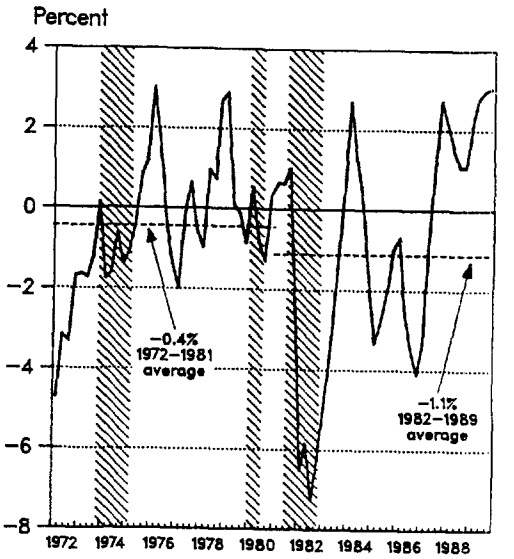
2/ The income velocity of an aggregate is the ratio of nominal GNP to the level of the aggregate.

Chart 6

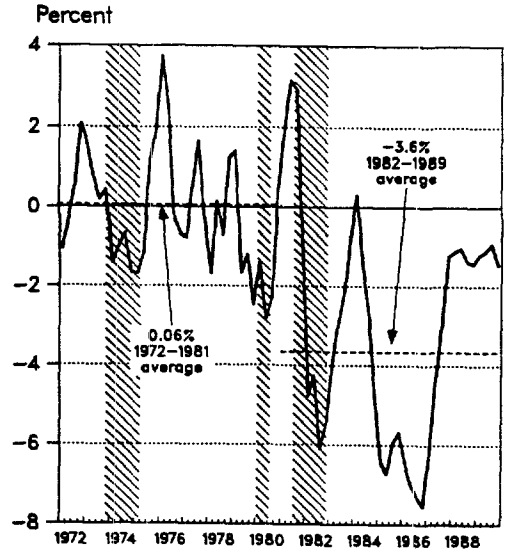
M2 VELOCITY GROWTH*



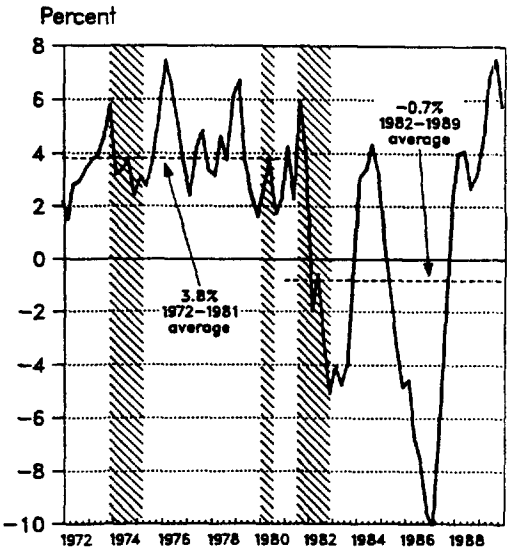
M3 VELOCITY GROWTH*



TOTAL DOMESTIC NONFINANCIAL DEBT VELOCITY GROWTH*



M1 VELOCITY GROWTH*



*Growth from four quarters earlier.
Shaded area represent periods of recession as defined bv the National Bureau of Economic Research.

V. Policy Implementation

In 1989, the FOMC expressed its desired policy stance in terms of the degree of reserve pressure, as it has done, with some modifications, since 1983. The intended degree of reserve pressure is characterized by an assumed amount of adjustment and seasonal borrowing at the discount window. The Trading Desk's reserve management procedures use this intended amount of borrowing to derive the objective for nonborrowed reserves for the two-week reserve maintenance period. The nonborrowed reserve objective is obtained by estimating the demand for total reserves, constructed by projecting required reserves and desired excess reserves, and then by subtracting from that estimate the intended level of discount window borrowing. Revisions are made to the objective during the maintenance period when new information suggests modifications to estimated demand. The Desk conducts open market operations, which affect the supply of nonborrowed reserves, in order to achieve the nonborrowed reserve objective; however, the supply of nonborrowed reserves in the banking system is also influenced by the movements of various "operating factors," over which the Desk has little control. As a result, the Desk faces uncertainties both about reserve demand and about the amount of reserves supplied by the operating factors when it undertakes its operations.

Higher levels of borrowing have typically been associated with firmer money market rates, because limitations are placed on access to the discount window. When higher amounts of borrowing are fostered, fewer nonborrowed reserves are supplied for a given level of demand for total reserves. With nonborrowed reserves less plentiful and with frequent or heavy use of the discount window discouraged, depository institutions bid more aggressively for reserves in the money market and, ultimately, cut back

on their lending and investing. In this process, short-term interest rates rise.[1/]

During 1989, however, as in some previous years, the relationship between the amount of borrowing and the degree of money market firmness, as measured by the spread between the Federal funds rate and the discount rate, was somewhat unreliable. For the most part, banks appeared less inclined to borrow than in earlier years. The unusual reluctance of banks to borrow from the discount window complicated the Desk's implementation of the borrowed reserve procedure throughout 1989 and encouraged a flexible interpretation of the objectives for nonborrowed and borrowed reserves.

As was discussed more fully in the 1988 report, there have been a number of other occasions in the 1980s when banks have shown particular reluctance to borrow.[2/] In late 1988, the relationship between borrowing and the Federal funds-discount rate spread appeared to shift once more. Banks became even more reluctant to borrow from the discount window than they had been earlier in the year; thus, a much larger spread between the Federal funds rate and the discount rate was needed in order to induce banks (in the aggregate) to borrow the same amount that they would have prior to the shift. As a consequence, strict adherence to the nonborrowed reserve objective implied by a given level of assumed borrowing often would have forced Federal funds to trade persistently at rates that were higher than those anticipated by the FOMC. In both 1988 and 1989, the Committee responded to these shifts by choosing the borrowing allowances in a way that took account of the observed degree of reluctance to borrow. Nonetheless, it

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1/ For a more detailed description of the borrowed reserve procedure, see Brian F. Madigan and Warren T. Trepeta, "Implementation of U.S. Monetary Policy" in Changes in Money-Market Instruments and Procedures: Objectives and Implications, Bank for International Settlements, March 1986.

2/ Open Market Group, Monetary Policy and Open Market Operations During 1988 (unpublished), pp. 36-41. A more limited discussion appears in an article with the same title published in the Federal Reserve Bank of New York Quarterly Review, Winter-Spring 1989, pp. 83-102.

recognized that the uncertainty about the relationship between borrowing and the Federal funds rate persisted and it encouraged the Desk to view the assumed levels of borrowing flexibly in order to achieve the desired degree of restraint. (Notes on the FOMC directives and the borrowing assumptions used to construct the reserve paths are in Table I.)

The Desk showed this flexibility by accepting deviations of borrowing from its assumed level, at times when these deviations were consistent with the money market conditions anticipated by the FOMC. (Actual reserve data appear in Table II.) After adjustment and seasonal borrowing fell short of the desired level in four of the first five maintenance periods of the year, the decision was made to accept the reluctance of banks to approach the discount window by reducing the borrowing allowance, on March 9, to a level that was in line with actual experience and that would maintain the existing policy stance. (Policy had been firmed in January and February.) This diminished desire by banks for adjustment credit persisted for the remainder of the year. (Meantime, policy periodically moved in the direction of greater ease.) With adjustment borrowing generally running low, the behavior of seasonal credit often dominated the movements in adjustment plus seasonal borrowing.

Adjustment borrowing was particularly light over the last half of the year when the funds rate generally exceeded the discount rate by smaller amounts than it had in the first half of the year. Adjustment credit was frequently quite low until the final day of a maintenance period, when borrowing sometimes rose in the face of settlement-day pressures. As the FOMC eased reserve pressures over the second half of the year, adjustment borrowing tailed off to average about $165 million over the final 13 maintenance periods of the year, and even this average was lifted by periods with somewhat heavier borrowing associated with natural disasters and year-end pressures. Adjustment credit averaged less than $50 million during

TABLE I

SPECIFICATIONS FOR DIRECTIVES OF THE FEDERAL OPEN MARKET COMMITTEE AND RELATED INFORMATION

Date of Meeting	Specified Short-term Growth Rates M2	M3	Borrowing Assumption for Deriving NBR Path	Discount Rate	Committee Preference	Prospective Reserve Restraint Modifications: Guidelines for Modifying Reserve Pressure	Factors to Consider for Modifications (in order listed) 1	2	3	4
	(in percent)		(millions of dollars)	(in percent)						
12/13 to 12/14/88	November to March 3	6 1/2	400 500 on 12/15 600 on 1/5	6.50	Sought to increase somewhat the degree of pressure on reserve positions.	A somewhat greater degree would be acceptable. A slightly lesser degree might be acceptable.	Indications of inflationary pressure.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets
2/7 to 2/8/89	December to March 2	3 1/2	600 700 on 2/14# 500 on 3/9*	6.50 7.00 on 2/24	Sought to maintain the existing degree of pressure on reserve positions.	A somewhat greater degree would be acceptable. A slightly lesser degree might be acceptable.	Indications of inflationary pressure.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.
3/28/89	March to June 3	5	500	7.00	Sought to maintain the existing degree of pressure on reserve positions.	A somewhat greater degree would be acceptable. A slightly lesser degree might be acceptable.	Indications of inflationary pressure.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.
5/16/89	March to June 1 1/2	4	500 600 on 5/17* 500 on 6/6	7.00	Sought to maintain the existing degree of pressure on reserve positions.	A somewhat greater or somewhat lesser degree would be acceptable.	Indications of inflationary pressure.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.
7/5 to 7/6/89	June to September 7	7	500 600 on 7/7** 550 on 7/27	7.00	Sought to decrease slightly the degree of pressure on reserve positions.	A somewhat greater or somewhat lesser degree would be acceptable.	Indications of inflationary pressure.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.
8/22/89	June to September 9	7	550	7.00	Sought to maintain the existing degree of pressure on reserve positions.	A slightly greater degree might be acceptable. A slightly lesser degree would be acceptable.	Progress toward price stability.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.

10/3/89	September to December 6 1/2 4 1/2	550 500 on 10/5* 400 on 10/19** 350 on 11/2* 300 on 11/6 250 on 11/9*	7.00	Sought to maintain existing degree of pressure on reserve positions.	A slightly greater degree might be acceptable. A slightly lesser degree would be acceptable.	Progress toward price stability.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.
11/14/89	September to December 7 1/2 4 1/2	250 200 on 11/15* 150 on 12/11*	7.00	Sought to maintain existing degree of pressure on reserve positions.	A slightly greater degree might be acceptable. A slightly lesser degree would be acceptable.	Progress toward price stability.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.
12/18 to 12/19/89	November to March 8 1/2 5 1/2	150 125 on 12/20	7.00	Sought to decrease slightly the existing degree of pressure on reserve positions.	A slightly greater or slightly lesser degree would be acceptable.	Progress toward price stability.	Strength of the business expansion.	Behavior of the monetary aggregates.	Developments in foreign exchange and domestic financial markets.

On February 23, the borrowing assumption was increased to $800 million, but it was returned to $700 million on the next day when the discount rate was raised.

* Borrowing assumption changed for technical reasons.
** Change in borrowing assumption reflects technical adjustment and a change in reserve pressures.

Table II
1989 Reserve Levels
(in millions of dollars, not seasonally adjusted)

Period Ended	RR current	RR first published	ER current	ER first published	TR	Adj. & Seas. BR	NBR plus Extended Credit BR current	NBR plus Extended Credit BR first published	NBR Interim Objective[1]	Anticipated Adj. and Seas. BR	Assumed ER [1]	Extended Credit BR
Jan. 11	64,256	64,397	1,147	991	65,403	840	64,563	64,548	64,793	500/600	950	1,208
25	61,786	61,735	972	1,070	62,757	499	62,258	62,307	62,116	600	950	1,028
Feb. 8	60,035	60,138	1,543	1,504	61,578	478	61,100	61,162	60,743	600	950/1,200 [2]	792
22	59,278	59,269	1,016	1,036	60,293	366	59,928	59,939	59,464	600/700	950	1,111
Mar. 8	59,490	59,533	957	915	60,446	550	59,897	59,898	59,774	800/700	950	1,250
22	59,299	59,305	735	805	60,034	422	59,612	59,689	59,754	500	950	1,164
Apr. 5	58,977	58,924	1,305	1,550	60,282	502	59,781	59,973	59,376	500	950	1,675
19	61,190	61,107	223	289	61,413	612	60,801	60,785	61,549	500	950	1,970
May 3	60,345	60,339	1,241	1,301	61,586	581	61,005	61,059	60,742	500	950	1,387
17	58,357	58,382	859	960	59,216	533	58,683	58,809	58,677	500/600	950	1,206
31	56,877	56,923	1,158	1,139	58,034	501	57,534	57,563	57,269	600	950	1,148
June 14	59,012	59,187	897	817	59,909	469	59,440	59,537	59,670	600/500	950	1,657
28	58,154	58,069	901	976	59,054	678	58,376	58,366	58,548	500	950	287
July 12	60,067	60,060	990	953	61,057	571	60,486	60,442	60,409	500/600	950	146
26	58,807	58,883	1,035	915	59,842	591	59,251	59,206	59,232	600	950	90
Aug. 9	58,766	58,659	715	812	59,481	621	58,860	58,851	59,058	600/550	950	55
23	58,859	58,737	951	1,104	59,810	709	59,102	59,132	59,137	550	950	44
Sept. 6	58,247	58,153	959	1,051	59,206	516	58,691	58,689	58,725	550	950	22
20	60,195	60,000	888	1,079	61,083	593	60,491	60,487	60,400	550	950	21
Oct. 4	58,343	58,117	996	1,160	59,338	873	58,466	58,404	58,518	550	950	25
18	60,186	60,110	926	1,045	61,112	634	60,478	60,521	60,560	500	950	19
Nov. 1	58,827	58,857	1,128	1,166	59,955	322	59,633	59,701	59,447	400	950	23
15	60,139	60,279	881	763	61,020	252	60,768	60,790	61,029	350/300/ 250/200	950	20
29	59,958	60,073	1,009	868	60,968	418	60,550	60,523	60,823	200	950	23
Dec. 13	61,149	61,253	759	666	61,908	129	61,779	61,789	62,024	200/150	950	22
27	62,015	62,019	1,018	1,022	63,033	332	62,701	62,708	62,708	150/125	950	19

1/ As of final Wednesday of reserve period.
2/ Revised to accommodate seasonal demand and social security payments.

the September 6, November 1, and December 13 periods. In the September 6 period, when the spread between the funds and discount rates was 193 basis points, adjustment borrowing averaged a skimpy $31 million. This level was the lowest since July 1980, a time when the funds rate was below the discount rate. For the year, adjustment credit averaged $243 million per day, while the funds-discount rate spread averaged 228 basis points. (Chart 7). Comparable figures for 1988 and 1987 were $293 million per day at an average spread of 137 basis points, and $286 million with an average spread of 100 basis points.

The rise and fall of seasonal borrowing more or less followed its normal pattern (Chart 8). These movements were accommodated through eight technical adjustments to the borrowing allowance between May and the year-end, two of which were accompanied by policy-induced changes. With seasonal credit climbing in the late spring and early summer, the assumed level of borrowing was raised in the May 17 and July 12 maintenance periods. While the May move was purely technical, the July increase was associated with a reduction of reserve pressures. This seemingly contradictory step reflected the preceding surge in seasonal borrowing, which necessitated an upward adjustment to the assumed level in order to leave reserve pressures unchanged. Since only a portion of the technical adjustment was offset by the FOMC's decision to reduce reserve pressures, the assumed borrowing level was higher following the easing move. After seasonal borrowing peaked in the July 26 maintenance period at an average $509 million per day, it fluctuated in a range of $485 to $500 million over the three succeeding periods. Recent peak-period averages were $433 million in 1988 (October 5 period) and $298 million in 1987 (July 1 period), when the Federal funds-discount rate spreads were lower.[1/] As seasonal credit

1/ Seasonal borrowing tends to increase as the Federal funds-discount rate spread rises, although traditionally it has not been as responsive to spread changes as adjustment borrowing.

Chart 7

BORROWING AND FEDERAL FUNDS-DISCOUNT RATE SPREAD

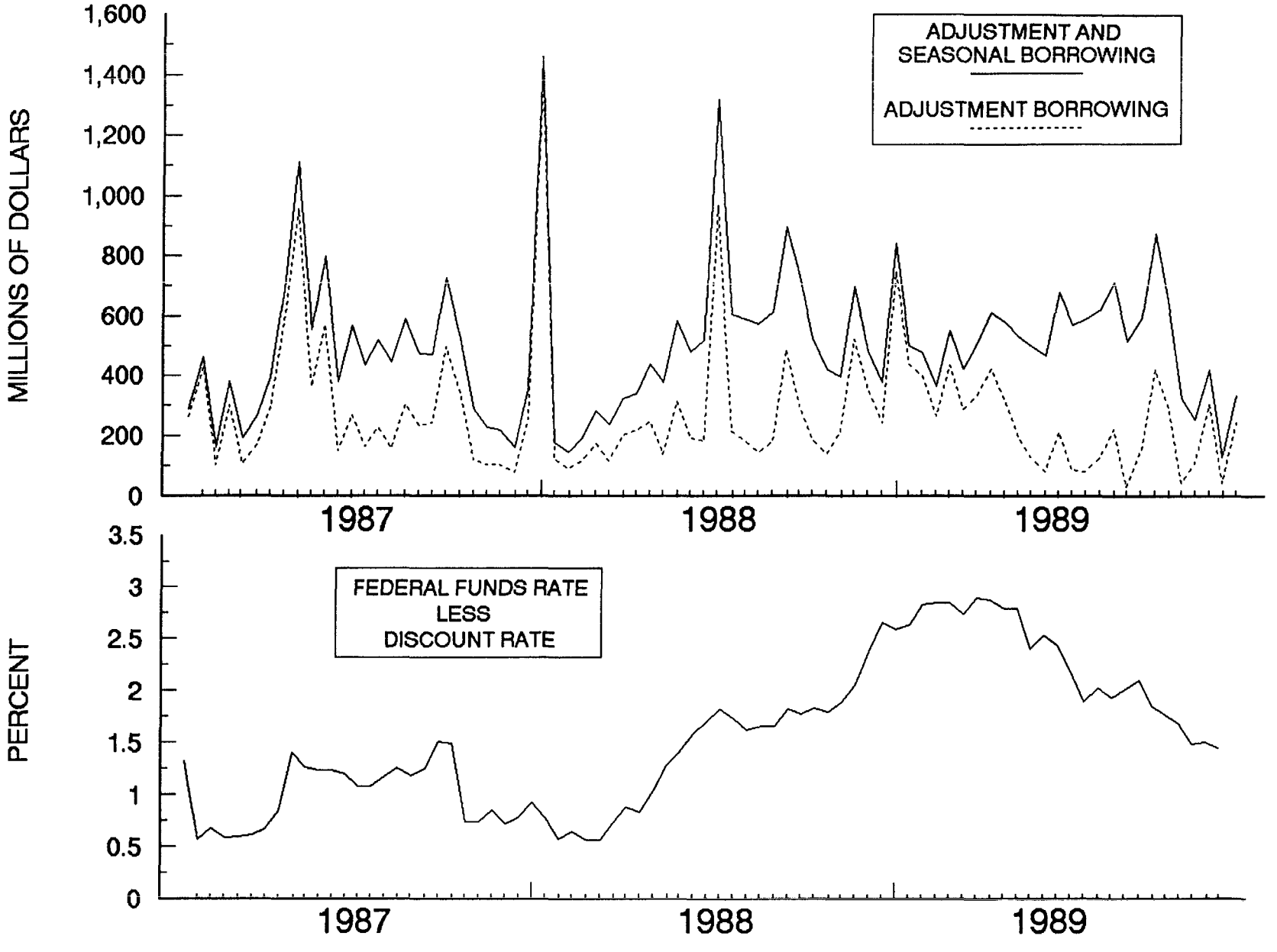
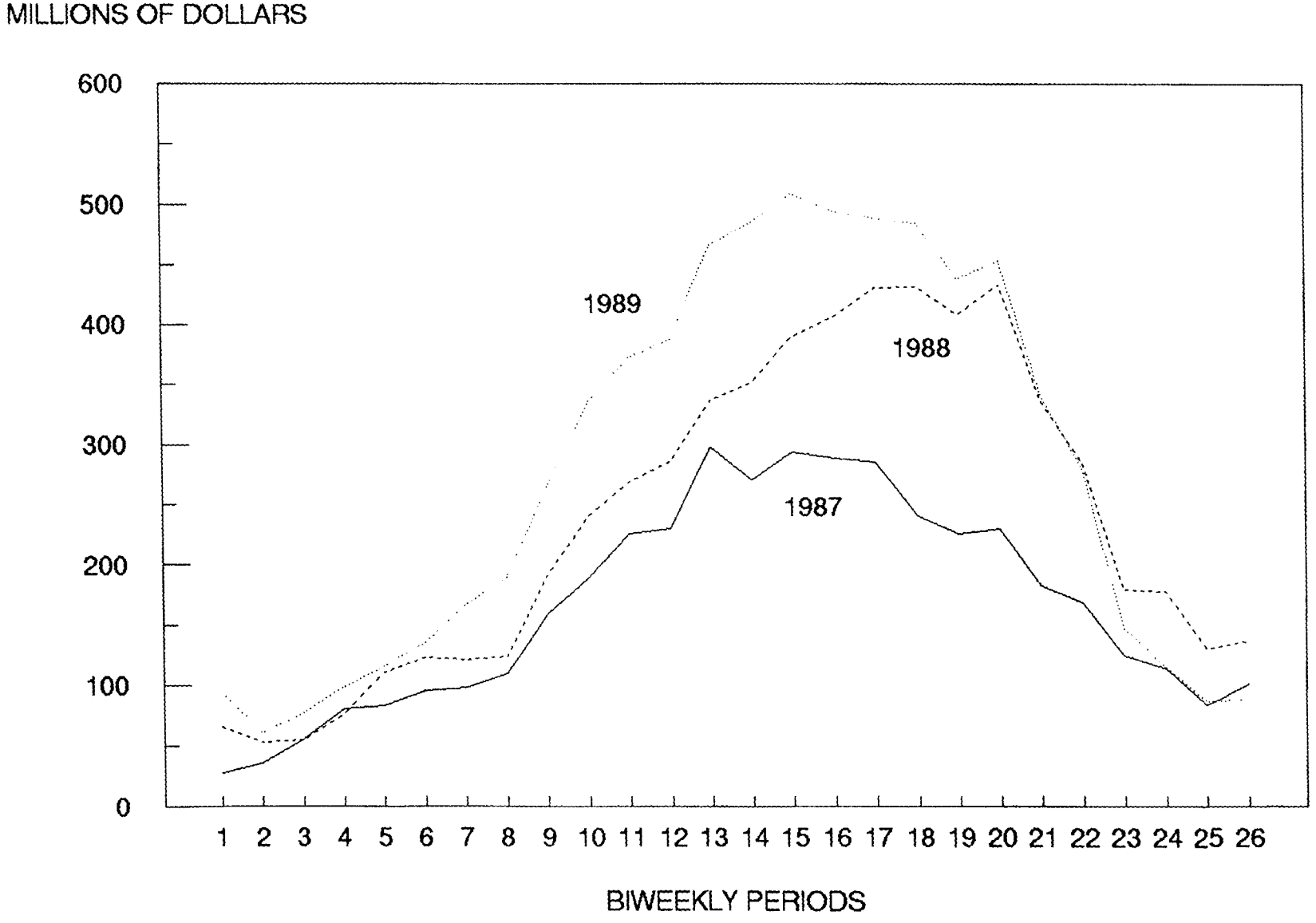


Chart 8

SEASONAL BORROWING
(biweekly averages)



declined in the early fall, downward technical adjustments were made in the October 18, November 15 (3 times), and December 13 maintenance periods. In the November 1 period, the borrowing allowance was reduced both to lower reserve pressures and to account for the decline in the use of the seasonal borrowing privilege. For the year as a whole, seasonal borrowing averaged $275 million per day, compared with $235 million in 1988 and $164 million in 1987.

Open Market Operations and Reserve Management

In seeking to bring nonborrowed reserves into line with the objective, the Desk takes account of both the expected duration and day-to-day pattern of reserve needs (or surpluses) in determining the timing and size of its open market operations. Projected reserve supplies are compared with the projected nonborrowed reserve objectives for the current maintenance period and a few subsequent periods. In choosing between permanent and temporary operations, the Desk considers whether the projected need to add (or drain) reserves is expected to persist for several consecutive maintenance periods. If so, the Desk would typically opt to address a portion of the need (or surplus) with outright purchases (or sales) of securities.

The nature and timing of the Desk's open market operations in 1989 differed substantially from those of earlier years because heavy purchases of foreign currencies in foreign exchange markets by U.S. monetary authorities added considerably to nonborrowed reserves. All intervention took the form of dollar sales (that is, purchases of foreign currency), and totaled an unprecedented $22 billion on behalf of both the Federal Reserve and the Treasury. The intervention was most heavily concentrated in the May-to-July period, when these sales totaled $11.92 billion--the largest U.S. intervention for any three-month reporting period. Another $5.9 billion were sold in the August-to-October interval.

The reserve impact of the 1989 dollar sales depended on how they were financed. In accord with regular practice, official U.S. intervention generally was shared equally by the U.S. Treasury, through the Exchange Stabilization Fund (ESF), and the Federal Reserve System. The Federal Reserve's share of the 1989 intervention created reserves because the intervention took the form of foreign currency purchases, paid for with reserve-creating dollars. In early 1989, as in most other years, the ESF's share of dollar sales had no reserve impact. The U.S. Treasury offset the reserve impact of the intervention by adjusting its balance at the Federal Reserve; it called in funds from its tax and loan accounts at depository institutions or reduced the size of a direct investment into those accounts. By March, however, the ESF had exhausted its supply of dollars to sell. Between mid-March and late May, it raised dollars by selling International Monetary Fund Special Drawing Rights (SDRs) to the Federal Reserve. The intervention financed by this method added reserves to the banking system at the time that the intervention settled. From mid-June to the end of the year, the Treasury funded its intervention by warehousing foreign currency with the Federal Reserve. Under this technique, the System bought foreign currency in a spot purchase from the ESF and simultaneously agreed to sell it back to the ESF at the same exchange rate for a future maturity date. (Such warehousing operations have been executed from time to time since 1963.) A reserve injection occurred at the time that the warehousing transaction settled because the ESF invested the proceeds with the Treasury, which in turn deposited them into its tax and loan accounts at commercial banks or reduced the amount it called in from these accounts.[1/]

The rise in the System's holdings of foreign currency and SDRs, most of which stemmed from the intervention in foreign exchange markets, provided about $23 billion of reserves during 1989 (December over December).

1/ A more extensive discussion of Treasury Tax and Loan accounts appears on pp. 53-54 below.

The increase in the System's foreign currency assets added $19.7 billion of reserves in 1989, compared with $2.2 billion in 1988, while the ESF's monetization of SDRs added $3.5 billion of reserves. The System's share of total intervention accounted for about $11 billion of the total increase in its foreign currency holdings, while the ESF's warehousing of foreign currency totaled $7 billion. The remaining rise in the System's foreign currency holdings stemmed from its portion of a swap arrangement with the Bank of Mexico, about $785 million, and interest earned on its foreign currency holdings, about $1 billion.

The reserve provision from foreign currency purchases and monetization of SDRs more than met the need for reserves for the year. The need for replenishing the supply of nonborrowed reserves primarily arose from the $12.3 billion increase in currency outstanding. (This increase was only about three-quarters of the 1988 rise.) Reserves were also drained by the $1.2 billion decline in extended credit borrowing (ECB).[1/] The major user of the program was taken over by the Federal Deposit Insurance Corporation (FDIC), and the FDIC paid off the user's borrowing in mid-June. On net, other operating factors added a modest amount of reserves. Meanwhile, required reserves showed their first decline since 1983, and excess reserves dropped modestly. With the supply of nonborrowed reserves from market factors, including ECB, exceeding demand, the size of the System's portfolio was reduced over 1989 for the first time since 1957. The $10.2 billion decline in the portfolio left its year-end level at $235.6 billion.[2/]

1/ ECB is viewed by the Desk as nonborrowed reserves because institutions using the ECB program cannot easily replace funds obtained through the ECB facility with other types of funding.

2/ The total reflects the commitment to purchase $200 million of Treasury securities from customer accounts made on the last business day of 1989, for delivery on January 2, 1990. It excludes the temporary reduction of the portfolio from that day's matched sale-purchase transaction with foreign accounts; the sale included a commitment to repurchase the securities on January 2.

The substantial reserve injection from foreign currency intervention and the offsetting reduction in the System portfolio has implications for the collateralization of Federal Reserve notes. Reserve notes held outside the vaults of the Federal Reserve are required to be collateralized by certain types of assets, as set forth in section 16 of the Federal Reserve Act ("the Act"). These assets include gold certificates, SDR certificates, "any obligations which are direct obligations of, or are fully guaranteed as to principal and interest by, the United States or any agency thereof," and "assets that Federal Reserve banks may purchase or hold under section 14 of this Act," as well as other paper, which is also defined in section 16 of the Act. Section 14 defines the assets that the System may purchase or hold pursuant to open market activities and includes "obligations of, or fully guaranteed as to principal and interest by, a foreign government or agency thereof." Consequently, foreign currency assets may legally be used to collateralize Federal Reserve notes.

In 1983, several members of the Congress expressed concern that foreign currency assets could be used to collateralize Federal Reserve notes. In response to this concern, Chairman Volcker informed Representative Fauntroy, in a letter dated September 28, 1983, that the Board had revised its procedures so that foreign currency assets could be pledged only with the Board's approval and only in "unusual and exigent circumstances." At present, the following System assets are pledged: gold certificates, SDR certificates, U.S. Government and Federal agency securities, discount window loans that have been assumed by the FDIC (eligible under section 16), and loans made under section 13 of the Act.

The level of excess collateral, defined as total available collateral less collateral used, fell during the year as the System portfolio shrank and its foreign currency holdings increased. Excess collateral was $34.4 billion at the end of 1988, but it had fallen to

$14.9 billion by the end of 1989. A cushion of that size would normally be adequate but could prove insufficient if movements in a reserve factor, such as float, were to call for large temporary absorption of reserves. Another risk factor would be heavy discount window borrowing that was not collateralized by paper eligible under section 13 of the Act. Should future dollar sales be significant, or if other factors work to reduce the margin of excess collateral, the System could face a situation that called for either the pledging of foreign-denominated assets against U.S. currency outstanding, or the use of some other source to retain the flexibility to conduct domestic open market operations.

The reduction of the System's portfolio in 1989 was accomplished through redemptions of Treasury bills at auctions and through sales of Treasury securities in the market and to foreign customer accounts. Typically, the Desk exchanges its maturing holdings of Treasury securities for new securities at auction time. Occasionally, however, the Desk may choose to roll over only a portion of its holdings, as it did frequently in 1989, and thus drain reserves. The Desk redeemed a total of $13.2 billion of Treasury securities in 1989. (The figure includes a $3.5 billion forced redemption on November 2, discussed below.) The total includes $500 million of Treasury notes redeemed in late September--the first time that the System has chosen to redeem coupon issues.[1/] The redemptions were heaviest in the May-to-July period, reflecting the need to offset foreign exchange intervention. This intervention also prompted the Desk to sell a record volume of bills in the market on July 12, an unusual action for that time of year. The $4.6 billion sale was the Desk's largest outright sale, exceeding the previous record by $1.5 billion. The Desk also sold Treasury bills in February, when the seasonal drop in currency and in required reserves

1/ The Desk redeemed a very modest amount of coupon issues in 1987 because it purchased some maturing notes from foreign accounts between the time of the auction for the replacement issue and the settlement day for that auction.

produced a sizable need to drain reserves. Finally, the Desk drained $1.3 billion of reserves in 1989 through net sales of Treasury securities to foreign customer accounts. In 1988, it made net purchases from these accounts that added $4.3 billion of reserves.

Nevertheless, the Desk at times arranged outright purchases of securities to address seasonal reserve needs, such as those that arose around tax dates and around the year-end. The Desk favored Treasury bill purchases on these occasions in order to offset part of the decline in its bills holdings from redemptions and sales. The Desk purchased both coupon issues and bills in April, and bills on two occasions in November. The April purchases were smaller than those of 1988 because projections showed that reserve needs would be smaller than usual in late May because of foreign exchange intervention. The Desk's purchase of bills in early November was prompted by its forced redemption of bills at the October 30 auction. The Treasury announced a settlement date for that auction of Tuesday, October 31, rather than Thursday, November 2, when the outstanding bills were to mature, because the debt ceiling was scheduled to drop on November 1. Since the Desk cannot buy securities directly from the Treasury, and it could not roll over its $3.5 billion of maturing bills, it was forced to redeem these holdings.

The net shrinkage in the System portfolio occurred in its bill holdings, which fell by $11.3 billion in contrast with a rise of $5.4 billion in 1988. The Desk increased the System's holdings of coupon issues by $1.3 billion in 1989, compared with $9.7 billion in 1988. As a result, the average maturity of the System portfolio lengthened a bit in 1989. The System's holdings of Federally sponsored agency securities decreased by about $440 million, just slightly below the previous year's redemptions.[1/]

1/ The Desk normally rolls over maturing Federally sponsored agency issues. Its holdings decline when issues are called or when issues mature and no eligible replacement is available.

The Desk also met reserve needs through temporary transactions. When determining the timing of these operations, it took into account the intraperiod distribution of reserve needs (surpluses). The Desk sought to avoid extraordinary reserve deficiencies or surfeits on individual days because both held the potential to induce movements in the Federal funds rate that could give misleading signals about the intent of policy. Moreover, a sizable daily reserve deficiency might leave the banking system with inadequate reserves for transactions clearing purposes, lead to extraordinary pressures in the reserve market, and force spikes in discount window borrowing that could preclude achieving the path level.

The Desk arranged about the same volume of temporary transactions in the market in 1989 as in 1988. Because of the reserve injection from foreign exchange intervention, the Desk made much greater use of temporary transactions to withdraw reserves in 1989. The volume of matched sale-purchase (MSP) transactions represented just over one-third of total temporary market transactions rather than the small shares of recent years. It arranged 69 rounds of matched sale-purchase agreements in the market for a total of $151 billion, compared with the 22 rounds for $63 billion that it executed in 1988. Nearly two-thirds of the total number of these draining operations were done for several business days at a time.

A smaller volume of repurchase agreements (RPs) was executed in 1989 in light of the substantial reserve injection from foreign currency intervention. Over the year, the Desk arranged 28 rounds of System RP transactions, for a total of $168 billion, and 61 rounds of customer-related RPs, for a total of $108 billion. Comparable figures for 1988 were 51 rounds of System RPs, for $210 billion, and 85 rounds of customer RPs, for $143 billion. Although the Desk conducted fewer rounds of System RPs, the average daily volume of those RPs was $3.7 billion greater than in 1988. The higher average volume partly stemmed from the decision to undertake a

smaller volume of outright purchases of securities to meet the reserve needs arising around the April tax date. The Desk met these needs primarily through temporary operations, rather than through its usual-size outright operations, since the reserve shortages were not anticipated to extend over several periods (and since actual reserve needs exceeded projections). In the May 3 and 17 maintenance periods, the Desk preannounced term System RPs on three occasions to ensure adequate propositions. On May 4, the Desk arranged a record $15.8 billion of System RPs to meet part of the reserve needs.

The Desk's temporary operations frequently responded to large day-to-day variations in reserve availability. It was also recognized that short-term transactions might at times help provide clearer policy guidance to financial market participants. Market participants often interpreted the use or eschewance of short-term transactions as evidence in judging whether the policy stance had changed; however, they did not always interpret Desk actions correctly.

A technical reserve injection on the day before Thanksgiving was misinterpreted by market participants and the subsequent efforts to correct the misimpression caused heavy borrowing in the November 29 maintenance period. On November 22, the Desk faced a fair-sized need to add reserves for the maintenance period then in progress, and large daily reserve deficiencies were projected for that day and for the remaining days of the period. During most of that morning, Federal funds were trading at 8 7/16 percent, just slightly below the 8 1/2 percent rate that participants perceived to be consistent with the FOMC's desired degree of reserve restraint. It was anticipated that many market participants would be on vacation on Friday, the day after Thanksgiving, making for relatively inactive securities trading and financing activity. In these circumstances, the Desk was concerned that a delay in addressing the estimated reserve need

could leave very large reserve needs toward the end of the period that might be difficult to meet. Hence, it decided to arrange five-day System RPs to meet the projected reserve shortage. Shortly before the Desk's regular time to enter the market, the funds rate slipped to 8 3/8 percent. Nonetheless, the Desk felt that its absence that day could lead to strains in the reserve market. When the Desk announced its operation, some market participants thought it might be signaling a move to ease policy.

On the Friday after the holiday, these misimpressions were reinforced by an erroneous newspaper article that cited "government officials" as confirming an easing step. The Desk attempted to dispel these notions by temporarily draining reserves from the banking system that morning even though a reserve need remained. Federal funds were trading at 8 1/4 percent during most of the morning; however, the funds rate dipped to 8 3/16 percent just before intervention time. In that circumstance, many observers interpreted the operation as signaling the extent of the downward adjustment to the funds rate and as indicating that an 8 1/4 percent funds rate was consistent with the Committee's desires. The funds rate retained a soft tone over the afternoon (although it firmed a bit at the close) and the reserve data released that afternoon were not interpreted by participants as showing an insurmountable reserve need. Hence, the misperception persisted into the following Monday morning, November 27. After discussion at an FOMC conference call on Monday morning, the Desk drained reserves before its customary intervention time, even though a large deficiency was anticipated. The drain corrected the market's misimpression about the policy stance, but left very large reserve needs which were met with heavy borrowing that evening and with large RP operations over the next two days.

The miscommunication resulted from a confluence of factors. The FOMC's most-recent decision to reduce reserve pressures, in early November, had come as a surprise to market participants, who had not been expecting

such a move until later in the month or at the time of the Committee's December meeting. There was speculation that another step might be in the offing, although discussions between Desk personnel and market participants did not indicate a widespread expectation of an imminent easing, even after the durable goods report released that morning had been weaker than anticipated. Moreover, analysts generally viewed the reserve need as being smaller than that suggested by the Desk's projections so, based on their estimates, a System operation did not seem necessary. Finally, the newspaper article seemed to confirm the view, which had previously been just a suspicion, that an easing might have occurred.

Forecasting Reserves and Operating Factors

When the Desk formulated a strategy for meeting reserve needs, it took account of potential revisions to the estimated demand for and supply of reserves. On the demand side, these revisions could take the form of changes in estimated required reserve levels or in the banking system's desired excess reserve balances. On the supply side, revisions to estimated operating factors, or sources and uses of nonborrowed reserves other than open market operations, could change the reserve outlook. In both cases, revisions late in the maintenance period were especially difficult to deal with since they could necessitate very large reserve operations.

The accuracy of required reserve forecasts was about unchanged in 1989 relative to the previous year. The mean absolute error in forecasting required reserves on the first day of the period was around $325 million in 1989, compared with about $300 million in 1988.[1/] This steady forecasting performance came despite an increase of $125 million in the mean absolute

1/ The Trading Desk uses forecasts of required reserves, excess reserves, and operating factors made by both the Federal Reserve Bank of New York (FRBNY) and Board staffs. When a range of forecast errors is given in the following discussion, it reflects varying degrees of success in forecasting reserve measures by the two staffs.

period-to-period change in required reserves. Forecasts became more accurate as the maintenance period progressed; the mean absolute prediction error fell to roughly $200 million at midperiod, and to about $70 to $90 million on the final day. These errors are a bit larger than their 1988 counterparts. Nonetheless, some sizable revisions took place after the maintenance period ended, especially late in the year, and were particularly troublesome because their impacts could not be offset by open market operations.

Excess reserves were somewhat more predictable in 1989 than in 1988. The beginning-of-period mean absolute forecast errors were about $135 to $150 million, compared with $160 million in 1988.[1/] The mean absolute period-to-period change in excess reserves was about the same as in 1988. The largest forecast errors occurred in the April 19 maintenance period, when excess reserves averaged $223 million, the lowest level since contemporaneous reserve accounting was introduced in February 1984.

The average level of excess reserves held by the banking system shrank to $970 million in 1989 from just over $1 billion in 1988. Excess reserves had risen year by year from 1979 through 1987, and then had stabilized in 1988. The provisions of the Monetary Control Act of 1980 and increased turnover of reserve accounts that had contributed to this expansion appeared to have run their course.[2/] Since large banks tend to monitor their reserve balances closely in order to avoid holding non-interest-bearing excess reserves, their average holdings of excess reserves over a year are typically close to zero. These banks generally

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1/ These reported forecast errors overstate the degree of uncertainty about excess reserves. The Desk supplements beginning-of-period and midperiod forecasts with informal adjustments that are based on the observed pattern of estimated excess reserve holdings as each maintenance period unfolds.

2/ See discussion in 1988 report, page 46 (unpublished) or page 101 (published).

make use of the carryover privilege, under which banks can apply a portion of the excess reserves held in one period to their requirements in the following period. Carryovers tend to produce a sawtooth pattern of excess reserve holdings at large banks, and this pattern at times showed through to aggregate excess reserve holdings during 1989. Smaller banks, however, do not generally have the resources to devote to monitoring their reserve positions accurately and they tend to hold positive levels of excess reserves.

Despite a marked jump in the variability of operating factors from period to period in 1989, the accuracy of operating factor forecasts was about the same as in 1988. The mean absolute error of first-day forecasts was about $900 million to $1.1 billion in 1989, compared with $900 million to $1 billion in the previous year. While projections of reserves supplied by operating factors improved as the period progressed, the average absolute errors increased relative to their 1988 levels. The mean absolute forecast error around midperiod was about $450 million and that for the final day of the period was roughly $70 to $90 million. In 1988, these errors were $325 to $470 million, and about $50 million, respectively. Overall, there was a tendency to overestimate the supply of reserves from operating factors.

The 1989 forecasting performance looks better when compared with the mean absolute period-to-period change in operating factors. The mean absolute change was $3.4 billion per period, up sharply from $2.0 billion in the previous year. As a proportion of the average absolute change, mean absolute errors in forecasting operating factors on the first day of the period were only about half as much as their 1988 counterparts.

Much of the increase in the average period-to-period change of operating factors reflected the behavior of the Treasury's balance at the Federal Reserve. The Treasury tries to maintain a $5 billion balance in

this account.[1/] If the Treasury anticipates that its balance will fall below the $5 billion target level, then it can "call" funds from the Treasury Tax and Loan (TT&L) accounts at participating depository institutions (DIs) to bring its balance up to the target level. Similarly, if the Fed balance were expected to exceed $5 billion, the Treasury could directly invest funds into the TT&L accounts as long as these accounts were not at their capacity. Since DIs must fully collateralize and pay interest on TT&L funds, DIs set limits on the total amount of funds they will accept based on their profitable use of these funds and the availability of collateral. A DI that receives funds in excess of its limit remits the excess to the Treasury's Federal Reserve balance. Large remittances typically occur around major tax dates, when the volume of funds flowing into the TT&L accounts substantially exceeds capacity. In 1989, capacity limitations forced the Treasury's Fed balance to exceed its target level on about 55 business days, compared with about 40 days in 1988.

The mean absolute period-to-period change in the Treasury's balance rose to $2.8 billion in 1989 from $1.5 billion in 1988. The increased variability of the balance stemmed in part from an increase in tax receipts in 1989 relative to 1988, while the capacity of the TT&L accounts remained about unchanged. With TT&L capacity remaining at roughly $30 billion, the substantially higher volume of tax payments received by the Treasury in 1989, especially in April and June, caused its Federal Reserve balance to surge to levels significantly above those in 1988. For example, the Treasury's Fed balance averaged $15.1 and $19.7 billion in the May 3 and 17 maintenance periods, but averaged only $9.2 and $9.6 billion for the corresponding periods in 1988.[2/] The buildup and retreat of the

1/ In late 1988, the Treasury raised this target level to $5 billion from $3 billion in order to reduce the likelihood of an inadvertent overdraft.

2/ In 1989, the Treasury's Fed balance averaged $14.9 billion per day on those days when TT&L accounts were at capacity, compared with $10.7 billion in 1988.

make use of the carryover privilege, under which banks can apply a portion of the excess reserves held in one period to their requirements in the following period. Carryovers tend to produce a sawtooth pattern of excess reserve holdings at large banks, and this pattern at times showed through to aggregate excess reserve holdings during 1989. Smaller banks, however, do not generally have the resources to devote to monitoring their reserve positions accurately and they tend to hold positive levels of excess reserves.

Despite a marked jump in the variability of operating factors from period to period in 1989, the accuracy of operating factor forecasts was about the same as in 1988. The mean absolute error of first-day forecasts was about $900 million to $1.1 billion in 1989, compared with $900 million to $1 billion in the previous year. While projections of reserves supplied by operating factors improved as the period progressed, the average absolute errors increased relative to their 1988 levels. The mean absolute forecast error around midperiod was about $450 million and that for the final day of the period was roughly $70 to $90 million. In 1988, these errors were $325 to $470 million, and about $50 million, respectively. Overall, there was a tendency to overestimate the supply of reserves from operating factors.

The 1989 forecasting performance looks better when compared with the mean absolute period-to-period change in operating factors. The mean absolute change surged to $4.4 billion per period, nearly double the $2.5 billion of the previous year. As a proportion of the average absolute change, mean absolute errors in forecasting operating factors on the first day of the period were only about half as much as their 1988 counterparts.

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1/ In late 1988, the Treasury raised this target level to $5 billion from $3 billion in order to reduce the likelihood of an inadvertent overdraft.

2/ In 1989, the Treasury's Fed balance averaged $14.9 billion per day on those days when TT&L accounts were at capacity, compared with $10.7 billion in 1988.

Treasury's balance resulted in large changes from one period to the next and caused the absolute period-to-period change in the balance to rise in 1989.

The forecast errors for the Treasury balance were a bit larger than in 1988. The mean absolute errors of the first-day forecasts were about $725 to $800 million, compared with $700 to $750 million in 1988. These errors were elevated somewhat by large forecast errors in the October 4 period. During this period, the Treasury was informed that an $8.1 billion payment would be made by the RTC on September 29. This payment was incorporated into the forecasts and a call was made for funds from the TT&L accounts. It turned out that only $200 million of the payment was made. Consequently, the Treasury's Fed balance exceeded expectations by about $6 1/2 to $7 1/2 billion, and contributed to large forecast misses for the period-average Treasury balance.

Initial forecasts of U.S. currency, the foreign RP pool, float, and foreign currency were subject to sizable revisions as the period progressed. U.S. currency was difficult to predict in 1989, in part because it grew considerably more slowly than is typical during most of the year, but then experienced a year-end bulge that was somewhat larger than usual. The beginning-of-period mean absolute forecasting errors were was about $350 to $400 million, somewhat above their 1988 levels. Forecasting the foreign RP pool on a two-week average basis was also harder, with a first-day average absolute forecast error of about $275 million, but the level of the pool was also somewhat more variable in 1989 than in 1988. First-day forecasts of Federal Reserve float, including so-called "as-of" adjustments that correct various reserve transfer errors, had mean absolute errors of about $200 to $225 million. Forecasts of foreign currency had a beginning-of period mean absolute error of about $200 million; however, this error overstates the uncertainty the Desk faced. The reserve effect of foreign currency intervention occurs two days after the transaction. The Desk was

informed about the size of the intervention on the day before the transaction settled, so that it knew one day in advance what the reserve impact would be. As the Desk was also informed about warehousing transactions before they occurred, the deterioration in forecast accuracy did not pose significant day-to-day difficulties in implementing policy.

Concluding Comment

During 1989 it has become increasingly evident that, say what we will about our implementation procedures for open market operations, essentially we are targeting a Federal funds rate. We tell ourselves, and the rest of the world, that we target "reserve pressures"--to be measured by the gap between nonborrowed reserves provided by Fed and reserves demanded by the banking system, a gap that we expect to be filled by adjustment and seasonal borrowing. We acknowledge that the "borrowing gap" used in constructing the reserve path is adopted by the FOMC against the background of an expected Federal funds rate, and seek to maintain that this approach allows some flexibility for movement in the funds rate that distinguishes it from the relatively rigid Fed funds targeting in the years before October 1979. There is some validity to this distinction, but we may delude ourselves if we regard this approach as significantly different from Fed funds targeting. Our oft-stated need to regard the borrowing objective "flexibly" in view of the uncertain relationship between borrowing and the Fed funds rate is essentially saying that we are quite ready to adjust the "borrowing target" when it is not giving us the desired Fed funds rate--so which is the "real" target? With the passage of time under this regime, the market has come to pay less attention to changes in borrowing and more to the funds rate. The way the rest of the world looks at this was driven home forcefully last November 22, when a reserve injection that should have been widely expected on seasonal grounds led to market misunderstanding of the

System's policy stance because the Federal funds rate at the time was slightly to the low side of the presumed System target zone.

The disadvantages of an avowed Fed funds target, as we saw in the 1970's, include, first, a high visibility that gives an announcement effect to changes fairly similar to discount rate changes, which may make the central bank overly cautious about implementing needed changes. Second, overt funds rate targeting assumes that we know the right level to aim for--granted, to be sure, that a similar criticism could apply to levels of borrowing as well. At present, given that there really is uncertainty about the borrowing-interest rate relationships, it may be very difficult indeed to avoid the appearance of Fed funds targeting. But at least, we could steer away from the worst aspects of such targeting by seeking ways to let the market become more accustomed to a little wider range of variation in the funds rate. Yet this is not an easy path to follow--witness the events of last November 22 which, while not really undertaken for that purpose, one could regard as an unsuccessful effort to loosen the market's close fixation on the funds rate. The end result seemed to be that we were boxed in even more tightly than before, as we took special pains to avoid further misunderstandings of that type.

It may be just wishful thinking, but perhaps it is not too much to hope that with careful nurturing, a bit more flexibility of the funds rate can be developed and maintained, pending the day when we can step forward with greater confidence to use borrowings or some other type of reserve-oriented target in a manner that would restore appreciably greater flexibility to the funds rate.

APPENDIX A

BANK RESERVES AND THE SYSTEM PORTFOLIO

System holdings of U.S. Treasury and Federal agency securities fell by $10.2 billion (commitment basis) in 1989, the first decline since 1957 and the largest decline ever sustained for a year. The contraction of the portfolio contrasted sharply with the average annual increase of $16.3 billion over the preceding five years. The shrinkage came in response to the heavy dollar sales by U.S. monetary authorities to stem the rise of the dollar in foreign exchange markets. These sales primarily occurred in the May-to-October period. As a result of the massive size of this intervention, market factors, on net, added reserves during the year rather than drained them. Meanwhile, borrowed, required, and excess reserves all declined from their December 1988 levels. Extended credit borrowing declined sharply.

The Desk responded to the increased supply of reserves from operating factors by reducing the System's portfolio of securities through a much larger volume of outright sales and redemptions of securities than in 1988. Matched sale-purchase agreements, which drain reserves temporarily, were also employed to offset the increased supply of reserves. Nonetheless, the Desk at times faced seasonal and temporary needs to add reserves. These needs were addressed by arranging outright purchases of securities and repurchase agreements (both System and customer-related), although in considerably smaller volume than in 1988. The average maturity of the System's Treasury holdings rose 0.4 month by year-end, reflecting a sizable reduction of the System's Treasury bill holdings and a modest increase in its coupon holdings.

Bank Reserves

As shown in Table A-1, nonborrowed reserves excluding extended credit borrowing rose modestly from December 1988 to December 1989; however, when extended credit borrowing is included, nonborrowed reserves fell modestly.[1/] Extended credit borrowing dropped by $1.2 billion in 1989 because the major user of the program was taken over by the Federal Deposit Insurance Corporation (FDIC), and its borrowing was paid off by a note from the FDIC. The drain on nonborrowed reserves from the growth of currency was more than offset by the rise in foreign currency holdings of the System as well as by the increase in Special Drawing Rights.

Total borrowed reserves, including extended credit borrowing, fell sharply. Adjustment plus seasonal borrowing declined in 1989 (December over December). The downward movement in this measure primarily reflected the Committee's reduction of reserve pressures. On an annual-average basis, adjustment plus seasonal borrowing was roughly unchanged.

Required reserves declined for the first time since 1983 primarily because requirements on nontransactions deposits fell. This fall stemmed from a contraction in reservable nontransactions deposits brought on by a decline in nonpersonal time and savings deposits at thrifts. Funds held in these accounts were mostly shifted into nonreservable accounts.

Requirements on transactions deposits fell modestly in 1989. The annual indexing of the break between the 3 and 12 percent reserve tranches, specified by the Monetary Control Act of 1980, and the increase in the exemption amount, which is adjusted annually under the terms of the Garn-St Germain Act, were estimated to have lowered total requirements on transactions

1/ ECB is viewed as being more akin to nonborrowed reserves than borrowed reserves because institutions using it cannot easily replace it with other types of funding. The Desk takes account of projections of ECB when planning its operations.

TABLE A-1

BANK RESERVES
(In millions of dollars*)

	December 1989 Level	Change during ** 1989	Change during ** 1988	Annual Averages 1989	Annual Averages 1988
Nonborrowed Reserves					
Excluding extended credit	62544	521	677	59556	59515
Including extended credit	62564	-703	1438	60176	61346
Extended credit borrowing	20	-1224	761	620	1831
Borrowed Reserves					
Including extended credit	266	-1450	939	1138	2361
Adjustment plus seasonal	246	-226	178	518	530
Adjustment	162	-180	141	243	294
Seasonal	84	-46	37	275	236
Required Reserves #	61888	-811	1605		
On transactions deposits #	48112	-34	1506		
On nontransactions deposits #	13775	-779	101		
Excess Reserves	922	-118	11	970	1025
Operating Factors (in billions)					
Foreign Currency	27.4	19.7	2.1	17.1	6.3
U.S. Currency	256.9	12.3	17.2	247.3	233.1
Treasury balance	4.8	-0.6	1.2	7.3	5.0
Federal Reserve Float	1.1	-0.1	-0.1	0.9	1.0
Special Drawing Rights	8.5	3.5	0	7.4	5.0
Gold Deposits	11.1	0	0	11.1	11.1
Foreign Deposits	0.3	0	0	0.2	0.2
Applied Vault Cash	27.4	1.5	1.5	26.5	24.9
Other items	18.2	-0.8	0.8	19.2	18.3
Foreign RP pool ##	5.6	0.4	0.5	5.0	4.9

* unless otherwise noted
** December over December
\# Not break adjusted
Includes customer-related repurchase agreements

Note: Figures may not add to totals due to rounding.

deposits by $210 million. If the impact of this indexation is removed from the data (that is, they are "break adjusted"), then required reserves on transactions deposits rose, despite a decline in these deposits over the year. This seemingly contradictory result occurred because the composition of reservable transactions deposits shifted. Deposits were moved out of thrifts and into other institutions as a result of the consolidation of thrifts into larger institutions and as depositors shifted funds out of thrifts in recognition of their difficulties. Since the larger institutions have higher reserve ratios, these shifts raised the effective required reserve ratio on total transactions deposits and thus elevated total requirements on transactions deposits for the year. The "not-break-adjusted" data showed a modest decline because these higher requirements did not fully offset the impact of the indexation.

Excess reserves fell slightly in 1989. The nominal path allowance for excess reserves was maintained at $950 million throughout the year, except in the February 8 period, when it was raised to $1.2 billion to allow for high seasonal demand. Informal adjustments were made at times to allow for higher or lower demand.

System Portfolio

The System Account dropped to $235.6 billion by the end of 1989, as shown in Table A-2. The decline mostly took place in Treasury bill holdings. Holdings of Treasury coupon issues rose modestly after having increased substantially in the previous year. Meanwhile, net Treasury bill issuance totaled $16.7 billion, while net coupon issuance was $107.3 billion. As a result of the shift in System Accounts holdings and the composition of net issuance of Treasury securities, the System's share of outstanding Treasury debt declined to just under 25 percent of bills by the end of 1988, and to 8.1 percent of coupon issues. (See Table A-3.)

TABLE A-2

System Portfolio: Summary of Holdings*
(In billions of dollars)

	Year-end 1989 Level	Change during** 1989	1988
Total Holdings	235.6	-10.2	14.5
Bills	106.8	-11.1	5.4
Coupons	122.2	1.3	9.7
Agency issues	6.5	-0.4	-0.6

* Commitment basis
**December 31 over December 31
Note: Figures may not add to totals due to rounding.

Table A-4 shows that total outright activity (purchases, sales, and redemptions) in Treasury debt surged, and was nearly twice its 1988 level.[1/] Activity was roughly equally divided among purchases, sales, and redemptions, with the bulk of the activity in Treasury bills. The volume of both redemptions and purchases was elevated by the Desk's forced redemption of $3.5 billion of Treasury bills at the October 30 auction. The Treasury scheduled the settlement date for this auction on Tuesday, October 31, rather than Thursday, November 2, when the bills matured, because the temporary increase in the debt ceiling expired on November 1. Consequently, the Desk could not exchange its maturing holdings of November 2 bills for those auctioned on October 30. To replenish this drain, the Desk purchased about $3.2 billion of bills in the market on November 1. The System also purchased bills in the market on two other occasions (April 26 and November 29) to meet seasonal needs to add reserves. It purchased coupons on one occasion (April 5), and total purchases of coupon issues in 1989 dropped sharply from their 1988 level. However, total outright sales of securities surged. These sales included the record $4.6 billion of bills sold in the market on July 12, to offset partially the massive reserve injection from foreign currency, and a

1/ Also see Table A-7 at end of this appendix.

TABLE A-3

SYSTEM PORTFOLIO OF TREASURY AND AGENCY SECURITIES *
(In millions of dollars)

Treasury Securities

End of	Total Portfolio	Bills	%	Coupon Issues: Under 1 year	%	1-5 years	%	5-10 years	%	Over 10 years	%	Federal Agency Securities	%
1960	26,984	2,900	10.7	11,955	44.3	10,680	39.6	1,178	4.4	271	1.0	0	0.0
1965	40,478	9,101	22.5	15,478	38.2	14,066	34.7	1,448	3.6	385	1.0	0	0.0
1970	62,142	25,965	41.8	10,373	16.7	19,089	30.7	6,046	9.7	669	1.1	0	0.0
1975	93,290	37,708	40.4	8,730	9.4	30,273	32.5	6,425	6.9	4,082	4.4	6,072	6.5
1980	131,344	46,994	35.8	12,749	9.7	34,505	26.3	13,354	10.2	15,002	11.4	8,739	6.7
1981	139,835	52,331	37.4	13,968	10.0	36,025	25.8	11,752	8.4	16,634	11.9	9,125	6.5
1982	147,889	57,771	39.1	17,411	11.8	35,102	23.7	12,095	8.2	16,574	11.2	8,937	6.0
1983	164,292	70,899	43.2	20,143	12.3	33,106	20.2	13,485	8.2	18,014	11.0	8,645	5.3
1984	171,452	74,875	43.7	16,784	9.8	37,072	21.6	14,100	8.2	20,233	11.8	8,389	4.9
1985	190,072	89,471	47.1	20,179	10.6	35,650	18.8	14,785	7.8	21,759	11.4	8,227	4.3
1986	210,249	108,571	51.6	18,863	9.0	36,469	17.3	15,451	7.3	23,066	11.0	7,829	3.7
1987	231,243	112,475	48.6	22,966	9.9	47,512	20.5	15,313	6.6	25,424	11.0	7,553	3.3
1988	245,756	117,910	48.0	26,123 r	10.6 r	55,279 r	22.5 r	12,568	5.1	26,909	10.9	6,966	2.8
1989	235,566	106,847	45.4	28,883	12.3	54,076	23.0	12,529	5.3	26,706	11.3	6,525	2.8

* Commitment basis.
% As percent of total System Account portfolio.
Note: Figures may not add to totals due to rounding.

System Holdings of Treasury Securities as a Percentage of Total Marketable Debt Outstanding

End of	Total Treasury Issues	Within 1 year: Bills	Coupons	Total	1-5 years	5-10 years	Over 10 years
1960	14.3%	7.4%	34.8%	20.1%	14.8%	6.3%	1.1%
1965	18.9	15.1	46.6	26.3	23.2	4.2	1.5
1970	25.1	29.5	29.2	29.4	23.2	26.8	3.4
1975	24.0	23.9	20.7	23.3	27.0	24.3	16.5
1980	19.7	21.7	15.7	20.1	17.5	21.7	22.4
1981	18.1	21.4	14.7	19.5	15.8	18.5	18.9
1982	15.8	18.5	16.1	17.9	12.6	13.4	17.8
1983	14.7	20.6	13.9	18.6	10.0	11.1	15.5
1984	13.1	20.0	9.9	16.8	9.2	9.3	13.8
1985	12.8	22.4	10.2	18.4	7.7	8.2	11.8
1986	12.6	25.4	9.0	20.0	6.9	7.1	10.3
1987	13.1	28.9	9.4	21.3	8.2	6.4	9.9
1988	13.2	28.5	10.1 r	21.4 r	9.1 r	5.1	9.5
1989	11.9	24.8	10.5	19.2	8.5	4.7	8.3

Weighted Average Maturity of Federal Reserve Holdings and Marketable Treasury Issues Outstanding

End of	System Account (a) #	Total Outstanding	Public Holdings (b)
1960	19.4 months	55 months	58 months
1965	16.1 "	60 "	63 "
1970	24.0 "	40 "	41 "
1975	31.4 "	33 "	29 "
1980	55.2 "	48 "	45 "
1981	53.1 "	50 "	48 "
1982	49.2 "	47 "	46 "
1983	50.0 "	51 "	51 "
1984	51.6 "	55 "	55 "
1985	48.6 "	59 "	60 "
1986	45.9 "	62 "	64 "
1987	44.0 "	66 "	69 "
1988	42.3 "	67 "	70 "
1989	42.7 "	69 "	72 "

(a) System Account holdings are on a commitment basis.
(b) Total less System and Government accounts.
Includes matched transactions but does not include System RPs and agency issues; weighted by par value of holdings.
r Revised from 1988 annual.

TABLE A-4

SYSTEM OUTRIGHT OPERATIONS*
By Type of Transaction and By Counterparty
(In billions of dollars)

	1989	1988
Total Outright	43.8	23.2
By Type of Transaction:		
Purchases	16.8	18.9
Bills	14.5	8.2
Coupons	2.3	10.6
Sales	13.3	1.6
Bills	12.8	0.6
Coupons	0.5	1.0
Redemptions	13.7	2.8
Bills	12.7	2.2
Coupons	0.5	0
Agency Issues	0.4	0.6
By Counterparty:		
Total Outright in Market	19.9	13.0
Purchases	12.2	13.0
Bills	10.1	3.0
Coupons	2.2	10.1
Sales	7.6	0
Bills	7.6	0
Coupons	0	0
Total Outright with Foreign Accounts	10.3	7.4
Purchases	4.6	5.8
Bills	4.4	5.2
Coupons	0.2	0.6
Sales	5.7	1.6
Bills	5.2	0.6
Coupons	0.5	1.0

* Commitment basis.
Note: Figures may not add to totals due to rounding.

routine sale on February 1, to absorb reserves released from the seasonal drop in currency and required reserves.

Just under half of total outright activity was conducted in the market, with the remainder split roughly equally between foreign account transactions and redemptions. Somewhat more than half of the transactions conducted in the market were purchases. Sales to foreign accounts were slightly larger than purchases from them.

Activity in Federally sponsored agency issues, as in the previous year, was limited to rollovers and redemptions. Rollovers, which totaled $3 billion, and redemptions were both a bit lower than their 1988 levels. Redemptions occurred because maturing issues were not replaced, or because part of an issue was no longer eligible to be purchased by the System Account or was called early by the issuer. The System's holdings of agency issues at year-end comprised 2.8 percent of the portfolio. Of the total Federal agency issues held by the System, 36 percent were in FNMA issues, 34 percent in FHLB issues, and 27 percent in Federal Farm Credit System and Federal Land Bank issues. The remaining 3 percent consisted of issues that are no longer eligible for purchase by the System Account.

Repurchase Agreements and Matched Sale-Purchase Transactions

As in past years, self-reversing transactions were used to add or absorb reserves temporarily to help smooth uneven patterns of reserve availability that arose from movements in market factors. These transactions also supplemented outright transactions at times of especially large reserve needs (or surfeits). Matched sale-purchase transactions were arranged daily with foreign accounts to meet the demand for overnight foreign investment orders; however, on occasions when it was appropriate to the Desk's reserve management objectives, some of these orders were arranged in the market.

The total volume of temporary transactions increased modestly in 1989 to $1.6 trillion, as shown in Table A-5. In light of the net reserve injection from market factors, the number and volume of matched sale-purchase transactions in the market were much higher in 1989 than in 1988. These transactions were outstanding on 142 days in 1989, compared with 36 days in 1988. The average daily balance of the entire foreign RP pool was $4.95 billion, about unchanged from 1988. Since fewer of these investment orders were passed through to the market in 1989, the average daily volume of those orders that were invested with the System Account, through MSPs, increased to $4.7 billion from $4.4 billion in 1988. Meantime, the number and volume of both System and customer-related repurchase agreements fell. While less in total volume, the average daily reserve provision from System RPs in 1989 was $7.7 billion, up sharply from $4.0 billion in 1988.[1/] System RPs were outstanding on 61 days, compared with 96 days in 1988. The maximum balance outstanding was a record $15.8 billion on May 4, after the Desk arranged $6.6 billion of four-day, and $9.3 billion of seven-day System RPs.

System Lending Operations

Lending of Treasury securities held in the System Open Market Account to primary dealers rose moderately (Table A-6), amid sharply higher secondary market activity. The average daily volume of primary dealer activity in the secondary market, including interdealer trades, rose almost 18 percent from its 1988 average to $119.5 billion (preliminary). Most of the dollar volume in lending was in Treasury bills.

Trading Relationships

The list of dealers with which the Desk was prepared to execute trades in Treasury and Federally sponsored agency securities on behalf of the

1/ The average daily volume was computed by dividing the total volume weighted by maturity by the number of calendar days such transactions were outstanding. This calculation abstracts from early withdrawals.

TABLE A-5

SYSTEM TEMPORARY TRANSACTIONS
(In billions of dollars)

	1989		1988	
	Number*	Volume	Number*	Volume
Repurchase Agreements				
System	28	168.4	51	209.9
Maturing next business day	12	57.5	27	119.8
Term	16	110.8	24	90.1
Customer-related	61	108.2	86	142.6
Matched Sale-Purchase Agreements				
In market	69	151.1	22	62.6
Maturing next business day	22	40.4	14	36.1
Term	47	110.8	8	26.5
With foreign accounts**	251	1172.3	251	1105.9
Total Temporary Transactions	409	1600.0	410	1521.0
In Market	158	427.7	159	415.1

* Number of rounds.
** Excludes those arranged as customer-related RPs
Note: Figures may not add to totals due to rounding.

TABLE A-6

FEDERAL RESERVE LENDING OF TREASURY SECURITIES TO PRIMARY DEALERS
(In millions of dollars)

	1989	1988	PERCENTAGE CHANGE IN TOTAL 1988 - 1989
Number of Loans	6,323	6,037	+ 4.7%
Total Amount	$104,092	$98,695	+ 5.5
	Daily Averages		
Number of Loans	25	24	+ 4.2%
Amount	$ 416.4	$ 394.8	+ 5.5
Balance Outstanding	$ 790.2	$ 721.2	+ 9.6
Size of Each Loan	$ 16.7	$ 16.5	+ 1.2
	Distribution of Loans (daily averages)		
Bills	$ 698.9	$ 632.3	+10.5%
Coupon Issues	91.3	88.9	+ 2.7
Total	$ 790.2	$ 721.2	+ 9.6

System Open Market Account changed in 1989 to reflect one addition, one deletion, and five changes in legal entity. (The dealers with which the Desk trades are all on the list of primary dealers reporting to the Federal Reserve Bank of New York that appears at the end of Appendix D.) Effective April 4, Yamaichi International (America) Inc. was added to the list of authorized dealers. As of April 28, Lloyds Government Securities Corporation withdrew from the group of primary dealers and was removed from the list of authorized dealers. The changes in organization or ownership affecting the list of reporting primary dealers are discussed in Appendix D.

TABLE A-7

DOLLAR VOLUME OF TRANSACTIONS EXECUTED BY TRADING DESK 1989 and 1988*
(In millions of dollars)
Source Account

	Total		System		Foreign		Treasury Investment Accounts		Member Banks	
	1989	1988	1989	1988	1989	1988	1989	1988	1989	1988
Counterparty										
Market	506,537	512,064	339,344	285,495	167,189	226,311 (b)	3	257	(a)	1
System Account	1,182,643	1,113,287	-	-	1,182,643	1,113,287	-	-	-	-
Treasury	13,672	2,787	13,672 #	2,787 #	-	-	-	-	-	-
Foreign	1,183,732	1,115,052	1,182,643	1,113,287	1,089	1,765	-	-	-	-
Retirement Account & Others	-	-	-	-	-	-	-	-	-	-
Total	2,886,583	2,743,190	1,535,659	1,401,569	1,350,921	1,341,363	3	257	(a)	1
Outright Transactions										
Purchases										
Treasury Bills	36,015	40,074	14,484	8,222	21,531	31,852	-	-	-	(a)
Treas. Coupon Issues	5,742	22,874	2,334	10,640	3,408	12,234	-	-	(a)	(a)
Agency Issues	3	100	-	-	-	-	3	99	-	-
Cert. of Deposit	91	270	-	-	91	270	-	-	-	-
Bankers' Acceptances	824	1,095	-	-	824	1,095	-	-	-	-
Total Purchases	42,674	64,414	16,818	18,862	25,853	45,451	3	99	(a)	(a)
Sales and Redemptions										
Treasury Bills:										
Sales	30,729	19,011	12,817	588	17,913	18,423	-	-	-	-
Redemptions	12,730	2,200	12,730	2,200	-	-	-	-	-	-
Treasury Coupon Issues:										
Sales	5,214	2,619	519	975	4,695	1,490	-	154	(a)	(a)
Redemptions	500	-	500	-	-	-	-	-	-	-
Agency Issues:										
Sales	-	3	-	-	-	-	-	3	-	-
Redemptions	442	587	442	587	-	-	-	-	-	-
Cert. of Deposit	-	-	-	-	-	-	-	-	-	-
Bankers' Acceptances	119	31	-	-	119	31	-	-	-	-
Total Sales and Redemptions	49,734	24,451	27,008	4,350	22,727	19,944	-	157	(a)	(a)
Net Purchases (+) or Sales and Redemptions (-)	- 7,060	+ 39,963	- 10,190	+ 14,512	+ 3,127	+ 25,507	+3	- 58	(a)	(a)
Temporary Transactions										
RPs										
In Market	276,555	352,426	168,354	209,871	108,201	142,565				
With System Account	1,172,342	1,105,903	-	-	1,172,342	1,105,903				
MSPs										
In Market	151,138	62,583	151,138	62,583	-	-				
With Foreign	1,172,342	1,105,903	1,172,342	1,105,903	-	-				
Fed Funds sales	21,799	27,500	-	-	21,799	27,500				

# Reflects the following transactions:	1989	1988
Redemptions of maturing Treasury bills.....	12,730	2,200
Redemptions of maturing Treasury coupons.....	500	-
Redemptions of maturing Federal agency issues.....	442	587

* Commitment basis except for repurchase agreements.
(a) Less than $1.0 million.
(b) Includes Federal fund sales transacted in the market for foreign accounts.
Note: This table includes only the initiation of the matched transactions and repurchase agreements. Figures may not add to totals due to rounding.

APPENDIX B

SUMMARY OF POLICY GUIDES AND ACTIONS

Open market operations during 1989 were conducted under the Authorization for Domestic Open Market Operations. The Committee temporarily raised the authorized limit on intermeeting-period changes in System Account holdings of U.S. Government and Federal agency securities on four occasions--twice in the intermeeting period following the July 5-6 meeting. These actions, taken upon the recommendation of the Manager for Domestic Operations, were needed to accommodate anticipated movements in various operating factors that were expected to require substantial outright operations in excess of the normal $6 billion intermeeting limit. The table gives the details.

Effective Date	Original Limit on Change in System Holdings	Amended Limit	Actual Maximum Usage	Intermeeting Period
3/29/89	$6 billion	$8 billion	$5.4 billion	3/29/89 - 5/16/89
7/ 7/89	$6 billion	$8 billion	--	7/ 7/89 - 8/22/89
7/31/89	$8 billion	$10 billion	$9.1 billion	7/ 7/89 - 8/22/89
11/15/89	$6 billion	$8 billion	$6.9 billion	11/15/89 - 12/19/89

The Authorization for Domestic Open Market Operations in effect for most of 1989, except when amended as above, is reprinted below:

Authorization for Domestic Open Market Operations

1. The Federal Open Market Committee authorizes and directs the Federal Reserve Bank of New York, to the extent necessary to carry out the most recent domestic policy directive adopted at a meeting of the Committee:

   (a) To buy or sell U.S. Government securities, including securities of the Federal Financing

Bank, and securities that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States in the open market, from or to securities dealers and foreign and international accounts maintained at the Federal Reserve Bank of New York, on a cash, regular, or deferred delivery basis, for the System Open Market Account at market prices, and, for such Account, to exchange maturing U.S. Government and Federal agency securities with the Treasury or the individual agencies or to allow them to mature without replacement; provided that the aggregate amount of U.S. Government and Federal agency securities held in such Account (including forward commitments) at the close of business on the day of a meeting of the Committee at which action is taken with respect to a domestic policy directive shall not be increased or decreased by more than $6.0 billion during the period commencing with the opening of business on the day following such meeting and ending with the close of business on the day of the next such meeting;

(b) When appropriate, to buy or sell in the open market, from or to acceptance dealers and foreign accounts maintained at the Federal Reserve Bank of New York, on a cash, regular, or deferred delivery basis, for the account of the Federal Reserve Bank of New York at market discount rates, prime bankers acceptances with maturities of up to nine months at the time of acceptance that (1) arise out of the current shipment of goods between countries or within the United States, or (2) arise out of the storage within the United States of goods under contract of sale or expected to move into the channels of trade within a reasonable time and that are secured throughout their life by a warehouse receipt or similar document conveying title to the underlying goods; provided that the aggregate amount of bankers acceptances held at any one time shall not exceed $100 million;

(c) To buy U.S. Government securities, obligations that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States, and prime bankers acceptances of the types authorized for purchase under 1(b) above, from dealers for the account of the Federal Reserve Bank of New York under agreements for repurchase of such securities, obligations, or acceptances in 15 calendar days or less, at rates that, unless otherwise expressly

authorized by the Committee, shall be determined by competitive bidding, after applying reasonable limitations on the volume of agreements with individual dealers; provided that in the event Government securities or agency issues covered by any such agreement are not repurchased by the dealer pursuant to the agreement or a renewal thereof, they shall be sold in the market or transferred to the System Open Market Account; and provided further that in the event bankers acceptances covered by any such agreement are not repurchased by the seller, they shall continue to be held by the Federal Reserve Bank or shall be sold in the open market.

2. In order to ensure the effective conduct of open market operations, the Federal Open Market Committee authorizes and directs the Federal Reserve Banks to lend U.S. Government securities held in the System Open Market Account to Government securities dealers and to banks participating in Government securities clearing arrangements conducted through a Federal Reserve Bank, under such instructions as the Committee may specify from time to time.

3. In order to ensure the effective conduct of open market operations, while assisting in the provision of short-term investments for foreign and international accounts maintained at the Federal Reserve Bank of New York, the Federal Open Market Committee authorizes and directs the Federal Reserve Bank of New York (a) for System Open Market Account, to sell U.S. Government securities to such foreign and international accounts on the bases set forth in paragraph 1(a) under agreements providing for the resale by such accounts of those securities within 15 calendar days on terms comparable to those available on such transactions in the market; and (b) for New York Bank account, when appropriate, to undertake with dealers, subject to the conditions imposed on purchases and sales of securities in paragraph 1(c), repurchase agreements in U.S. Government and agency securities, and to arrange corresponding sale and repurchase agreements between its own account and foreign and international accounts maintained at the Bank. Transactions undertaken with such accounts under the provisions of this paragraph may provide for a service fee when appropriate.

Other Policy Actions

The discount rate began the year at 6 1/2 percent. In light of inflationary pressures in the economy, the Board of Governors announced

approval of an increase to 7 percent on February 24.[1/] The discount rate remained at 7 percent for the balance of the year.

1/ The increase became effective immediately at the Federal Reserve Banks of Boston, New York, Philadelphia, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, and San Francisco. The Board subsequently approved similar requests by the Federal Reserve Bank of Cleveland, also effective February 24, and by the Federal Reserve Bank of Dallas, effective February 27.

APPENDIX
C

TRANSACTIONS AT THE TRADING DESK OTHER THAN FOR SYSTEM OPEN MARKET OPERATIONS

APPENDIX C

CUSTOMER TRANSACTIONS AT THE TRADING DESK

The Desk's trading for customer accounts rose modestly in 1989 and was again dominated by transactions on behalf of official foreign and international accounts. Total outright activity for customer accounts declined for the fifth straight year, while temporary transactions for these accounts increased for the seventh consecutive year.

Outright Transactions

As shown in Table C-1, total outright transactions for customer accounts fell sharply, primarily reflecting the drop in outright transactions for official foreign and international accounts. Activity on behalf of Treasury accounts dropped back to its more typical minimal level from its unusually high level in 1988.[1/] Activity on behalf of Second District member banks remained negligible.

The contraction in the volume of outright transactions for official foreign accounts reflected the ongoing tendency for some of these accounts to conduct transactions directly with securities dealers, rather than through the Federal Reserve. The accounts with the most transactions arranged through the Desk were Canada, Taiwan, and Japan. After declining during 1988 and in early 1989, activity rose over the balance of 1989. In the fourth quarter, activity was about 50 percent above its year-earlier level.

The bulk of the outright transactions for foreign accounts--about 98 percent--was conducted in Treasury securities. (See also Table A-7 of Appendix A.) Total activity of these customers in Treasury securities was roughly evenly divided between purchases and sales. As growth in foreign

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1/ Such activity in 1988 had been boosted by transactions for the Federal Housing Administration and the Bureau of Indian Affairs.

TABLE C-1

DOLLAR VOLUME OF TRANSACTIONS FOR ACCOUNTS OTHER THAN SYSTEM
(In millions of dollars)

	PURCHASES		SALES		TOTAL		PERCENTAGE CHANGE IN TOTAL
	1989	1988	1989	1988	1989	1988	1988 - 1989
Foreign & Int'l Accounts							
Outright:	25,853	45,451	22,727	19,944	48,580	65,395	-26%
Treasury bills	21,531	31,852	17,913	18,423	39,443	50,275	-22
Treasury coupons	3,408	12,234	4,695	1,490	8,103	13,724	-41
Bankers' Acceptances	824	1,095	119	31	943	1,126	-16
Certificates of Deposit	91	270	-	-	91	270	-66
RPs:							
With System	1,172,342	1,105,903			1,172,342	1,105,903	+ 6
In Market	108,201	142,565			108,201	142,565	-24
Federal Funds	-		21,799	27,500	21,799	27,500	-21
Treasury	3	99	-	157	3	257	-99
Member Banks	#	#	#	#	#	1	-77
TOTAL	1,306,398	1,294,019	44,526	47,601	1,350,924	1,341,620	+ 1

TABLE C-2

DOLLAR VOLUME OF TRANSACTIONS IN 1989 BY TYPE OF ISSUE
(In millions of dollars)

	TREASURY BILLS	TREASURY COUPON ISSUES	AGENCY ISSUES	BANKERS' ACCEPTANCES	CDs	TOTAL
Foreign & Int'l Accounts						
Outright	39,443	8,103	-	943	91	48,580
RPs						1,280,542
Federal Funds						21,799
Treasury	-	-	3	-	-	3
Member Banks	-	#	-	-	-	#
TOTAL	39,443	8,103	3	943	91	1,350,924

Less than $0.5 million.

Notes: The above tables include only the initiation of RPs.
Figures may not add to totals due to rounding.

official account holdings slowed, and in fact turned negative overall, the volume of purchases of Treasury issues for these accounts slid 43 percent from its level in 1988, while the volume of sales rose 14 percent.[1/]

The remaining outright transactions for foreign accounts involved bankers' acceptances (BAs) and large denomination certificates of deposit (CDs). In 1989, as in previous years, the bulk of BA transactions were purchases. The overall volume of transactions fell about 15 percent. All CD transactions were purchases in 1989, as in 1988, and the volume of these purchases was considerably lower in 1989 than in previous years.

Temporary Transactions

The total volume of repurchase agreements arranged on behalf of foreign customers, either with the System Account, for which it is a matched sale-purchase agreement, or in the market as a customer-related RP, increased by 2.6 percent to $1,280.5 billion in 1989. Customer-related RPs accounted for 8.4 percent of the total. The average daily volume of the foreign RP pool was $4.95 billion, unchanged from 1988.[2/] Total foreign account earnings from repurchase agreements rose by $94 million to $472 million. The average daily yield on these RPs (computed on a bond-equivalent basis) was 9.21 percent, an increase of 175 basis points from 1988.

1/ For the third consecutive year, no swaps were arranged. Foreign accounts found it more attractive to arrange swaps directly in the market rather than through the Desk. Arranging swaps through the Desk involves time lags between the Desk's receipt of customer orders from the Foreign Department, and solicitation of competitive propositions from a number of dealers before completing the trade, while trades in the market can be executed more quickly.

2/ The average daily volume was computed by weighting each transaction by the number of calendar days it was outstanding. The total volume of transactions went up while the average daily volume stayed the same because the volume of transactions that spanned weekends was slightly lower in 1989 than in 1988.

The ten largest RP accounts, taken together, had a daily average participation level of just under $2.0 billion, down from $2.3 billion in 1988. Argentina remained the largest account even though its daily average investment dropped 32 percent to $385 million. Kuwait ranked second at an average $267 million. The account of the African Development Bank more than doubled, while Turkey gained nearly 90 percent. Indonesia and India each increased their participation by roughly 25 percent. At year-end there were 204 RP accounts, with 9 additions and 5 closures during the year.

The Desk also sold Federal funds on behalf of foreign accounts when the funds arrived too late in the day for investment in the RP pool. Sales amounted to $21.8 billion (about $88 million per business day), a drop of $5.7 billion from the 1988 level. A total of 57 accounts participated.

Foreign Account Activity and Portfolio

The portfolio of securities held in custody at the Federal Reserve Bank of New York fell modestly in 1989 to $233.4 billion, as shown in Table C-3.[1/] (This figure excludes repurchase agreements and funds earmarked for the purchase of U.S. arms that are invested in securities.) Holdings of marketable Treasury securities also declined modestly, and the composition of holdings shifted markedly away from bills and toward coupon issues. At the end of 1989, marketable Treasury coupon issues held by foreign and international accounts comprised 72 percent of the total, compared with 61 percent in 1988. An increase in coupon holdings was more than offset by a sharp decline in Treasury bill holdings. As a share of marketable public debt outstanding (excluding Federal Reserve System holdings), custody holdings represented about 14 percent of Treasury bills and 11 percent of

1/ The custody account can change for reasons other than operations arranged by the Desk. Central banks often purchase securities in auctions, redeem maturing securities, and arrange transactions directly through securities dealers.

TABLE C-3

SECURITIES HELD BY THE FEDERAL RESERVE BANK OF NEW YORK
FOR FOREIGN AND INTERNATIONAL ACCOUNTS
(In billions of dollars)

	1989*	1988*	Change
Total Custodial Holdings	245.7	252.0	-6.3
Excluding RPs and FMS accounts **	233.3	239.9	-6.6
Treasury Securities	219.5	226.6	-7.1
Bills	59.7	87.6	-27.9
Coupon issues	159.1	138.9	20.3
Nonmarketable issues	0.7	0.1	0.6
Federal Agency Securities	4.7	3.8	0.8
Certificates of Deposit	0.0	0.1	-0.1
Bankers' Acceptances	1.0	0.5	-0.5
Other Securities	8.1	7.8	0.3

* Year-end levels
**Repurchase agreements and Foreign Military Sales accounts. FMS accounts are earmarked for purchase of U.S. arms.

Note: Figures may not add to totals due to rounding.

Treasury coupon issues at the end of 1989, compared with 21 and 9 percent, respectively, a year earlier.

The Bank's holdings of other securities on behalf of foreign and international accounts showed a small net increase. Custodial holdings of nonmarketable Treasury issues rose because the Treasury issued certificates of indebtedness to Mexico as a part of a swap agreement arranged in September. Custodial holdings of CDs and BAs each fell, while those of Federal agencies increased.[1/] Foreign Military Sales (FMS) accounts were about unchanged in 1989 relative to 1988.

Japan, West Germany, and Taiwan maintained the largest custodial accounts, while Japan and Saudia Arabia showed the largest decrease and increase, respectively, in holdings during the year. Japan held the largest account, $54.5 billion, at year-end, despite recording the biggest decline in holdings, $8.5 billion. This decline reflected reductions in Japan's holdings of Treasury bills, which fell $10.5 billion--the largest for any account. This decrease, which largely reflected Japan's heavy dollar sales in foreign exchange markets during the year, was partially offset by one of the larger net increases in Treasury coupon holdings during the year. Saudia Arabia had the largest increase in holdings of Treasury coupon issues, with a gain of $6.4 billion. West Germany registered the second largest increase in securities holdings and held the second largest account at year-end. Net purchases of Treasury coupon securities ($5.6 billion) accounted for nearly all of the rise in Germany's portfolio held in custody here. Taiwan had the third largest account. It decreased its holdings of Treasury bills by $6.1 billion, thus reversing its upward trend of recent years; apparently this reflected some diversification of its reserves out of U.S. dollar holdings.

1/ Recall that Desk operations cited in Table C-1 account for only a portion of changes in custodial holdings.

TABLE C-4

DOLLAR VOLUME OF TRANSACTIONS IN 1989 BY DEALERS AND BROKERS ON BEHALF OF CUSTOMERS OF THE FEDERAL RESERVE
(In millions of dollars)

	OUTRIGHT		REPURCHASE AGREEMENTS*	
	Total Volume	Percentage Share	Total Volume	Percentage Share
Harris Government Securities Inc.	1,921	5.3%	5,082	4.7%
Dean Witter Reynolds, Inc.	1,791	4.9	2,024	1.9
Greenwich Capital Markets, Inc.	1,731	4.8	393	0.4
Sanwa-BGK Securities Co., L.P.	1,657	4.6	1,604	1.5
Shearson Lehman Government Securities, Inc.	1,632	4.5	7,130	6.6
Merrill Lynch Government Securities, Inc.	1,344	3.7	675	0.6
Chemical Securities, Inc. (a)	1,341	3.7	1,785	1.6
Morgan Stanley & Co., Inc.	1,030	2.8	1,640	1.5
Citicorp Securities Markets, Inc. (c)	1,023	2.8	4,195	3.9
J.P. Morgan Securities, Inc.	1,011	2.8	3,193	3.0
Salomon Brothers, Inc.	997	2.8	6,310	5.8
Westpac Pollock Government Securities, Inc.	979	2.7	1,308	1.2
Chase Securities, Inc.	969	2.7	2,596	2.4
Drexel, Burnham, Lambert Gov't Sec., Inc.	951	2.6	1,283	1.2
Prudential-Bache Securities, Inc.	934	2.6	2,420	2.2
Continental Ill. N/B & T/C, Chicago	917	2.5	634	0.6
First National Bank of Chicago	911	2.5	1,718	1.6
S.G. Warburg & Co., Inc.	906	2.5	710	0.7
Kidder, Peabody & Co., Inc.	894	2.5	1,004	0.9
The Nikko Securities Co., Int'l Inc.	849	2.3	546	0.5
First Boston Corporation	810	2.2	600	0.6
Carroll McEntee & McGinley, Inc.	800	2.2	2,071	1.9
Yamaichi Int'l (America) Inc. (b)	789	2.2	2,115	2.0
Discount Corporation of New York	789	2.2	2,119	2.0
Wertheim Schroder & Co., Inc.	782	2.2	1,063	1.0
Paine Webber Inc.	759	2.1	2,065	1.9
Midland-Montagu Securities, Inc.	729	2.0	1,435	1.3
BNY Securities, Inc. (f)	677	1.9	1,156	1.1
CRT Government Securities, Ltd.	640	1.8	1,106	1.0
Smith Barney, Harris Upham & Co., Inc.	619	1.7	322	0.3
Aubrey G. Lanston & Co., Inc.	579	1.6	8,363	7.7
Manufacturers Hanover Securities Corp.	578	1.6	5,723	5.3
Nomura Securities International, Inc.	577	1.6	6,823	6.3
Security Pacific National Bank	505	1.4	222	0.2
Goldman, Sachs & Co.	474	1.3	3,520	3.3
Bank of America N/T & S/A	469	1.3	2,815	2.6
Donaldson, Lufkin & Jenrette Securities Corp.	451	1.2	6,732	6.2
Fuji Securities Inc. (g)	428	1.2	4,895	4.5
Bear, Stearns & Co., Inc.	312	0.9	1,375	1.3
Daiwa Securities America Inc.	269	0.7	3,117	2.9
BT Securities Corporation (e)	216	0.6	3,976	3.7
Lloyds Government Securities Corp. (d)	123	0.3	338	0.3
#Banque National De Paris	30	**		
#National Westminister Bank, U.S.A. N.Y.	28	**		
#Bank of Tokyo, Ltd.	25	**		
#Standard Chartered Bank	5	**		
#Barclays de Zoete Wedd Gov't Sec., Inc. (h)	3	**		
#UBS Securities Inc. (h)	-	-		
Total	36,250	100%	108,200	100%

CROSSES BETWEEN ACCOUNTS	
Between Foreign Accounts and System Open Market Account:	
Outright	10,301
RP's	1,172,342
Other Crosses	1,089
FOREIGN ACCOUNT FEDERAL FUNDS SALES	21,799
GRAND TOTAL	1,205,531

(a) Formerly Chemical Bank effective April 1, 1989.
(b) Added to list of authorized dealers effective April 4, 1989.
(c) Formerly Citibank, N.A. effective April 17, 1989.
(d) Removed from list of authorized dealers effective April 28, 1989.
(e) Formerly Bankers Trust Company effective July 10, 1989.
(f) Formerly Irving Securities, Inc. effective August 1, 1989.
(g) Formerly Kleinwort Benson Government Securities, Inc. effective December 28, 1989.
(h) Added to list of authorized dealers effective December 6, 1989.

* Includes only the initiation of RP transactions.
** Less than .05 percent.
\# Involved transactions in securities other than Treasury issues under instructions from customers.

Note: Includes Treasury securities, Federal agency securities and large CDs.
Figures may not add to totals due to rounding.
Ranked according to volume of outright transactions.

TABLE C-5

NUMBER OF TRANSACTIONS PROCESSED FOR CUSTOMER ACCOUNTS*

	1989	1988	PERCENTAGE CHANGE IN TOTAL 1988 - 1989
Foreign & Int'l Accounts			
Outright	3,806	4,943	-23%
Customer-Related RPs	6,303	9,154	-31
Treasury	1	132	-99
Member Banks	11	13	-15
Total	10,121	14,242	-29

*Excludes transactions with System Account

Note: Each transaction ticket is counted as one item. For RPs, both the purchase and return side are counted.

APPENDIX D

DEALER SURVEILLANCE

Overview

Three factors influenced the number, type, and ownership of primary dealers during 1989: poor dealer profitability, greater use of so-called "section 20" subsidiaries, and the results of studies required by the Primary Dealer Amendment (PDA) of 1988. Weak profitability prompted four firms to withdraw from primary dealer status. Several bank holding companies transferred their dealerships from their bank subsidiaries into section 20 subsidiaries in 1989. The Federal Reserve Board, after reviewing studies of the government debt markets of Japan, Switzerland, and the United Kingdom as required by the PDA of 1988, found that U.S. firms were accorded "the same competitive opportunities" as domestic firms in these markets. Consequently, Japanese-owned firms were retained on the list of primary dealers, and firms from the United Kingdom and Switzerland, which had met the primary dealer criteria, were added to the list.

Dealer Profitability

During 1989 the number of primary dealer firms declined from 46 to 44 with four firms deleted from the list and two added. (Attachments I and II provide the lists of reporting dealers at the beginning of 1990 and 1989, respectively.) The decline in the number of primary dealers was in part a reflection of the poor earnings environment in U.S. Government securities markets that has persisted for over two years. Preliminary data suggest that, for the second year in a row, fewer than half of the dealers earned a profit from trading Government securities, while others had mediocre results.

Limited profitability potential was the primary impetus behind several dealer withdrawals. County NatWest Government Securities, Inc. withdrew as a primary dealer on January 13, after determining that the prospects for an adequate return on its investment were poor. L.F. Rothschild & Co. withdrew as a primary dealer on January 18, after a change in ownership failed to improve operating revenues across several businesses, and the firm decided to discontinue virtually all its securities businesses. Lloyds Government Securities Corporation withdrew on April 28, after the parent company decided to discontinue its government securities business. Thomson McKinnon Securities, Inc. was deleted from the list on July 10, after agreeing to sell its retail brokerage operations to Prudential Bache Securities, Inc. and wind down its other operations. Despite these profitability issues, there were still dealers showing interest in pursuing primary dealership. Two foreign-owned firms were added in 1989, as discussed below.

Section 20 Subsidiaries

Several domestic firms on the primary dealer list were transferred into newly created section 20 securities subsidiaries of bank holding companies (BHCs) during 1989. These separately capitalized subsidiaries are named after the section of the Glass Steagall Act that had prohibited banks and their direct subsidiaries from engaging in certain securities-related activities, such as underwriting and dealing in corporate debt securities. In April 1987, the Federal Reserve Board granted BHCs limited powers to engage in underwriting and dealing in municipal revenue bonds, 1-4 family mortgage-backed securities, consumer-receivable-related securities, and commercial paper through separately capitalized subsidiaries, provided that no more than 5 percent of the subsidiary's total revenues was derived from these activities. A legal challenge prevented BHCs from using these powers

until June 1988 when the Supreme Court upheld the Board's approval. In January 1989, the Board extended the range of permissible activities for section 20 subsidiaries to include underwriting and dealing in corporate bonds. Powers to underwrite and deal in equities were granted but deferred for one year. The revenue limit on underwriting and dealing in these previously ineligible securities was raised to 10 percent in September 1989.

During 1989, three bank primary dealers were moved into section 20 securities subsidiaries. On April 1, Chemical New York Corporation's primary dealer business was transferred from its bank unit to Chemical Securities Inc., a wholly owned subsidiary. Citicorp's primary dealer officially became Citicorp Securities Markets, Inc. on April 14. On July 10, the primary dealer operations of Bankers Trust New York Corporation were moved from its bank subsidiary into BT Securities Corporation. Seven primary dealers were in section 20 subsidiaries of domestic BHCs at year-end.[1/] Four domestic BHCs maintained operations of their primary dealers within their bank subsidiaries.[2/]

Primary Dealer Amendment of 1988

This amendment of the Omnibus Trade and Competitiveness Act of 1988 was directed at the Federal Reserve Bank of New York's recognition of foreign-owned primary dealers. It stipulated that, effective August 23, 1989, a foreign-owned firm could not be designated, or continue its designation as, a primary dealer unless the Federal Reserve could conclude that the firm's home country provides the "same competitive opportunities in

1/ Another change in the primary dealer list occurred as a result of the acquisition of Irving Bank Corporation by the Bank of New York Company, Inc. On August 1, the name of Irving Securities, Inc. was changed to BNY Securities, Inc.

2/ On January 2, 1990, First Chicago transferred its primary dealer activity into a section 20 subsidiary.

the underwriting and distribution of government debt instruments" as that country accords its own domestic firms.

The Act exempted firms that, prior to July 31, 1987, had been designated as primary dealers and either had been acquired by foreign firms or had informed the Federal Reserve Bank of New York of an intention to be acquired by a foreign firm. The Act, however, required studies of the government bond markets of the home countries for firms that were designated as primary dealers or that expressed interest in becoming dealers after July 1987. At the time the Act became law, two firms from the United Kingdom and four firms from Japan controlled foreign-owned primary dealers that were not exempted. Firms from Switzerland and Germany had expressed interest in primary dealership.

Members of Dealer Surveillance, in conjunction with staffs from other areas of the Federal Reserve Bank of New York and from the Board of Governors, prepared studies of the four government debt markets at issue: those in Japan, Switzerland, the United Kingdom, and Germany. The studies were based in part on consultations with foreign authorities and market participants in the respective countries, as well as on public comments. In August, the Federal Reserve System determined that the designation of primary dealers controlled by firms from the United Kingdom and Japan would be continued because U.S. firms were accorded "the same competitive opportunities" as domestic firms in the government debt markets of those two countries. The same determination was made for Switzerland in November when a firm with a parent company from that country met the criteria for becoming a primary dealer. No firm from Germany had met the primary-dealer criteria by the end of the year. No firms were deleted from the primary dealer list as a result of these studies.

After the conclusion of the studies, two foreign-owned dealers became primary dealers, while another firm became entirely foreign-owned.

Barclays de Zoete Wedd Government Securities and UBS Securities, with parent companies in the United Kingdom and Switzerland, respectively, were added to the primary dealer list on December 6. In addition, on December 28, Fuji Bank Limited purchased the portion of Kleinwort Benson Government Securities Inc. (GSI) that it did not already own from Kleinwort's parent in the United Kingdom. Kleinwort Benson G.S.I. was renamed Fuji Securities Inc.

As institutions from other countries seek to be designated as primary dealers, studies of the government debt markets of those countries will be undertaken. In addition, an update on the four countries already studied will be prepared to assure that no material changes have occurred that would alter prior conclusions.

Attachment I

LIST OF THE PRIMARY GOVERNMENT SECURITIES DEALERS
REPORTING TO THE FEDERAL RESERVE BANK OF NEW YORK

Bank of America NT & SA
Barclays de Zoete Wedd Government Securities Inc.
Bear, Stearns & Co., Inc.
BNY Securities, Inc.
BT Securities Corporation
Carroll McEntee & McGinley Incorporated
Chase Securities, Inc.
Chemical Securities
Citicorp Securities Markets, Inc.
Continental Illinois National Bank
and Trust Company of Chicago
CRT Government Securities, Ltd.
Daiwa Securities America Inc.
Dean Witter Reynolds Inc.
Dillon, Read & Co. Inc.
Discount Corporation of New York
Donaldson, Lufkin & Jenrette Securities Corporation
Drexel Burnham Lambert Government Securities Inc.
The First Boston Corporation
First Chicago Capital Markets, Inc.
First National Bank of Chicago
Fuji Securities Inc.
Goldman, Sachs & Co.
Greenwich Capital Markets, Inc.
Harris Government Securities Inc.
Kidder, Peabody & Co., Incorporated
Aubrey G. Lanston & Co., Inc.
Manufacturers Hanover Securities Corporation
Merrill Lynch Government Securities Inc.
Midland Montagu Securities Inc.
J.P. Morgan Securities, Inc.
Morgan Stanley & Co. Incorporated
The Nikko Securities Co. International, Inc.
Nomura Securities International, Inc.
Paine Webber Incorporated
Prudential-Bache Securities, Inc.
Salomon Brothers Inc.
Sanwa-BGK Securities Co., L.P.
Security Pacific National Bank
Shearson Lehman Government Securities, Inc.
Smith Barney, Harris Upham & Co., Inc.
S.G. Warburg & Co., Inc.
UBS Securities Inc.
Wertheim Schroder & Co. Incorporated
Westpac Pollock Government Securities, Inc.
Yamaichi International (America), Inc.

January 2, 1990

Attachment II

LIST OF THE PRIMARY GOVERNMENT SECURITIES DEALERS
REPORTING TO THE FEDERAL RESERVE BANK OF NEW YORK

Bank of America NT & SA
Bankers Trust Company
Bear, Stearns & Co., Inc.
Carroll McEntee & McGinley Incorporated
Chase Securities, Inc.
Chemical Bank
Citibank, N.A.
Continental Illinois National Bank
and Trust Company of Chicago
County NatWest Government Securities, Inc.
CRT Government Securities, Ltd.
Daiwa Securities America Inc.
Dean Witter Reynolds Inc.
Dillon, Read & Co. Inc.
Discount Corporation of New York
Donaldson, Lufkin & Jenrette Securities
Corporation
Drexel Burnham Lambert Government Securities Inc.
The First Boston Corporation
First National Bank of Chicago
Goldman, Sachs & Co.
Greenwich Capital Markets, Inc.
Harris Government Securities Inc.
Irving Securities, Inc.
Kidder, Peabody & Co., Incorporated
Kleinwort Benson Government Securities, Inc.
Aubrey G. Lanston & Co., Inc.
Lloyds Government Securities Corporation
Manufacturers Hanover Securities Corporation
Merrill Lynch Government Securities Inc.
Midland Montagu Securities Inc.
J.P. Morgan Securities, Inc.
Morgan Stanley & Co. Incorporated
The Nikko Securities Co. International, Inc.
Nomura Securities International, Inc.
Paine Webber Incorporated
Prudential-Bache Securities, Inc.
L.F. Rothschild & Co.
Salomon Brothers Inc.
Sanwa-BGK Securities Co., L.P.
Security Pacific National Bank
Shearson Lehman Government Securities, Inc.
Smith Barney, Harris Upham & Co., Inc.
Thomson McKinnon Securities Inc.
S.G. Warburg & Co., Inc.
Wertheim Schroder & Co. Incorporated
Westpac Pollock Government Securities, Inc.
Yamaichi International (America), Inc.

January 3, 1989

STATISTICAL SUMMARY

Operations in United States Government Securities and Federal Agency Securities

The total of United States Government securities and Federal agency securities held by the Federal Reserve System at the close of business on December 31, 1989, together with changes from holdings on December 31, 1988, are summarized in the following table on a delivery basis.

(In thousands of dollars)

System Open Market Account	Purchases	Sales	Redemptions	Exchanges	Net Changes	Holdings 12/31/89	Holdings 12/31/88
Government Securities							
Treasury Bills:						104,580,590	112,781,960
Outright	14,284,100	12,816,540	12,730,325	±231,210,215	-11,262,765		
Matched Transactions	1,326,541,010	1,323,479,615	-	-	+ 3,061,395		
Treasury Notes and Bonds maturing:							
Within 1 year	326,500	-	500,002	- 25,782,860	-25,956,362 #	30,717,703	27,826,114
1 to 5 years	1,437,400	489,550	-	+ 23,249,380	+24,197,230 #	52,241,220	53,575,925
5 to 10 years	287,000	29,227	-	+ 1,933,480	+ 2,191,253 #	12,529,430	12,568,438
Over 10 years	282,700	-	-	+ 600,000	+ 882,700 #	26,706,340	26,909,395
Total Govt. Secs.							
Incl. Matched Trans.	1,343,158,710	1,336,814,932	13,230,327	-	- 6,886,549	226,775,283	233,661,832
(Excl. Matched Trans.	16,617,700	13,335,317	13,230,327	-	- 9,947,944	228,841,663	238,789,607)
Federal Agency Issues maturing:				(+ 2,248,295			
Within 1 year	-	-	441,346	(- 2,995,445	- 1,188,496 ##	2,067,390	2,359,261
1 to 5 years	-	-	-	+ 555,250	+ 555,250 ##	3,197,621	3,418,596
5 to 10 years	-	-	-	+ 191,900	+ 191,900 ##	1,071,235	999,735
Over 10 years	-	-	520 *	-	- 520	188,365	188,885
Total System Account							
Incl. Matched Trans.	1,343,158,710	1,336,814,932	13,672,193	-	- 7,328,415	233,299,894	240,628,309
(Excl. Matched Trans.	16,617,700	13,335,317	13,672,193	-	-10,389,810	235,366,274	245,756,084)
F.R.B. of New York							
Repurchase Agreements for System	168,354,200	173,098,400	-	-	- 4,744,200	2,117,000	6,861,200
Customer-Related RPs passed through to the market	108,200,500	104,843,500	-	-	+ 3,357,000	3,357,000	-

Note: Figures may not add to totals due to rounding.

* Portion of outstanding issue that was redeemed through operation of its sinking fund.

\# Does not include the following maturity shifts:

\#\#

(In thousands of dollars)

	Within 1 year	1 to 5 years	5 to 10 years	Over 10 years
#	+28,847,951	-25,531,935	-2,230,261	-1,085,755
##	+ 896,625	- 776,225	- 120,400	-

System Account Transactions--By Dealer 1989*
Gross purchases plus gross sales:
(In thousands of dollars)

Securities Dealers	Outright Transactions					
	Dollar Volume			Percentage Share		
	Treasury Bills	Treasury Coupon Issues	Total Treasury Issues	Treasury Bills	Treasury Coupon Issues	Total Treasury Issues
Aubrey G. Lanston & Co., Inc.	1,692,000	120,000	1,812,000	9.6%	5.5%	9.1%
First Boston Corporation	1,239,000	105,000	1,344,000	7.0	4.8	6.8
Morgan Stanley & Co., Inc.	1,153,700	15,500	1,169,200	6.5	0.7	5.9
Drexel, Burnham, Lambert Gov't Sec., Inc.	874,200	253,000	1,127,200	4.9	11.6	5.7
Bear, Stearns & Co., Inc.	851,000	31,000	882,000	4.8	1.4	4.4
Merrill Lynch Government Securities, Inc.	740,000	117,100	857,100	4.2	5.4	4.3
Westpac Pollock Government Securities, Inc.	658,000	104,000	762,000	3.7	4.8	3.8
Salomon Brothers, Inc.	650,000	75,000	725,000	3.7	3.4	3.7
Security Pacific National Bank	710,000	8,000	718,000	4.0	0.4	3.6
Bank of America N/T & S/A	665,000	25,000	690,000	3.8	1.1	3.5
Discount Corporation of New York	655,000	-	655,000	3.7	-	3.3
Chase Securities, Inc.	630,000	-	630,000	3.6	-	3.2
Harris Government Securities Inc.	565,000	35,000	600,000	3.2	1.6	3.0
Greenwich Capital Markets, Inc.	168,000	373,000	541,000	1.0	17.1	2.7
Sanwa-BGK Securities Co., L.P.	465,000	61,000	526,000	2.6	2.8	2.6
First National Bank of Chicago	525,000	-	525,000	3.0	-	2.6
Paine Webber Inc.	400,000	77,900	477,900	2.3	3.6	2.4
Goldman, Sachs & Co.	332,000	145,000	477,000	1.9	6.7	2.4
J.P. Morgan Securities, Inc.	375,000	100,000	475,000	2.1	4.6	2.4
Chemical Securities Inc. (a)	462,500	-	462,500	2.6	-	2.3
Shearson Lehman Government Securities, Inc.	379,300	83,000	462,300	2.1	3.8	2.3
CRT Government Securities, Ltd.	293,000	37,000	330,000	1.7	1.7	1.7
Wertheim Schroder & Co., Inc.	320,000	10,000	330,000	1.8	0.5	1.7
Continental Ill. N/B & T/C, Chicago	261,000	31,000	292,000	1.5	1.4	1.5
Smith Barney, Harris Upham & Co., Inc.	260,000	2,000	262,000	1.5	0.1	1.3
Manufacturers Hanover Securities Corp.	210,000	50,000	260,000	1.2	2.3	1.3
Donaldson, Lufkin & Jenrette Securities Corp.	225,000	30,000	255,000	1.3	1.4	1.3
The Nikko Securities Co., Int'l, Inc.	215,000	35,000	250,000	1.2	1.6	1.3
BT Securities Corporation (e)	215,000	27,000	242,000	1.2	1.2	1.2
Nomura Securities International, Inc.	166,000	60,000	226,000	0.9	2.8	1.1
Fuji Securities Inc. (g)	170,000	50,400	220,400	1.0	2.3	1.1
Prudential-Bache Securities, Inc.	165,000	30,000	195,000	0.9	1.4	1.0
Kidder, Peabody & Co., Inc.	135,000	49,700	184,700	0.8	2.3	0.9
Citicorp Securities Markets, Inc. (c)	165,000	12,000	177,000	0.9	0.6	0.9
Midland-Montagu Securities, Inc.	163,000	-	163,000	0.9	-	0.8
Carroll McEntee & McGinley, Inc.	135,000	8,000	143,000	0.8	0.4	0.7
Yamaichi Int'l (America) Inc. (b)	115,000	-	115,000	0.7	-	0.6
Daiwa Securities America Inc.	111,800	-	111,800	0.6	-	0.6
S.G. Warburg & Co., Inc.	65,000	10,000	75,000	0.4	0.5	0.4
Dean Witter Reynolds, Inc.	67,000	3,000	70,000	0.4	0.1	0.4
BNY Securities, Inc. (f)	27,000	5,000	32,000	0.2	0.2	0.2
Lloyds Government Securities Corp. (d)	-	-	-	-	-	-
Total	17,673,500	2,178,600	19,852,100	100%	100%	100%

(a) Formerly Chemical Bank effective April 1, 1989.
(b) Added to list of authorized dealers effective April 4, 1989.
(c) Formerly Citibank, N.A. effective April 17, 1989.
(d) Removed from list of authorized dealers effective April 28, 1989.
(e) Formerly Bankers Trust Company effective July 10, 1989.
(f) Formerly Irving Securities, Inc. effective August 1, 1989.
(g) Formerly Kleinwort Benson Government Securities, Inc. effective December 28, 1989.

* Commitment basis.

Notes: Listed in descending order according to total volume.
Figures may not add to totals due to rounding.

STATISTICAL SUMMARY

Operations in United States Government Securities and Federal Agency Securities

The total of United States Government securities and Federal agency securities held by the Federal Reserve System at the close of business on December 31, 1989, together with changes from holdings on December 31, 1988, are summarized in the following table on a delivery basis.

(In thousands of dollars)

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Outright	14,284,100	12,816,540	12,730,325	±228,710,215	-11,262,765			
Matched Transactions	1,326,541,010	1,323,479,615	-	-	+ 3,061,395			
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1 to 5 years	1,437,400	489,550	-	+ 23,249,380	+24,197,230	#	52,241,220	53,575,925
5 to 10 years	287,000	29,227	-	+ 1,933,480	+ 2,191,253	#	12,529,430	12,568,438
Over 10 years	282,700	-	-	+ 600,000	+ 882,700	#	26,706,340	26,909,395
Total Govt. Secs.								
Incl. Matched Trans.	1,343,158,710	1,336,814,932	13,230,327	-	- 6,886,549		226,775,283	233,661,832
(Excl. Matched Trans.	16,617,700	13,335,317	13,230,327	-	- 9,947,944		228,841,663	238,789,607)
Federal Agency Issues maturing:				(+ 2,248,295				
Within 1 year	-	-	441,346	(- 2,995,445	- 1,188,496	##	2,067,390	2,359,261
1 to 5 years	-	-	-	+ 555,250	+ 555,250	##	3,197,621	3,418,596
5 to 10 years	-	-	-	+ 191,900	+ 191,900	##	1,071,235	999,735
Over 10 years	-	-	520 *	-	- 520		188,365	188,885
Total System Account Incl. Matched Trans.	1,343,158,710	1,336,814,932	13,672,193	-	- 7,328,415		233,299,894	240,628,309
(Excl. Matched Trans.	16,617,700	13,335,317	13,672,193	-	-10,389,810		235,366,274	245,756,084)
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\#\#

(In thousands of dollars)

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##	+ 896,625	- 776,225	- 120,400	-

System Account Transactions--By Dealer 1989*
Gross purchases plus gross sales:
(In thousands of dollars)

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	Dollar Volume			Percentage Share		
	Treasury Bills	Treasury Coupon Issues	Total Treasury Issues	Treasury Bills	Treasury Coupon Issues	Total Treasury Issues
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Morgan Stanley & Co., Inc.	1,153,700	15,500	1,169,200	6.5	0.7	5.9
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Westpac Pollock Government Securities, Inc.	658,000	104,000	762,000	3.7	4.8	3.8
Salomon Brothers, Inc.	650,000	75,000	725,000	3.7	3.4	3.7
Security Pacific National Bank	710,000	8,000	718,000	4.0	0.4	3.6
Bank of America N/T & S/A	665,000	25,000	690,000	3.8	1.1	3.5
Discount Corporation of New York	655,000	-	655,000	3.7	-	3.3
Chase Securities, Inc.	630,000	-	630,000	3.6	-	3.2
Harris Government Securities Inc.	565,000	35,000	600,000	3.2	1.6	3.0
Greenwich Capital Markets, Inc.	168,000	373,000	541,000	1.0	17.1	2.7
Sanwa-BGK Securities Co., L.P.	465,000	61,000	526,000	2.6	2.8	2.6
First National Bank of Chicago	525,000	-	525,000	3.0	-	2.6
Paine Webber Inc.	400,000	77,900	477,900	2.3	3.6	2.4
Goldman, Sachs & Co.	332,000	145,000	477,000	1.9	6.7	2.4
J.P. Morgan Securities, Inc.	375,000	100,000	475,000	2.1	4.6	2.4
Chemical Securities Inc. (a)	462,500	-	462,500	2.6	-	2.3
Shearson Lehman Government Securities, Inc.	379,300	83,000	462,300	2.1	3.8	2.3
CRT Government Securities, Ltd.	293,000	37,000	330,000	1.7	1.7	1.7
Wertheim Schroder & Co., Inc.	320,000	10,000	330,000	1.8	0.5	1.7
Continental Ill. N/B & T/C, Chicago	261,000	31,000	292,000	1.5	1.4	1.5
Smith Barney, Harris Upham & Co., Inc.	260,000	2,000	262,000	1.5	0.1	1.3
Manufacturers Hanover Securities Corp.	210,000	50,000	260,000	1.2	2.3	1.3
Donaldson, Lufkin & Jenrette Securities Corp.	225,000	30,000	255,000	1.3	1.4	1.3
The Nikko Securities Co., Int'l, Inc.	215,000	35,000	250,000	1.2	1.6	1.3
BT Securities Corporation (e)	215,000	27,000	242,000	1.2	1.2	1.2
Nomura Securities International, Inc.	166,000	60,000	226,000	0.9	2.8	1.1
Fuji Securities Inc. (g)	170,000	50,400	220,400	1.0	2.3	1.1
Prudential-Bache Securities, Inc.	165,000	30,000	195,000	0.9	1.4	1.0
Kidder, Peabody & Co., Inc.	135,000	49,700	184,700	0.8	2.3	0.9
Citicorp Securities Markets, Inc. (c)	165,000	12,000	177,000	0.9	0.6	0.9
Midland-Montagu Securities, Inc.	163,000	-	163,000	0.9	-	0.8
Carroll McEntee & McGinley, Inc.	135,000	8,000	143,000	0.8	0.4	0.7
Yamaichi Int'l (America) Inc. (b)	115,000	-	115,000	0.7	-	0.6
Daiwa Securities America Inc.	111,800	-	111,800	0.6	-	0.6
S.G. Warburg & Co., Inc.	65,000	10,000	75,000	0.4	0.5	0.4
Dean Witter Reynolds, Inc.	67,000	3,000	70,000	0.4	0.1	0.4
BNY Securities, Inc. (f)	27,000	5,000	32,000	0.2	0.2	0.2
Lloyds Government Securities Corp. (d)	-	-	-	-	-	-
Total	17,673,500	2,178,600	19,852,100	100%	100%	100%

(a) Formerly Chemical Bank effective April 1, 1989.
(b) Added to list of authorized dealers effective April 4, 1989.
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* Commitment basis.

Notes: Listed in descending order according to total volume.
Figures may not add to totals due to rounding.

TEMPORARY TRANSACTIONS IN U.S. GOVERNMENT AND FEDERAL AGENCY SECURITIES WITH DEALERS
YEAR 1989
(In thousands of dollars)

Securities Dealers*	Repurchase Agreements	Percentage Share Securities Dealers	Matched Transactions	Percentage Share Securities Dealers
BT Securities Corporation (e)	5,972,000 (9)	3.5%	35,405,000 (1)	23.4%
Daiwa Securities America Inc.	8,690,000 (4)	5.2	12,420,000 (2)	8.2
Goldman, Sachs & Co.	9,730,000 (3)	5.8	11,375,000 (3)	7.5
Shearson Lehman Government Securities, Inc.	10,543,500 (2)	6.3	9,795,000 (4)	6.5
Nomura Securities International, Inc.	16,122,000 (1)	9.6	2,367,000	1.6
Fuji Securities Inc. (g)	7,506,700 (6)	4.5	4,865,000 (9)	3.2
J.P. Morgan Securities, Inc.	5,020,000	3.0	5,210,000 (8)	3.4
Aubrey G. Lanston & Co., Inc.	8,155,000 (5)	4.8	2,072,000	1.4
Prudential-Bache Securities, Inc.	3,372,000	2.0	6,810,000 (5)	4.5
Salomon Brothers, Inc.	3,805,000	2.3	6,118,000 (7)	4.0
Bear, Stearns & Co., Inc.	5,193,000 (10)	3.1	4,713,000	3.1
Chemical Securities, Inc. (a)	2,670,000	1.6	6,255,000 (6)	4.1
Donaldson, Lufkin & Jenrette Securities Corp.	6,752,500 (7)	4.0	1,400,000	0.9
Morgan Stanley & Co., Inc.	3,175,000	1.9	4,750,000 (10)	3.1
Manufacturers Hanover Securities Corp.	6,654,000 (8)	4.0	675,000	0.4
Chase Securities, Inc.	3,281,000	1.9	4,024,000	2.7
Citicorp Securities Markets, Inc. (c)	5,063,000	3.0	2,150,000	1.4
Drexel, Burnham, Lambert Gov't Sec., Inc.	4,825,000	2.9	2,350,000	1.6
Yamaichi Int'l (America) Inc. (b)	2,906,000	1.7	4,055,000	2.7
Dean Witter Reynolds, Inc.	3,250,000	1.9	1,833,000	1.2
Merrill Lynch Government Securities, Inc.	1,790,000	1.1	3,165,000	2.1
Harris Government Securities Inc.	4,346,000	2.6	413,000	0.3
Greenwich Capital Markets, Inc.	3,438,000	2.0	1,227,000	0.8
First Boston Corporation	4,225,000	2.5	250,000	0.2
Wertheim Schroder & Co., Inc.	1,792,000	1.1	2,525,000	1.7
Kidder, Peabody & Co., Inc.	2,727,000	1.6	1,435,000	0.9
Carroll McEntee & McGinley, Inc.	3,896,000	2.3	240,000	0.2
Paine Webber Inc.	2,504,000	1.5	1,570,000	1.0
Sanwa-BGK Securities Co., L.P.	2,593,000	1.5	1,240,000	0.8
Bank of America N/T & S/A	2,055,000	1.2	1,758,000	1.2
Continental Ill. N/B & T/C, Chicago	2,203,000	1.3	1,230,000	0.8
Midland-Montagu Securities, Inc.	2,337,500	1.4	810,000	0.5
First National Bank of Chicago	1,695,000	1.0	1,212,000	0.8
BNY Securities, Inc. (f)	1,967,000	1.2	795,000	0.5
The Nikko Securities Co., Int'l Inc.	918,000	0.5	1,800,000	1.2
S.G. Warburg & Co., Inc.	728,000	0.4	1,842,000	1.2
Westpac Pollock Government Securities, Inc.	2,110,000	1.3	120,000	#
Discount Corporation of New York	2,024,000	1.2	188,000	0.1
Smith Barney, Harris Upham & Co., Inc.	685,000	0.4	651,000	0.4
CRT Government Securities, Ltd.	874,000	0.5	-	-
Security Pacific National Bank	600,000	0.4	25,000	#
Lloyds Government Securities Corp. (d)	161,000	0.1	-	-
Subtotal	168,354,200	100%	151,138,000	100%
Foreign & International Institutions	-		1,172,341,615	
Total	168,354,200		1,323,479,615	

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* Dealers listed in descending order according to total temporary transactions.
Figures in parentheses indicate rank order for that type of transaction.

\# Less than .05 percent.

Note: This table indicates only the initiation of repurchase agreements and matched transactions.

U.S. GOVERNMENT AND FEDERAL AGENCY SECURITY HOLDINGS
IN SYSTEM OPEN MARKET ACCOUNT
(In thousands of dollars)

		Holdings* 12/31/89	Net change since 12/31/88
Treasury Bills		104,580,590	(8,201,370)
Treasury Notes Matured in 1989			(26,076,362)
Issues outstanding			
7.875%	12/31/89	1,365,000	85,000
8.375%	12/31/89	469,752	0
10.500%	01/15/90	116,000	35,000
7.375%	01/31/90	538,730	0
6.500%	02/15/90	3,789,590	0
11.000%	02/15/90	632,039	0
7.125%	02/28/90	912,620	0
7.250%	03/31/90	542,415	0
7.375%	03/31/90	2,103,985	0
10.500%	04/15/90	223,000	51,000
7.625%	04/30/90	1,434,120	0
7.875%	05/15/90	1,271,000	0
11.375%	05/15/90	489,165	160,100
8.125%	05/31/90	760,990	0
7.250%	06/30/90	401,700	25,000
8.000%	06/30/90	1,426,120	35,000
10.750%	07/15/90	271,410	30,000
8.375%	07/31/90	1,477,750	0
7.875%	08/15/90	1,134,250	13,900
9.875%	08/15/90	610,400	0
10.750%	08/15/90	1,323,500	0
8.625%	08/31/90	1,131,480	0
6.750%	09/30/90	292,532	20,000
8.500%	09/30/90	1,539,220	35,000
11.500%	10/15/90	213,000	0
8.250%	10/31/90	639,315	0
8.000%	11/15/90	2,384,685	0
9.625%	11/15/90	249,250	0
13.000%	11/15/90	785,875	43,000
8.875%	11/30/90	494,845	0
6.625%	12/31/90	167,665	0
9.125%	12/31/90	1,100,000	1,100,000
11.750%	01/15/91	396,800	0
9.000%	01/31/91	804,440	804,440
7.375%	02/15/91	1,383,320	48,000
9.125%	02/15/91	461,000	12,000
9.375%	02/28/91	1,000,290	1,000,290
6.750%	03/31/91	376,000	0
9.750%	03/31/91	1,500,000	1,500,000
12.375%	04/15/91	215,500	0
9.250%	04/30/91	777,450	777,450
8.125%	05/15/91	3,042,395	10,000
14.500%	05/15/91	319,800	0
8.750%	05/31/91	1,024,460	1,024,460
8.250%	06/30/91	934,435	934,435
7.875%	06/30/91	380,000	15,000
13.750%	07/15/91	534,140	50,000
7.750%	07/31/91	786,970	786,970
7.500%	08/15/91	119,250	0
8.750%	08/15/91	1,665,790	10,000
14.875%	08/15/91	558,300	0
8.250%	08/31/91	891,630	891,630
9.125%	09/30/91	360,000	0
8.375%	09/30/91	650,000	650,000
12.250%	10/15/91	347,193	0
7.625%	10/31/91	1,586,430	1,586,430
6.500%	11/15/91	29,000	0
8.500%	11/15/91	1,596,305	0
14.250%	11/15/91	634,675	0
7.750%	11/30/91	1,271,475	1,271,475
8.250%	12/31/91	790,810	0
11.625%	01/15/92	450,545	10,100
6.625%	02/15/92	154,000	102,000
9.125%	02/15/92	1,011,005	1,011,005
14.625%	02/15/92	214,500	0
7.875%	03/31/92	661,720	0
11.750%	04/15/92	378,700	(40,000)
6.625%	05/15/92	2,065	0
9.000%	05/15/92	1,525,660	1,525,660
13.750%	05/15/92	2,486,284	83,000
8.250%	06/30/92	526,000	19,000
10.375%	07/15/92	169,000	64,000
8.250%	08/15/92	290,000	43,000
7.875%	08/15/92	2,533,620	2,533,620
8.750%	09/30/92	605,000	25,000
9.750%	10/15/92	97,215	0
8.375%	11/15/92	114,500	0
10.500%	11/15/92	300,490	4,000
7.750%	11/15/92	3,630,145	3,630,145
9.125%	12/31/92	644,880	644,880
8.750%	01/15/93	319,545	112,000
8.250%	02/15/93	28,000	7,000
10.875%	02/15/93	780,730	15,000
9.625%	03/31/93	821,610	821,610
7.375%	04/15/93	75,000	20,000
7.625%	05/15/93	50,000	0
10.125%	05/15/93	557,100	0
8.125%	06/30/93	400,000	400,000
7.250%	07/15/93	58,200	10,000
11.875%	08/15/93	1,606,100	33,000
8.250%	09/30/93	315,680	315,680
7.125%	10/15/93	98,327	(26,673)
11.750%	11/15/93	2,058,123	22,123
7.000%	01/15/94	54,150	(25,000)
7.000%	04/15/94	75,000	(50,000)
13.125%	05/15/94	751,000	12,000
8.000%	07/15/94	165,000	0
12.625%	08/15/94	827,000	50,000
9.500%	10/15/94	95,000	0
11.625%	11/15/94	974,860	50,000
8.625%	01/15/95	38,100	0
11.250%	02/15/95	1,083,000	25,000
8.375%	04/15/95	253,700	0
11.250%	05/15/95	780,000	70,000
8.875%	07/15/95	86,820	0
10.500%	08/15/95	1,046,728	20,728
8.625%	10/15/95	256,475	(19,955)
9.500%	11/15/95	273,000	0
9.250%	01/15/96	211,630	211,630
8.875%	02/15/96	483,545	0
9.375%	04/15/96	110,250	110,250
7.375%	05/15/96	1,765,000	50,000
7.875%	07/15/96	286,100	286,100
8.000%	10/15/96	125,500	125,500
7.250%	11/15/96	715,235	0
8.500%	05/15/97	294,000	0
8.625%	08/15/97	202,000	0
8.875%	11/15/97	360,000	0
8.125%	02/15/98	150,000	0
9.000%	05/15/98	400,000	0
9.250%	08/15/98	325,000	0
8.875%	11/15/98	300,000	0
8.875%	02/15/99	200,000	200,000
9.125%	05/15/99	200,000	200,000
8.000%	08/15/99	400,000	400,000
7.875%	11/15/99	400,000	400,000
Total Treas. Notes		91,381,098	430,621

* Delivery basis.

Note: Declines in holdings are shown in parentheses.

U.S. GOVERNMENT AND FEDERAL AGENCY SECURITY HOLDINGS
IN SYSTEM OPEN MARKET ACCOUNT
(In thousands of dollars)

Treasury Bonds		Holdings* 12/31/89	Net change since 12/31/88
3 1/2%	02/15/90	84,250	0
8 1/4%	05/15/90	342,050	0
4 1/4%	08/15/87-92	509,200	0
7 1/4%	08/15/92	91,785	0
4.00 %	02/15/88-93	24,300	0
6 3/4%	02/15/93	69,550	0
7 7/8%	02/15/93	137,000	1,500
7 1/2%	08/15/88-93	438,217	0
8 5/8%	08/15/93	164,050	0
8 5/8%	11/15/93	164,500	0
9.00 %	02/15/94	99,976	0
4 1/8%	05/15/89-94	76,625	0
8 3/4%	08/15/94	51,605	0
10 1/8%	11/15/94	70,800	0
3.00 %	02/15/95	2,100	0
10 1/2%	02/15/95	46,150	0
10 3/8%	05/15/95	57,000	0
12 5/8%	05/15/95	372,317	0
11 1/2%	11/15/95	32,000	0
7.00 %	05/15/93-98	157,275	0
3 1/2%	11/15/98	30,750	0
8 1/2%	05/15/94-99	1,085,755	0
7 7/8%	02/15/95-00	680,490	18,000
8 3/8%	08/15/95-00	2,065,375	10,000
11 3/4%	02/15/01	160,803	0
13 1/8%	05/15/01	159,726	0
8.00 %	08/15/96-01	489,210	0
13 3/8%	08/15/01	199,092	5,000
15 3/4%	11/15/01	162,904	0
14 1/4%	02/15/02	95,800	0
11 5/8%	11/15/02	172,650	1,000
10 3/4%	02/15/03	147,250	0
10 3/4%	05/15/03	38,000	0
11 1/8%	08/15/03	185,000	26,000
11 7/8%	11/15/03	147,240	0
12 3/8%	05/15/04	182,786	0
13 3/4%	08/15/04	11,000	0
11 5/8%	11/15/04	109,200	0
8 1/4%	05/15/00-05	1,492,660	0
12.00 %	05/15/05	64,476	0
10 3/4%	08/15/05	248,000	0
7 5/8%	02/15/02-07	1,389,164	0
7 7/8%	11/15/02-07	264,500	0
8 3/8%	08/15/03-08	753,500	0
8 3/4%	11/15/03-08	1,578,500	0
9 1/8%	05/15/04-09	696,205	0
10 3/8%	11/15/04-09	1,025,939	31,000
11 3/4%	02/15/05-10	663,400	24,700
10.00 %	05/15/05-10	1,164,556	0
12 3/4%	11/15/05-10	972,865	30,000
13 7/8%	05/15/06-11	955,542	0
14.00 %	11/15/06-11	687,291	0
10 3/8%	11/15/07-12	1,022,441	5,000
12.00 %	08/15/08-13	2,390,772	62,000
13 1/4%	05/15/09-14	407,050	20,000
12 1/2%	08/15/09-14	570,720	40,000
11 3/4%	11/15/09-14	840,000	0
11 1/4%	02/15/15	908,733	0
10 5/8%	08/15/15	680,000	0
9 7/8%	11/15/15	166,500	0
9 1/4%	02/15/16	268,000	0
7 1/4%	05/15/16	900,000	0
7 1/2%	11/15/16	335,000	0
8 3/4%	05/15/17	194,000	0
8 7/8%	08/15/17	230,000	0
9 1/8%	05/15/18	200,000	0
9.00 %	11/15/18	20,000	0
8 7/8%	02/15/19	210,000	210,000
8 1/8%	08/15/19	400,000	400,000
Total Treas. Bonds		30,813,595	884,200
Total U.S. Gov't Security Holdings		226,775,283	(6,886,549)

* Delivery basis.

Note: Declines in holdings are shown in parentheses.

U.S. GOVERNMENT AND FEDERAL AGENCY SECURITY HOLDINGS
IN SYSTEM OPEN MARKET ACCOUNT
(In thousands of dollars)

Federal Agency Issues

			Holdings* 12/31/89	Net change since 12/31/88
FNMA				
Matured in 1989				(356,650)
Issues outstanding				
11.45%	01/10/90		13,000	0
7.35%	04/10/90		25,000	0
10.30%	05/10/90		55,000	0
9.85%	07/10/90		39,715	0
10.00%	09/10/90		30,000	0
10.15%	10/10/90		5,000	0
7.65%	02/11/91		15,000	0
6.90%	02/11/91		40,000	0
7.20%	04/10/91		20,000	0
8.00%	04/10/91		60,000	0
8.55%	06/10/91		45,650	0
7.65%	07/10/91		15,000	0
8.70%	08/12/91		35,000	0
8.40%	08/12/91		25,000	0
7.00%	09/10/91		48,000	0
7.80%	10/10/91		28,265	0
7.375%	10/10/91		75,000	0
9.55%	11/12/91		58,700	0
11 3/4%	12/10/91		30,000	0
8.50%	01/10/92		25,000	0
7.00%	03/10/92		42,030	0
7.00%	03/10/92		78,000	0
12.00%	04/10/92		20,000	0
10 1/8%	06/10/92		9,000	0
7.05%	06/10/92		31,100	0
8.45%	07/10/92		12,200	0
9.15%	09/10/92		80,000	0
10.60%	10/12/92		4,700	0
9 7/8%	12/10/92		55,000	0
7.95%	02/10/93		75,000	0
7.90%	03/10/93		75,000	0
10.95%	03/10/93		35,000	0
10 7/8%	04/12/93		45,000	0
7.55%	04/12/93		13,000	0
8.80%	06/10/93		25,000	0
8.45%	07/12/93		15,000	15,000
7.375%	12/10/93		25,000	0
9.60%	04/11/94		100,000	100,000
7.65%	04/11/94		15,000	0
8.60%	06/10/94		24,650	24,650
8.90%	08/10/94		15,000	0
10.10%	10/11/94		30,000	0
8.30%	12/12/94	C.D.	40,000	40,000
11.95%	01/10/95		12,000	0
9.00%	01/10/95		15,000	0
10.50%	09/11/95		20,000	0
8.80%	11/10/95		100,000	0
8.50%	06/10/96		10,000	10,000
8.75%	06/10/96		10,000	0
8.00%	07/10/96		31,500	0
7.70%	12/10/96		12,000	0
7.60%	01/10/97		160,000	0
9.20%	06/10/97		27,000	0
8.95%	07/10/97		10,000	0
9.55%	09/10/97		35,000	0

FNMA (Cont'd)

			Holdings* 12/31/89	Net change since 12/31/88
7.40%	10/01/97	C.D.	49,410	0
7.10%	12/10/97		26,195	0
8.65%	02/10/98		10,000	0
9.15%	04/10/98		30,000	0
9.40%	08/10/98	C.D.	50,000	0
9.55%	03/10/99		25,000	25,000
8.70%	06/10/99		23,000	23,000
8.45%	07/12/99		5,000	5,000
9.00%	10/10/99		44,000	44,000
8.65%	12/10/99	C.D.	30,000	30,000
8.20%	07/10/2002	C.D.	34,000	0
10.35%	12/10/2015		10,000	0
8.20%	03/10/2016		15,000	0
Total			2,347,115	(40,000)

FLB
Issues outstanding

			Holdings* 12/31/89	Net change since 12/31/88
8.20%	01/22/90		22,061	0
7.95%	04/22/91		41,190	0
7.95%	10/21/96		49,795	0
7.35%	01/20/97		16,650	0
Total			129,696	0

* Delivery basis.

C.D. indicates capital debentures.

Note: Declines in holdings are shown in parentheses.

U.S. GOVERNMENT AND FEDERAL AGENCY SECURITY HOLDINGS
IN SYSTEM OPEN MARKET ACCOUNT
(In thousands of dollars)

Federal Agency Issues(Cont'd)

		Holdings* 12/31/89	Net change since 12/31/88
FHLB			
Matured in 1989			(590,900)
Issues outstanding			
6.55%	01/25/90	25,000	0
9.25%	01/25/90	12,000	12,000
9.60%	02/26/90	25,000	25,000
11.90%	03/26/90	14,000	0
6.70%	03/26/90	60,000	0
7.30%	03/26/90	1,000	0
10.10%	03/26/90	10,000	10,000
7.05%	04/25/90	24,000	0
7.70%	04/25/90	10,000	0
9.80%	04/25/90	14,000	14,000
8.25%	05/25/90	30,000	0
9.40%	05/25/90	30,000	30,000
8.75%	06/25/90	10,000	10,000
9.75%	07/25/90	25,000	0
8.50%	07/25/90	14,000	0
8.10%	08/27/90	20,000	0
8.95%	08/27/90	55,000	0
8.55%	08/27/90	22,000	22,000
10.30%	09/25/90	10,000	0
8.875%	09/25/90	13,000	0
8.30%	09/25/90	10,000	10,000
8.125%	10/25/90	20,000	20,000
7.05%	10/25/90	18,000	0
13.70%	11/26/90	18,000	0
8.40%	11/26/90	30,000	0
8.90%	11/26/90	18,000	0
7.95%	11/26/90	27,400	27,400
10.90%	12/26/90	28,400	0
9.35%	12/26/90	7,000	0
7.875%	12/26/90	10,000	10,000
9.10%	01/25/91	15,000	0
8.30%	01/25/91	13,000	0
9.30%	01/25/91	10,000	10,000
9.60%	01/25/91	20,000	20,000
11.875%	02/25/91	25,000	0
7.10%	02/25/91	50,000	0
7.75%	03/25/91	25,000	0
10.00%	03/25/91	7,000	7,000
7.35%	04/25/91	23,000	0
9.65%	04/25/91	12,000	12,000
7.875%	05/27/91	20,000	0
8.50%	05/28/91	17,000	0
9.25%	05/28/91	15,000	15,000
8.30%	06/25/91	10,000	0
8.60%	06/25/91	8,000	8,000
7.50%	07/25/91	25,000	0
8.15%	07/25/91	19,700	19,700
11.10%	08/26/91	130,000	0
8.60%	08/26/91	35,000	35,000
11.75%	09/25/91	26,000	0
7.40%	09/25/91	3,000	0
8.80%	09/25/91	2,000	0
9.95%	10/25/91	10,000	0
8.70%	10/25/91	28,000	0
7.15%	11/25/91	15,000	0
11.40%	12/26/91	20,000	0
7.00%	12/26/91	25,000	0
7.00%	01/27/92	10,000	0
11.45%	02/25/92	31,700	0
7.10%	03/25/92	40,000	0
10.00%	03/25/92	3,000	3,000
11.70%	04/27/92	31,000	0
8.30%	04/27/92	5,000	0
9.65%	04/27/92	8,000	8,000

		Holdings* 12/31/89	Net change since 12/31/88
FHLB(Cont'd)			
8.60%	05/26/92	10,000	0
9.15%	05/26/92	5,000	5,000
8.40%	06/25/92	5,000	0
8.25%	07/27/92	15,000	15,000
10.35%	08/25/92	17,000	0
8.60%	08/25/92	5,000	0
8.25%	09/25/92	6,000	6,000
10.85%	10/26/92	4,000	0
8.15%	10/26/92	16,000	16,000
11.10%	11/25/92	20,000	0
8.80%	11/25/92	17,000	0
8.00%	11/25/92	30,000	30,000
9.40%	12/28/92	3,000	0
7.95%	12/28/92	20,000	20,000
9.50%	01/25/93	16,000	0
9.35%	01/25/93	10,000	10,000
8.10%	03/25/93	1,200	0
7.55%	04/26/93	28,000	0
10.75%	05/25/93	16,100	0
8.125%	05/25/93	10,000	0
8.90%	05/25/93	10,000	0
9.125%	05/25/93	5,000	5,000
11.70%	07/26/93	3,000	0
7.75%	07/26/93	10,000	0
9.00%	07/26/93	6,900	0
11.95%	08/25/93	40,000	0
7.95%	09/27/93	2,000	0
7.875%	10/25/93	5,000	0
8.80%	10/25/93	15,000	0
7.375%	11/26/93	115,335	0
9.125%	11/26/93	15,000	0
12.15%	12/27/93	61,000	0
7.375%	12/27/93	10,000	0
7.30%	01/25/94	5,000	0
12.00%	02/25/94	25,000	0
7.45%	02/25/94	1,700	0
9.60%	02/25/94	20,000	20,000
9.55%	04/25/94	6,000	6,000
8.60%	06/27/94	7,000	7,000
8.30%	07/25/94	20,000	20,000
8.60%	08/25/94	17,900	17,900
8.30%	10/25/94	18,000	18,000
8.20%	11/25/94	15,000	15,000
8.05%	12/26/94	7,000	7,000
8.875%	06/26/95	8,000	0
10.30%	07/25/95	18,000	0
9.50%	12/26/95	3,000	0
8.10%	03/25/96	10,000	0
9.80%	03/25/96	3,000	3,000
7.75%	04/25/96	33,000	0
8.25%	05/27/96	16,000	0
8.00%	07/25/96	15,000	0
8.25%	09/25/96	2,000	0
8.25%	11/25/96	10,000	10,000
7.875%	02/25/97	40,730	0
7.65%	03/25/97	12,000	0
9.25%	11/25/98	5,000	0
9.30%	01/25/99	2,000	2,000
8.60%	06/25/99	3,900	3,900
8.45%	07/26/99	5,000	5,000
8.60%	08/25/99	11,000	11,000
8.375%	10/25/99	10,000	10,000
Total		2,250,965	0

* Delivery basis.

Note: Declines in holdings are shown in parentheses.

U.S. GOVERNMENT AND FEDERAL AGENCY SECURITY HOLDINGS
IN SYSTEM OPEN MARKET ACCOUNT
(In thousands of dollars)

Federal Agency Issues(Cont'd)

		Holdings* 12/31/89	Net change since 12/31/88
FFCB			
Matured in 1989			(1,376,986)
Issues outstanding			
8.60%	01/02/90	52,000	52,000
9.30%	01/02/90	33,000	33,000
8.80%	01/02/90	55,000	55,000
10.95%	01/22/90	17,649	0
11.15%	01/22/90	7,000	0
10.85%	02/01/90	14,000	0
9.15%	02/01/90	20,000	20,000
8.35%	02/01/90	45,000	45,000
8.375%	02/01/90	40,000	40,000
9.60%	03/01/90	35,000	35,000
8.65%	03/01/90	110,000	110,000
8.10%	03/01/90	110,365	110,365
10.25%	04/02/90	30,000	30,000
8.65%	04/02/90	60,000	60,000
11.35%	04/20/90	30,000	0
9.75%	05/01/90	15,000	15,000
8.20%	05/01/90	35,000	35,000
14.10%	06/01/90	6,000	0
9.20%	06/01/90	55,000	55,000
8.05%	06/01/90	90,000	90,000
8.30%	07/02/90	50,000	0
8.625%	07/02/90	25,000	25,000
10.40%	07/23/90	10,000	0
9.55%	07/23/90	67,800	0
8.125%	08/01/90	25,000	25,000
12.50%	09/04/90	10,000	0
8.625%	09/04/90	60,000	60,000
8.80%	10/01/90	40,000	0
8.60%	10/01/90	25,000	25,000
10.60%	10/22/90	34,000	0
8.10%	11/01/90	14,000	14,000
7.90%	12/03/90	46,000	46,000
7.65%	03/01/91	43,000	0
14.10%	04/22/91	5,000	0
7.55%	04/22/91	45,000	0
9.10%	07/22/91	42,626	0
14.70%	07/22/91	12,000	0
10.60%	10/21/91	10,275	0
13.65%	12/02/91	12,000	0
15.20%	01/20/92	28,000	0
11.50%	01/20/92	7,000	0
8.60%	09/01/92	10,000	10,000
13.75%	07/20/92	15,000	0
10.65%	01/20/93	40,000	0
11.80%	10/20/93	30,000	0
12.35%	03/01/94	10,000	0
14.25%	04/20/94	3,700	0
13.00%	09/01/94	8,000	0
8.625%	09/01/94	10,000	10,000
11.45%	12/01/94	7,000	0
11.90%	10/20/97	15,000	0
8.65%	10/01/99	10,000	10,000
Total		1,630,415	(366,621)

		Holdings* 12/31/89	Net change since 12/31/88
FHA			
Matured in 1989		0	(34,725)
U.S. Postal Service			
6 7/8%	02/01/97	37,055	0
Total		37,055	0
Washington Metro Area Transit Auth.			
Issues outstanding			
7.30%	07/01/2012	44,950	0
7.35%	07/01/2012	35,410	0
8.15%	07/01/2014	36,410	0
Total		116,770	0
General Service Administration			
7.15%	12/15/02	12,595	(520)
Total		12,595	(520)
Total Agency Issues		6,524,611	(441,866)
Total U.S. Government & Agency Issues		233,299,894	(7,328,415)

* Delivery basis.

Note: Declines in holdings are shown in parentheses.

Holdings of Treasury Bills by the System Open Market Account
(In thousands of dollars)

December 31, 1989 Maturity	Holdings*	Percent of the Total Amount Outstanding
1990		
1/ 4	4,254,835	30.1%
1/11 #	1,731,150	26.3
1/18	5,492,060	23.1
1/25	3,311,760	22.9
2/ 1	2,734,500	19.2
2/ 8	4,289,215	29.3
2/15	7,100,610	29.2
2/22	4,417,885	29.0
3/ 1	3,961,800	26.0
3/ 8	4,228,230	27.7
3/15	6,783,455	27.9
3/22	3,906,180	25.6
3/29	3,224,310	21.2
4/ 5	1,784,200	24.1
4/12	4,033,500	24.5
4/19	1,584,300	7.0
4/26	1,777,300	22.7
5/ 3	1,023,200	13.1
5/10	4,360,000	25.6
5/17	2,035,000	25.3
5/24	2,440,000	30.4
5/31	2,645,000	33.0
6/ 7	4,675,000	28.1
6/14	2,000,000	24.9
6/21	2,050,000	25.5
6/28	1,550,000	19.8
7/ 5	2,646,100	29.3
8/ 2	2,225,000	24.6
8/30	2,675,000	28.8
9/27	2,250,000	23.6
10/25	2,291,000	23.5
11/23	2,600,000	26.6
12/20	2,500,000	25.5
Total #	104,580,590	24.8

* Delivery basis.

\# Holdings exclude $2,066,380 thousand of January 11 maturities that were sold under matched sale-purchase agreements. The percentage includes the matched transaction.

Participation in the System Open Market Account

The following table shows the net change in each Reserve Bank's participation during 1989 as a result of reallocations.

Reallocations of Participation in the System Open Market Account During 1989

	Reallocations	Participations December 31, 1989
Boston	+$ 367,000,000	$ 14,517,467,921.29
New York	+ 2,563,000,000	82,233,583,426.30
Philadelphia	+ 121,000,000	6,732,334,615.55
Cleveland	- 57,000,000	13,421,301,296.42
Richmond	+ 1,251,000,000	19,335,146,300.50
Atlanta	- 228,000,000	10,655,710,531.43
Chicago	- 623,000,000	27,715,073,887.80
St. Louis	+ 326,000,000	7,182,859,566.51
Minneapolis	+ 619,000,000	3,927,690,321.35
Kansas City	+ 568,000,000	9,329,924,392.54
Dallas	- 3,362,000,000	9,801,645,210.60
San Francisco	- 1,545,000,000	28,447,156,529.71
	±$5,815,000,000	$233,299,894,000.00

System Account Earnings

Earnings from U.S. Government and Federal agency securities held in the System Open Market Account during the calendar year 1989 totaled $19,951,224,000, an increase of $1,864,462,000 from earnings in 1988.

The average earnings rate was 8.61 percent in 1989, compared with 7.83 percent in 1988. The earnings rate, which was 8.08 percent on January 2, 1989, closed the year at 8.46 percent. Average holdings increased to $230.9 billion in 1989 from $229.0 billion in 1988.

Note: Earnings reflect a 2 basis-point charge to foreign accounts for repurchase agreements.

The System Open Market Account earnings rate and the net daily accrual of earnings based on the holdings at the close of 1989, compared with those at the close of 1988, are shown in the following table:

(In thousands of dollars)

	12/31/89	12/31/88	Net change
Total Portfolio*	$233,299,894	$240,628,309	-$7,328,415
Earnings Rate**	8.46%	8.22%	+ .24%
Net Daily Accrual of Earnings#	$ 54,080	$ 54,159	-$ 79
Coupon Issues	$ 32,044	$ 31,357	+$ 687
Treasury Bills	$ 22,036	$ 22,802	-$ 766

* Delivery basis.

** The earnings rate on the last day of each year excludes interest earnings on holdings of most Federal agency issues. Most agency securities accrue interest on a 30-day per month basis. Thus, for accounting purposes, in 31-day months, no interest accrues on the last day and in February, interest earnings on the last day are adjusted to make the month's earnings equivalent to that of a 30-day month.

\# Net after accrual of discount and amortization of premium balances.

Market Value of Portfolio

The net appreciation of System Open Market Account holdings of Treasury notes and bonds and Federal agency issues on December 31, 1989, as measured by the difference between book value and market bid quotations on notes and bonds, is shown below:

(In thousands of dollars)

	Par Value Holdings	Book Value	Market Value	Appreciation (+) or Depreciation (-)
Notes	91,381,098	91,762,672	93,811,235	+2,048,563
Bonds	30,813,595	31,506,434	35,842,079	+4,335,645
Agencies	6,524,611	6,508,461	6,617,066	+ 108,605

Repurchase Agreements Against U.S. Government and Federal Agency Securities
Federal Reserve Bank of New York
(In thousands of dollars)

	1989	1988	1987
Purchases	168,354,200	209,871,300	394,972,900
Sales	173,098,400	207,970,805	406,017,195
Year-end Balance	2,117,000	6,861,200	4,960,705
Earnings on Repurchase Agreements	113,338	96,059	180,828

Matched Transactions
System Open Market Account
(In thousands of dollars)

	1989	1988	1987
Sales	1,323,479,615	1,168,486,250	950,923,250
Purchases	1,326,541,010	1,168,142,950	950,934,575
Outstanding transactions at year-end	2,066,380	5,127,775	4,784,475

Customer-Related Transactions
(In thousands of dollars)

	1989	1988	1987
Sales	104,843,500	142,565,100	154,857,700
Purchases	108,200,500	142,565,100	154,857,700
Outstanding transactions at year-end	3,357,000	-	-

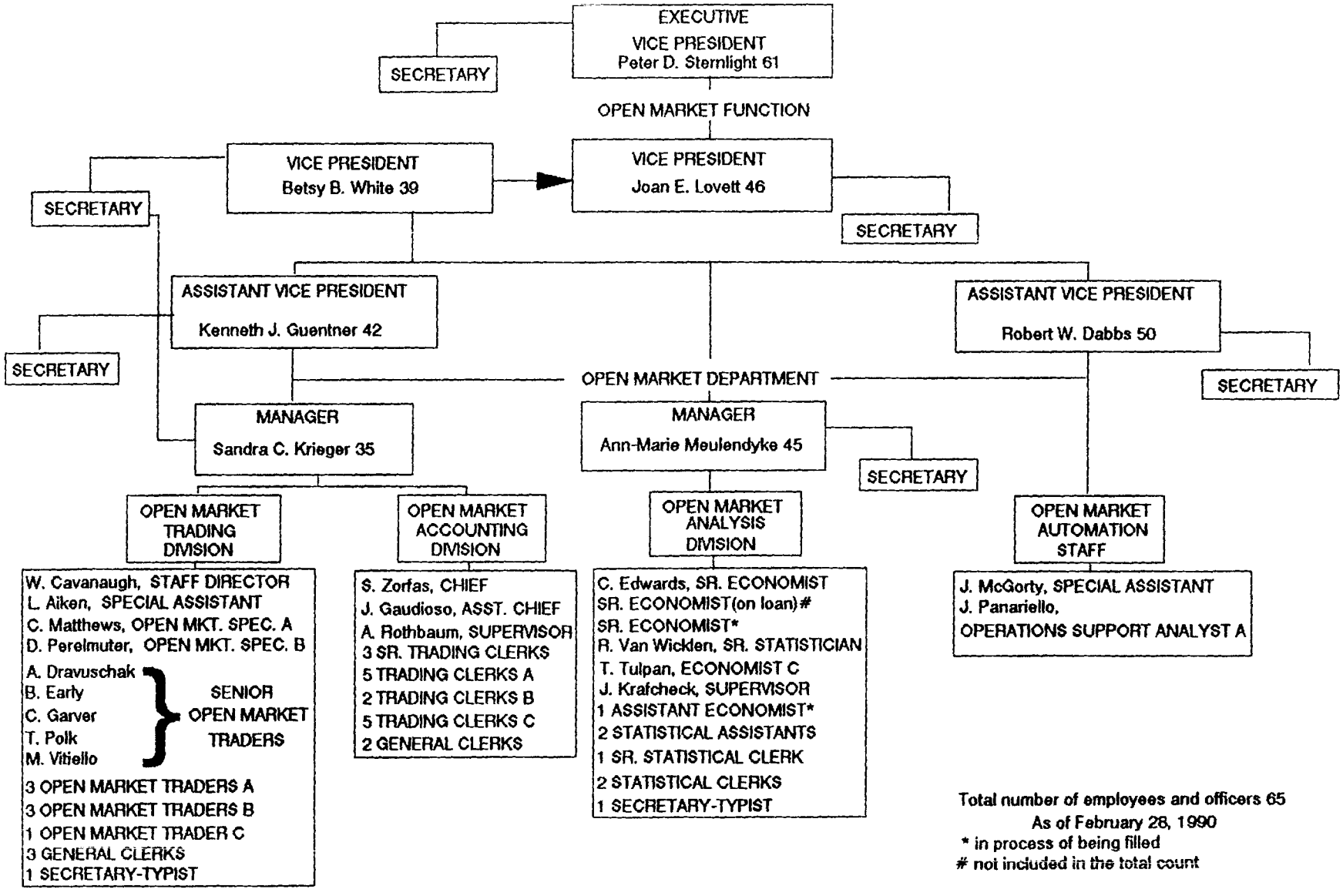
APPENDIX F

Organization of, and Assignment of Responsibility Within, the Open Market Group of the Federal Reserve Bank of New York

The materials presented in this appendix are as follows:

FEDERAL RESERVE BANK OF NEW YORK

OPEN MARKET GROUP



Total number of employees and officers 65

As of February 28, 1990

* in process of being filled

not included in the total count

PERSONNEL CHANGES

As of February 28, 1990 there were seven officers, including Peter D. Sternlight, assigned to the Open Market Group, unchanged in number from a year earlier. Effective January 1, 1990, Donald T. Vangel, Assistant Vice President, was reassigned to a newly established area, the Corporate Planning Group, with the title of Vice President. Betsy B. White, Vice President, was assigned to the Open Market Function.

The number of positions throughout the organizational structure of the Open Market Group remained unchanged from a year earlier. Including officers, there were 67 positions filled or in the process of being filled at the close of February 1990. The nonofficial staff of the Open Market Function consisted of 60 positions. Six officers' secretaries were assigned to the Group administration staff. Not included in these figures is an economist on loan to the Analysis Division from the Research Department under a regular six-month rotation program. There were 54 positions within the three divisions and automation area of the Open Market Department: 20 in the Trading Division, 20 in the Accounting Division, 12 in the Analysis Division (excluding the economist on loan), and two in the Open Market Automation Staff.

During the year ended February 28, 1990, nine persons left the Open Market Group, five of whom moved or were reassigned within the Bank. The total represents about a 13 percent turnover rate, compared with about 19 percent in the previous year. Four positions were open at the start of the year; two positions were unfilled at the end of the year. Nine openings were filled from within the Bank, while two people were hired from outside the Bank.

APPENDIX G

EXPENSE AND BUDGET DATA RELATING TO OPEN MARKET GROUP FEDERAL RESERVE BANK OF NEW YORK

The data in Table G-1 indicate charges to the activity budget codes of the Open Market Group that relate directly to transactions for the System Open Market Account. Handling of repurchase agreements on behalf of the account of the Federal Reserve Bank of New York is also included. Not included are services performed by other departments for which the Open Market Group is not billed that are related to processing and record keeping for open market transactions.

The 1990 budget estimates include a major payment associated with the implementation of a digital Information Distribution System (IDS), a reduction in video display systems, and an expected return to full staffing levels. Automation initiatives that commenced in 1989 will continue into 1990 and beyond. Projects in 1990 include:

- Continued development and testing of the Securities Trading and Clearing System (STACS) to replace the obsolescent Securities Trading System (STS).
- Continued development and testing of PC-based contingency aids to assist the accounting staff in the event STS is not available.
- Enhancing STACS to permit electronic communications with the primary dealers for receipt of propositions and price information (i.e. automated "go-arounds"), and to create tables in the appendices of reports produced by the Analysis Division. This project will extend into 1991.

Planned or potential automation projects for 1991 and beyond include:

- Installing the Bank's Office Support System (OSS) and integrating it with IDS.
- Automating U.S. Treasury securities auctions.

TABLE G-1

Expenses and Budgets for Open Market Group

Federal Reserve Bank of New York

	Estimated Expenses 1989 As of August 1989	Actual Expenses 1989	Estimated Expenses 1990
Salaries--Employees (a) (b)	$1,637,347	$1,579,682	$1,742,646
Retirement and other benefits (b)	317,230	352,601 (c)	363,454
Printing and supplies (b)	68,933	78,176	105,433
Equipment:			
Rentals and Depreciation	66,795	61,505	51,953
Furniture	63,700	17,105 (d)	47,515
Data Processing/Data Communications (e)	469,655	144,868	691,670
Telephone	65,140	57,882	65,916
Travel	25,200	20,718	23,500
Purchased Information	262,465	354,227 (f)	285,408
Software and System Development	1,117,120	1,153,012	1,371,467
Other Expenses (g)	20,130	21,470	16,035
Total	4,113,715	3,841,246	4,764,997
Officers			
Salaries	610,620	611,415	651,671
Retirement and other benefits	115,045	122,283 (c)	132,250
Total	725,665	733,698	783,921
Grand total	$4,839,380	$4,574,944	$5,548,918

(a) Includes overtime.
(b) Excludes reimbursable expenditures on behalf of the Treasury.
(c) Reflects upward revision to estimated retirement and benefit costs.
(d) Planned remodeling of telephone work area used by securities dealers for auctions was not undertaken.
(e) Includes STACS and IDS Support. A major IDS payment was deferred until 1990.
(f) Delay in satisfactory testing of IDS information system required extending retention period for alternative video display system.
(g) Includes training classes.

Please replace page E-1 in the "MONETARY POLICY AND OPEN MARKET OPERATIONS DURING 1989" with the attached corrected page. The exchange total for Treasury bills should be $231,210,215 thousand and not $228,710,215 thousand as reported. Also replace page 53 of the text with the attached corrected page. The mean absolute change in market factors was $3.4 billion in 1989 and $2.0 billion in 1988, not the $4.4 and $2.5 billion originally reported.

Please replace page 9 in the "MONETARY POLICY AND OPEN MARKET OPERATIONS DURING 1989" with the attached corrected page. A correction was made in the top panel of the chart, to the line representing the two-year Treasury note yield. The point corresponding the fourth week in June should be plotted as 8.37, and not 8.97 as previously plotted.