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**OPEN MARKET OPERATIONS  
DURING 1996**

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Federal Reserve Bank of New York



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# OPEN MARKET OPERATIONS DURING 1996

## INTRODUCTION

During 1996, the Trading Desk at the Federal Reserve Bank of New York managed reserve conditions with the objective of maintaining the federal funds rate around the level desired by the Federal Open Market Committee (FOMC). As was the case last year, the need for permanent reserve additions was relatively modest as demand for currency grew moderately and reserve requirements declined owing to the continued spread of sweep programs at commercial banks. The decrease in balances of depository institutions at Reserve Banks (operating balances) had an impact on bank reserve management strategies and the Desk's choice of operations. The Desk paid close attention to the daily pattern of reserve demands and, by tailoring its operations accordingly, maintained funds trading close to the Committee's desired rate.

At the start of 1996, available evidence indicated that a moderating economic expansion over the preceding months had reduced potential inflationary pressures going forward while price and cost trends were already subdued. The FOMC eased monetary policy slightly at its first meeting of the year, lowering the intended federal funds rate from 5 ½ percent to 5 ¼ percent (Table 1). The Board of Governors approved a reduction in the discount rate from 5 ¼ percent to 5 percent on the same day. By midyear, concern that inflation pressures were building caused the FOMC to adopt an asymmetric directive. However, although the pace of economic expansion was generally robust, inflation remained quiescent, and the Federal Reserve took no further policy actions to affect interest rates in reserve markets.

*Adapted from a report to the Federal Open Market Committee by Peter R. Fisher, Executive Vice President of the Federal Reserve Bank of New York and Manager of the System Open Market Account. Gerald D. Cohen of the Domestic Money Markets Staff was primarily responsible for the preparation of this report. Many other members of the Markets Group assisted in the preparation; Cassandra Bryant and Drew Matus deserve special recognition for their invaluable research support.*

*Table 1*  
**SPECIFICATIONS FROM DIRECTIVES OF THE FEDERAL OPEN  
 MARKET COMMITTEE AND RELATED INFORMATION**

Date of Meeting	Discount Rate (Percent)	Expected Federal Funds Rate (Percent)	Borrowing Allowance for Deriving NBR Path (Millions of Dollars) <sup>a</sup>
12/19/94	5.25	5.50	75 50 on 1/18 <sup>b</sup>
1/30 to 1/31/96	5.00 on 1/31	5.25 on 1/31	50 <sup>c</sup>
3/26/96	5.00	5.25	75 75 on 4/25 <sup>b</sup> 100 on 5/9 <sup>b</sup>
5/21/96	5.00	5.25	100 150 on 5/23 <sup>b</sup> 175 on 6/6 <sup>b</sup> 225 on 6/20 <sup>b</sup>
7/2 to 7/3/96	5.00	5.25	225 300 on 7/5 <sup>b</sup> 325 on 7/18 <sup>b</sup>
8/20/96	5.00	5.25	325
9/24/96	5.00	5.25	325 300 on 9/26 <sup>b</sup> 250 on 10/10 <sup>b</sup> 200 on 10/24 <sup>b</sup> 100 on 11/7 <sup>b</sup>
11/13/96	5.00	5.25	100 75 on 11/21 <sup>b</sup>
12/17/96	5.00	5.25	75

<sup>a</sup> The borrowing allowance associated with the expected federal funds rate.

<sup>b</sup> Change in borrowing assumption reflects technical adjustment to account for actual or prospective behavior of seasonal borrowing.

<sup>c</sup> The allowance was unchanged because the spread between the discount rate and the expected federal funds rate was not changed.

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## IMPLEMENTATION OF POLICY IN 1996

### Reserve Management Procedures and Practices

#### *Operating procedures*

In carrying out the FOMC's policy directives, the Desk seeks to maintain the federal funds rate around the level indicated by the Committee. Current operating procedures control the supply of reserves so that they conform to the aggregate demand banks have for holding these balances at the Committee's desired funds rate.

The average estimated demand banks have for holding reserves in each two-week maintenance period is embodied in the nonborrowed reserve objective, or path. The path is a projection of the reserves—balances held at the Fed plus applied vault cash—that banks must hold to meet their reserve requirements, plus any excess balances they wish to hold, less an amount of reserves that the Desk anticipates will be provided by borrowing at the discount window. Open market operations are the tool used to close any estimated gap between this demand for nonborrowed reserves and the supply forthcoming from market factors.

The borrowing allowance has retained a formal role in the construction of the nonborrowed reserve objective even though the link between the adjustment component and the spread between the federal funds and discount rates has virtually disappeared. In constructing the nonborrowed reserve objective, the Desk now expects borrowing to meet just a very small fraction of total reserve demand in most maintenance periods, even with the seasonal component added. Nevertheless, adjustment borrowing can rise to substantial levels in reaction to large, inadvertent reserve shortages that would otherwise leave banks in overdraft, or short of meeting their requirements on settlement days (Chart 1).

#### *Daily formulation and execution of open market operations*

Open market operations are used to bring reserve supplies in line with demand on a daily basis in order to keep the funds rate at or near the level desired by the Committee. However, while period-average demands are captured in the nonborrowed reserve objective, daily levels of demand may fluctuate. Reserve supplies can also vary from day to day because of changes in numerous underlying factors. As a result, reserve imbalances may develop on any day, potentially causing the federal funds rate to deviate from its intended level. Banks' ability to average their reserve holdings over a two-week maintenance period to meet requirements can temper the pressure on the federal funds rate when imbalances in supply and demand develop.

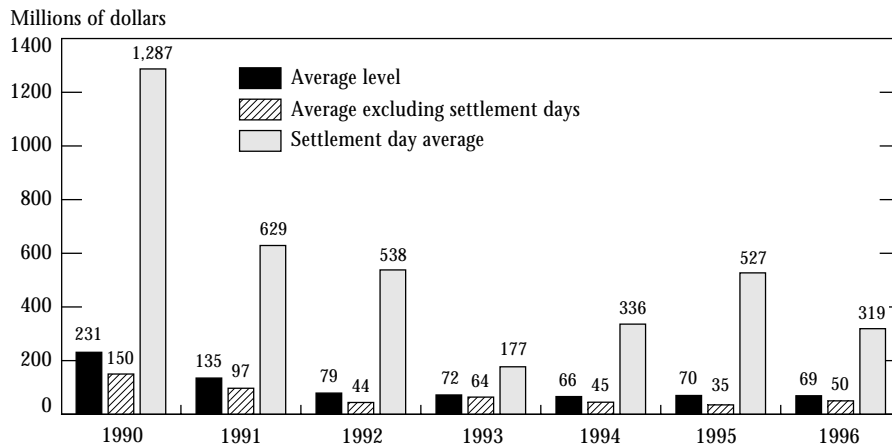
Each morning, the Desk receives updated estimates of daily reserve supplies. The nonborrowed reserve path may be adjusted formally or informally to account for revisions to required reserves

or updated judgements about the level of excess reserves that banks wish to hold. Following episodes of high adjustment borrowing, the nonborrowed reserve objective could also be adjusted to reflect the increased supply of reserves forthcoming from this source. Meanwhile, estimates of nonborrowed reserve supply over the same two-week period will be updated to reflect actual levels from the previous day and the effects of any open market operations arranged that day, and to reflect revisions to projected changes in the behavior of factors affecting nonborrowed reserves in upcoming days. Utilizing such daily reserve information, the Desk maintains the federal funds rate in a range around the expected level through open market operations.

The observed behavior of the funds rate is also used in formulating operations to the extent it is believed to be indicative of the true level of demand or supply. However, deviations in the funds rate may reflect market participants' own perceptions about the balance between aggregate reserve supply and demand, which at times may be based on a misreading of market conditions. Thus, the Desk considers both the reserve forecasts and funds market conditions when planning open market operations.

In 1996, the Desk arranged outright purchases of securities and occasional matched-sale transactions, but the largest share of its operations were repurchase agreements (RPs). As in years past, the usual time for arranging temporary operations was 11:30 a.m. ET, shortly after revisions to reserve projections became available. Because activity in the RP market peaks much earlier in the

*Chart 1*  
**ADJUSTMENT BORROWING**



Note: Each year includes all maintenance periods with a settlement day in that year.

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morning, operations always carried some risk that available collateral would be insufficient to meet the Desk's reserve objective for the day, an outcome that in fact has occurred from time to time in recent years. For this reason, on days when the Desk intended to arrange fairly large-sized RPs, operations would sometimes be preannounced or arranged an hour or so ahead of the usual intervention time to help ensure adequate propositions.

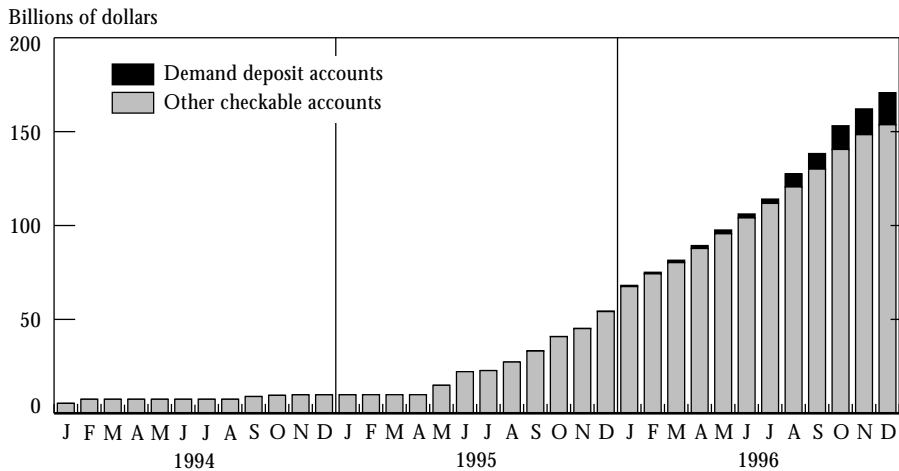
Late in 1996, following a number of changes to the methods and times for compiling reserve data within the Federal Reserve System, the New York and Board staffs began preparing their reserve forecasts on an earlier schedule. In December, the Desk announced that its normal market entry time for temporary operations would be advanced by one hour to between 10:30 a.m. and 10:45 a.m. starting in 1997.<sup>1</sup> Also starting in 1997, the Desk would begin announcing the total par value of all accepted propositions on each market operation, temporary and outright, just after their completion. Before this change, the Desk would only indicate the intended size of "customer" operations.

#### **OPEN MARKET OPERATIONS DURING 1996**

The general pattern of Desk activity during 1996 closely followed that of 1995, with seasonal increases in required reserves and currency demand creating reserve needs that were addressed in part with outright operations. The remaining needs were met with temporary operations. One factor that had an impact on the formulation of open market operations in 1996 was the growth in retail deposit sweep accounts and the associated decrease in required reserves and required operating balances. The decline in required reserves lessened the need for outright purchases. The lower required operating balances at times seemed to impact the intra-period demand for reserves. For example, on days of heavy payment flows, the demand for excess reserves seemed to be greater than in the past. The Desk was sensitive to the pattern of reserve demands and tailored its operations accordingly. Overall, banks appeared to adjust to lower required operating balances without any meaningful change in the amount of excess reserves held.

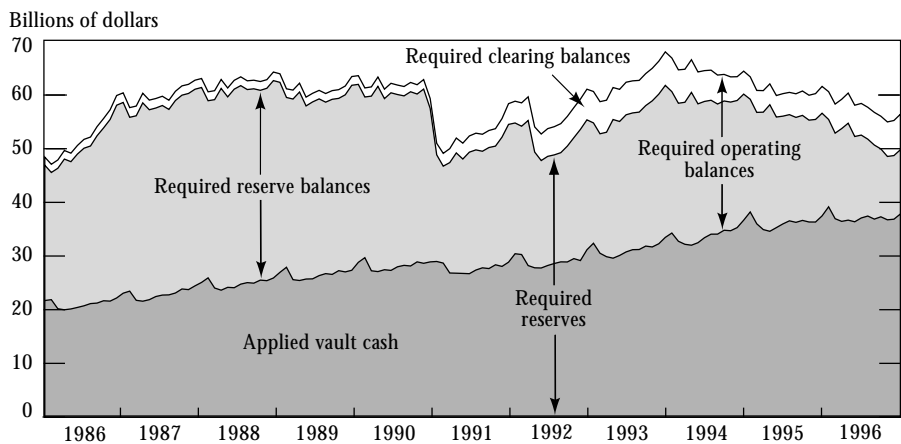
In 1996, banks and their affiliated branches swept an estimated \$170 billion from reservable transaction account balances, \$116 billion more than in the preceding year (Chart 2).<sup>2</sup> Estimates indicate that these sweeps scaled back reserve requirements by between \$10 billion and \$11 billion.<sup>3</sup> Recognizing that the decline in reserve requirements could complicate their reserve management, banks increased their clearing balance requirements by \$1.6 billion during 1996. The net effect of these changes, together with a slight (\$0.4 billion) increase in applied vault cash, was a \$5.5 billion decline in required operating balances—from \$24.1 billion in late 1995 to \$18.6 billion in December 1996 (Chart 3).<sup>4</sup>

*Chart 2*  
**THE RAPID GROWTH OF SWEEPS**  
 By Transaction Deposit Category



Note: Cumulative monthly average of initial sweeps, including daily and weekend activity.

*Chart 3*  
**RESERVE MEASURES**



Notes: All figures are quarterly averages. Required reserves are the sum of required reserve balances and applied vault cash. Required operating balances are the sum of required reserve balances and required clearing balances.



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## PERMANENT ACTIVITY FOR THE SYSTEM OPEN MARKET ACCOUNT

### *Reserve patterns*

Changes in the size of the System's portfolio of domestic securities are designed to offset movements in operating factors that affect reserve supplies as well as to accommodate shifts in reserve demand. Over time, most of the permanent expansion of the System Open Market Account (SOMA) has served to support the growth of currency. Shifts in other factors and in levels of reserve requirements, while significant in some years, over time have been of lesser importance. In 1996, currency in circulation grew \$25.0 billion, up about \$4.2 billion from its growth in 1995 but still well below the increases registered in each of the preceding three years. The need for a permanent expansion in the portfolio to support the growth in currency was moderated by a \$6.8 billion decline in required reserves.<sup>5</sup> Movements in other factors affecting nonborrowed reserve supply or demand did not contribute significantly, on net, to the need for permanent changes in the portfolio.

### *Outright open market operations*

To provide reserves on a permanent basis, the System's portfolio of domestic securities expanded \$14.7 billion over 1996, measured from year-end to year-end and excluding all temporary operations (Chart 4, Appendices B and C). A total of \$17.1 billion of Treasury securities was bought outright in the market, with purchases arranged when large and sustained reserve shortages were projected to develop (Chart 5). Two bill passes were arranged, the first in June and the second—a record-sized \$6.5 billion purchase—in November. There were also two sets of coupon passes, the first spread over two business days in April and the second spread over four business days in August. Each set of coupon passes consisted of three separate operations covering different sectors of the yield curve. Only a very small amount of securities was purchased directly from foreign accounts. In addition to providing the reserves necessitated by movements in operating factors, outright purchases offset \$2.4 billion of redemptions of securities. These redemptions primarily reflected original issue seven-year Treasury notes and some holdings of federal agency securities that matured on dates when no suitable replacement securities were available.

After the bill pass in November, no further outright purchases were made in 1996. In previous years, a greater portion of the reserve needs caused by the late-year seasonal buildup in currency and required reserves was met with permanent additions to the SOMA, with the Desk typically arranging one additional outright operation over the balance of the year.<sup>6</sup> These acquisitions also usually left the Desk in a position of having to drain reserves with temporary (and sometimes even permanent) operations in late January or early February of the following year when the seasonal

increases in currency and required reserves unwound. That time of year also is typically marked by seasonally low levels of required reserve balances because levels of vault cash remain high when the level of reserve requirements declines sharply.

The absence of further outright operations in late 1996 was intended to place the Desk in a position of needing to add reserves with temporary operations when required reserve balances reached their seasonal low level early in 1997. Two factors motivated this decision. First, the Desk did not

*Chart 4*  
**SYSTEM PORTFOLIO OF TREASURY AND FEDERAL AGENCY SECURITIES**  
 Year-end Holdings

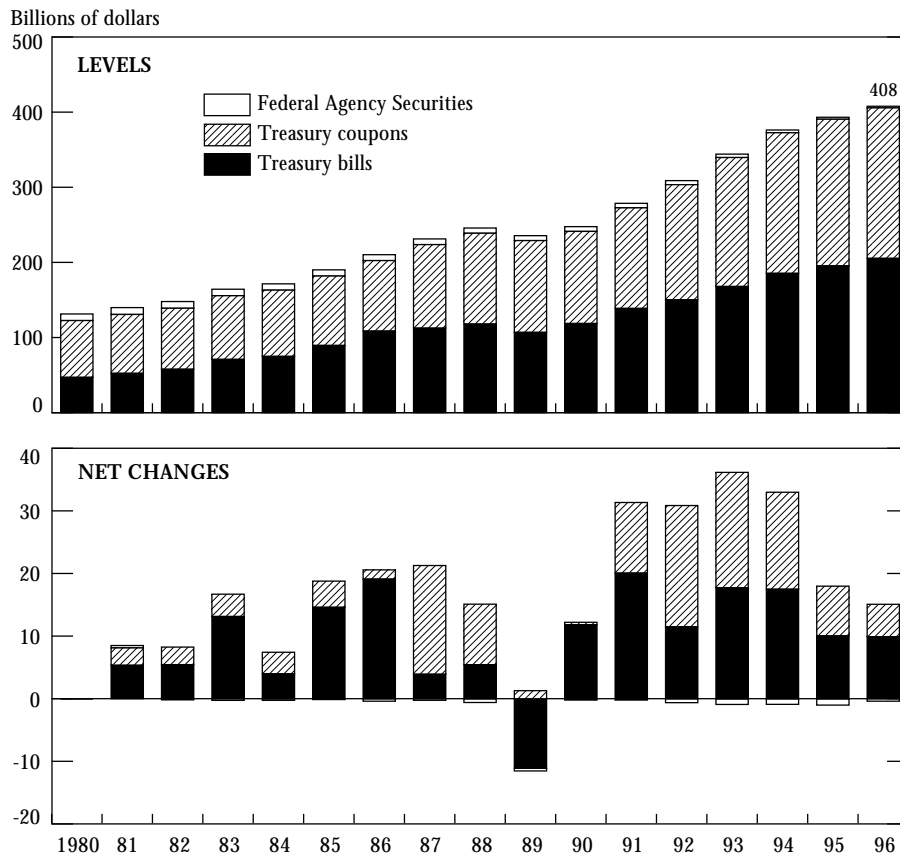
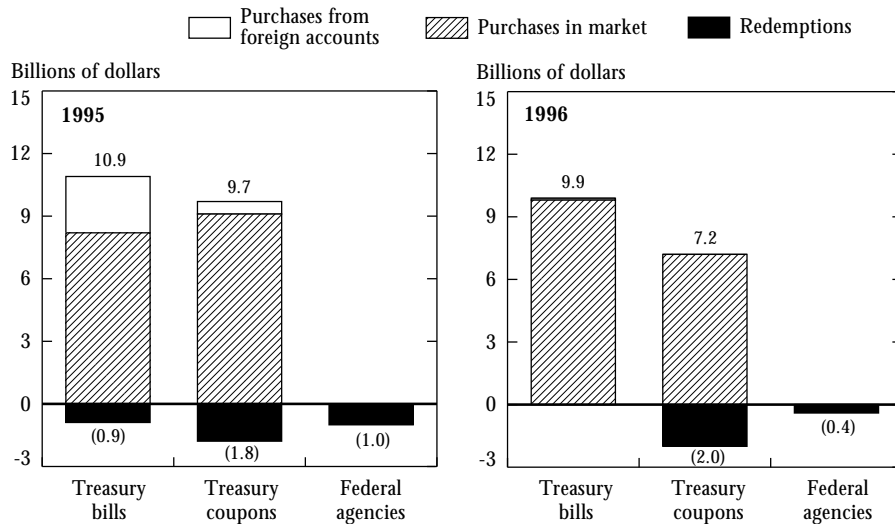


Chart 5  
**SYSTEM OUTRIGHT OPERATIONS**



Notes: Purchases are positive values; redemptions are negative values. There were no outright sales of securities in 1995 or 1996.

want to drain reserves during periods when low operating balances might lead to late-day firmness in the money market. Second, bank reserve managers had all their experience with new lows in operating balances in 1996 in the context of net reserve shortages. The Desk felt that it would be better situated to respond to any resultant change in funds market conditions with RPs rather than matched-sales.

*SOMA portfolio management*

Over the course of the year, the Desk continued to manage the permanent holdings in the SOMA domestic portfolio in a manner that ensured the liquidity of the portfolio. Liquidity was maintained by holding Treasury bills and Treasury coupon securities in roughly equal proportion. At the same time, to minimize any influence over the available public holdings of specific issues and thereby leave debt management in the domain of the Treasury, the acquisition of bills and coupons largely mirrored the distribution of Treasury issues within these two general classes of instruments.

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As of the end of 1996, the net impact of all the Desk's activities affecting its permanent holdings, including rollovers of maturing securities, left the average maturity of Treasury securities in the SOMA at 41 months, about two months greater than it was one year earlier but below the 61-month average maturity of total marketable Treasury debt. The Treasury's expanded issuance of 10-year notes and 30-year bonds contributed to the slight increase in maturity of the SOMA portfolio.

In late October, the Treasury announced that it would change the treatment of SOMA's non-competitive bids at Treasury bill auctions. Beginning in the first part of 1997, SOMA rollovers would be treated as add-ons to the publicly auctioned amount rather than deducted from the total auctioned size. This change would provide better information to market participants about the amount of bills available for sale to the public, with the only remaining uncertainty being the rollover amount of foreign institutions.

### **Temporary SOMA Activity**

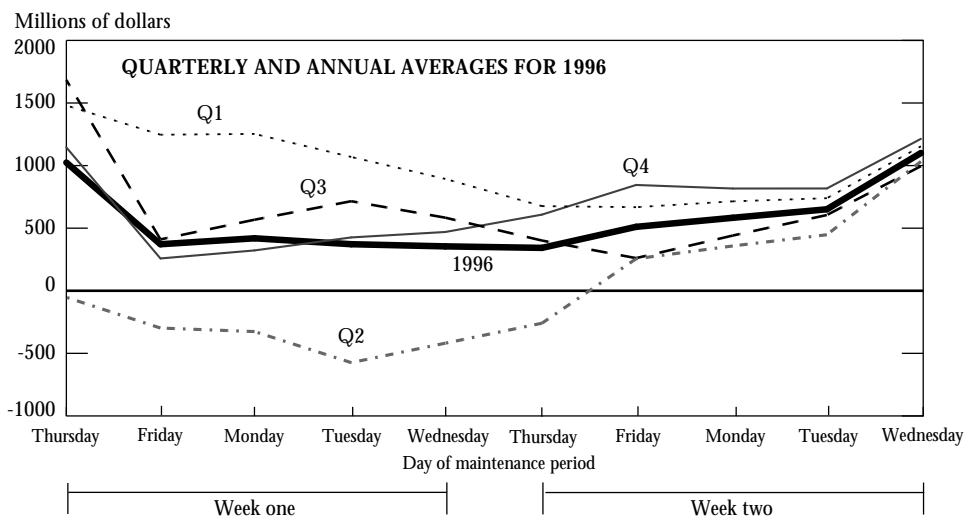
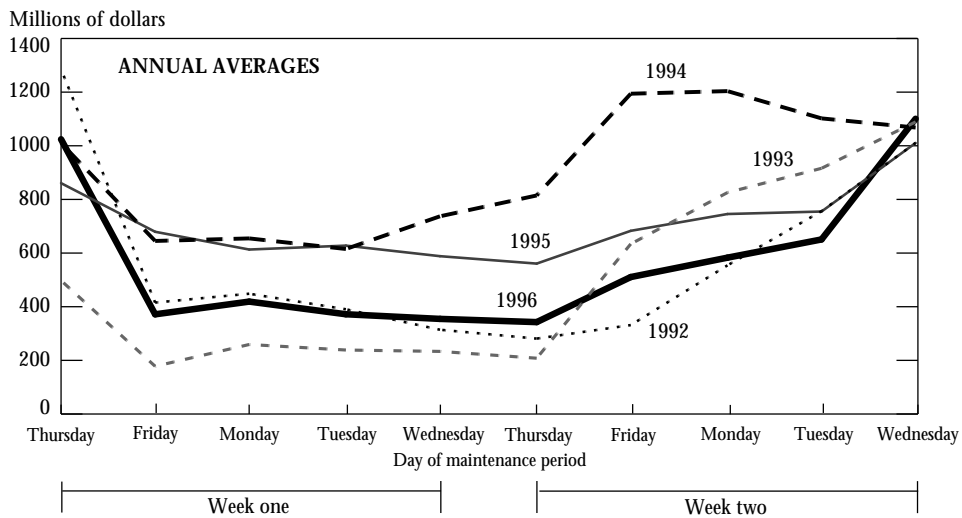
#### *Reserve patterns*

Temporary, or self-reversing, operations are an important tool used to meet reserve needs not addressed by outright operations. These residual needs can vary considerably in size from period to period, as well as from day to day, and in 1996 ranged from moderate "drain" needs to sizable "add" needs. In a typical maintenance period with an add need, the Desk often arranged successive multiday RPs spanning the entire period. These operations would be supplemented by shorter term operations as circumstances warranted. In particular, overnight operations were frequently employed on the settlement day to address all remaining period needs. Most multiday RPs were of the nonwithdrawable variety, but after the second weekend withdrawable operations were sometimes used to provide more flexibility in dealing with possible revisions to estimates of reserve supply or demand during the brief time that remained in the period. If substantial reserve needs were projected in a maintenance period, overlapping term operations were sometimes used.

From the demand side, reserve needs were skewed toward the second half of maintenance periods, continuing a pattern seen in recent years. This pattern seems to be related to the decrease in required operating balances, which increases the likelihood that everyday uncertainties will bring a bank's reserve position closer to one of two extremes: either ending the day overdrawn or holding an excess position that is difficult to work off on subsequent days. Thus, banks delay fully meeting their reserve requirements until late in a maintenance period. The top panel of Chart 6 graphs average excess reserve holdings to date from 1992 through 1996 and indicates the skewed in demand for reserves.

The bottom panel of Chart 6 breaks out 1996 average excess reserve holdings into quarterly averages. This figure demonstrates that the profile of demand within a maintenance period was not necessarily constant throughout the year. For example, during the second quarter of 1996, banks on average held negative cumulative excess reserves until relatively late in a maintenance period.

*Chart 6*  
**EXCESS RESERVES**  
 Average Cumulative Holdings, by Days in Maintenance Periods



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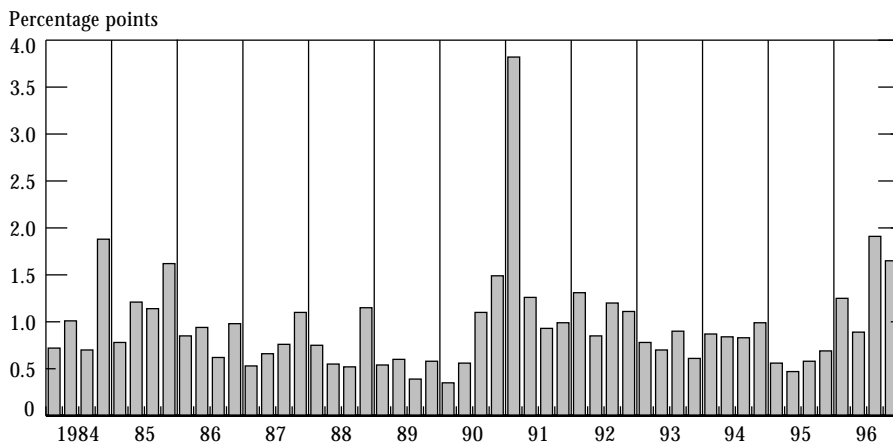
One reason the daily pattern of excess demand within maintenance periods varied over the year is that days of heavy payment flows which heightened the demand for reserves, such as Treasury security settlement days, fell within periods at different times over the course of the year. The Desk attempted to accommodate banks' increased demand for reserves on these days as well as their desire on surrounding days to offset these elevated holdings.<sup>7</sup>

Fluctuations in the funds rate may arise late in the day as banks attempt to avoid either overdrafts or excess reserves, especially when low reserve requirement levels limit their flexibility. One way to observe this is through the intraday range in the funds market. Chart 7 graphs the quarterly averages of this range from 1984 through 1996.<sup>8</sup> The intraday range rose during early 1991 when reserve requirements were sharply reduced; in contrast, the increase over the past two years has been very modest. Another measure of intraday funds rate movements is the volume-weighted standard deviation of daily trading. This statistic captures the level of variation of trading around the effective rate. Chart 8 plots monthly averages of both the range and the standard deviation from 1994 through 1996. The standard deviation of daily trading in the funds market increased modestly over the last two years.

*Reserve forecasts*

Throughout most of 1996 the Desk was in a position of having to add a moderate amount of reserves on a temporary basis. Most of the reserve additions were in the range of \$2.5 billion to \$7.5 billion per period. Larger operations occurred near the end of the year, when the reserve drain caused by the seasonal increase in currency demand necessitated temporary operations that added

*Chart 7*  
**INTRADAY RANGE OF FEDERAL FUNDS RATE**  
Quarterly Average of Nonsettlement Days



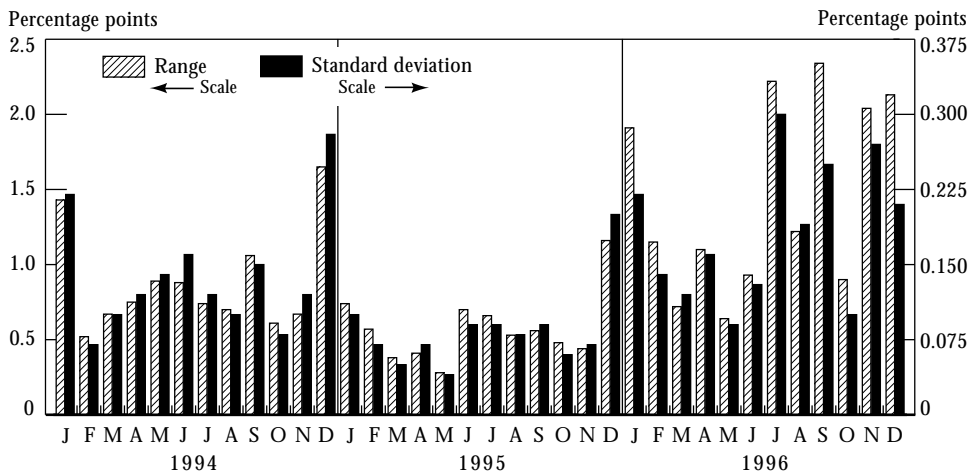
as much as \$16.3 billion of reserves on a period average basis. The largest reserve drain periods occurred in late January and early February, when currency demand was at its yearly seasonal trough.

Chart 9 shows how the projections of open market operations needed to meet path for each reserve maintenance period has varied over the past two years and were revised within each period as required reserves and market factor projections were updated. In most periods in 1996, the revisions between the initial estimates and the final estimates were small, but large revisions—most notably the \$2.7 billion revisions in the maintenance periods ending mid-January and early December—occasionally arose.

On average, the size of market factor forecast errors made when comparing the estimates at the beginning of the period with the final projections made at the end of the period were somewhat larger during 1996 than 1995. The main reason for this apparent deterioration in forecasting accuracy was a significant increase in the error for applied vault cash, although float and currency in circulation also showed larger errors.

The deterioration in the projections of applied vault cash is attributable to an increase in the proportion of depositories that are not bound or only intermittently bound by reserve requirements as a result of sweep accounts.<sup>9</sup> For a bound institution, the level of vault cash that can be applied to reserve requirements (applied vault cash) is equal to the total vault cash held by that

*Chart 8*  
**FEDERAL FUNDS RATE RANGE AND STANDARD DEVIATION**  
 Monthly Average of Nonsettlement Days

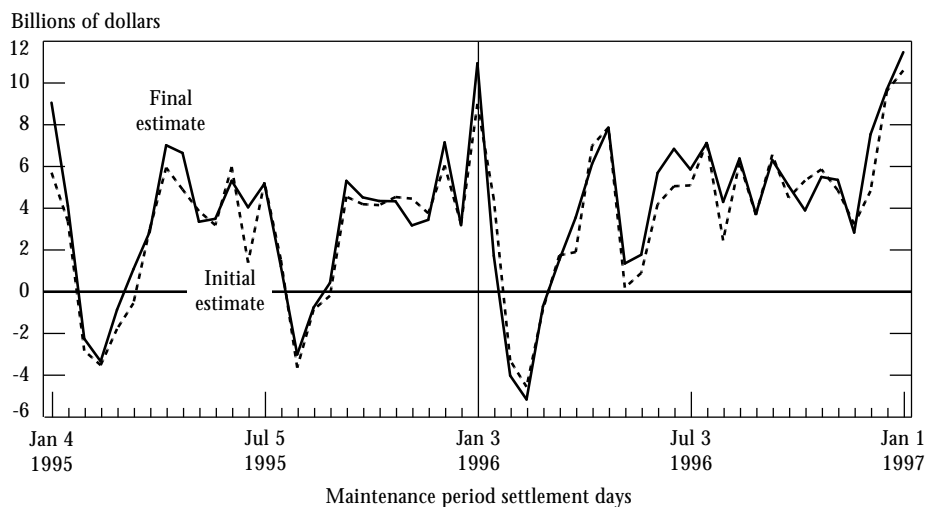


institution in the previous maintenance period. Data on applied vault cash are available for these banks early in the maintenance period. However, for institutions that are nonbound, applied vault cash equals the current level of required reserves, for which final numbers are known only after the maintenance period ends. As more institutions have become nonbound because of sweep arrangements, projections of aggregate applied vault cash have depended more heavily on forecasts of aggregate required reserves and less on known amounts of lagged total vault cash. Moreover, sweep accounts have increased the number of institutions that switch between being bound and nonbound from maintenance period to maintenance period, complicating the projection problem. Staff have mitigated the forecast errors somewhat by modifying procedures and software to take full advantage of incoming data on individual institutions so that applied vault cash projections are updated as the maintenance period progresses. However, errors are likely to remain somewhat larger under the current reserve requirement structure.

*Temporary open market operations*

As a result of the issues discussed above and the impact of low operating balances, the Desk relied on a larger number of overnight system operations (Chart 10). These were used to tailor reserve positions to the day-to-day fluctuations in the intra-period demand for reserves, a demand that was often revealed by the behavior of the funds rate. The number of multiday operations was

*Chart 9*  
**OPEN MARKET OPERATIONS NEEDED TO HIT PATH**  
 By Maintenance Period



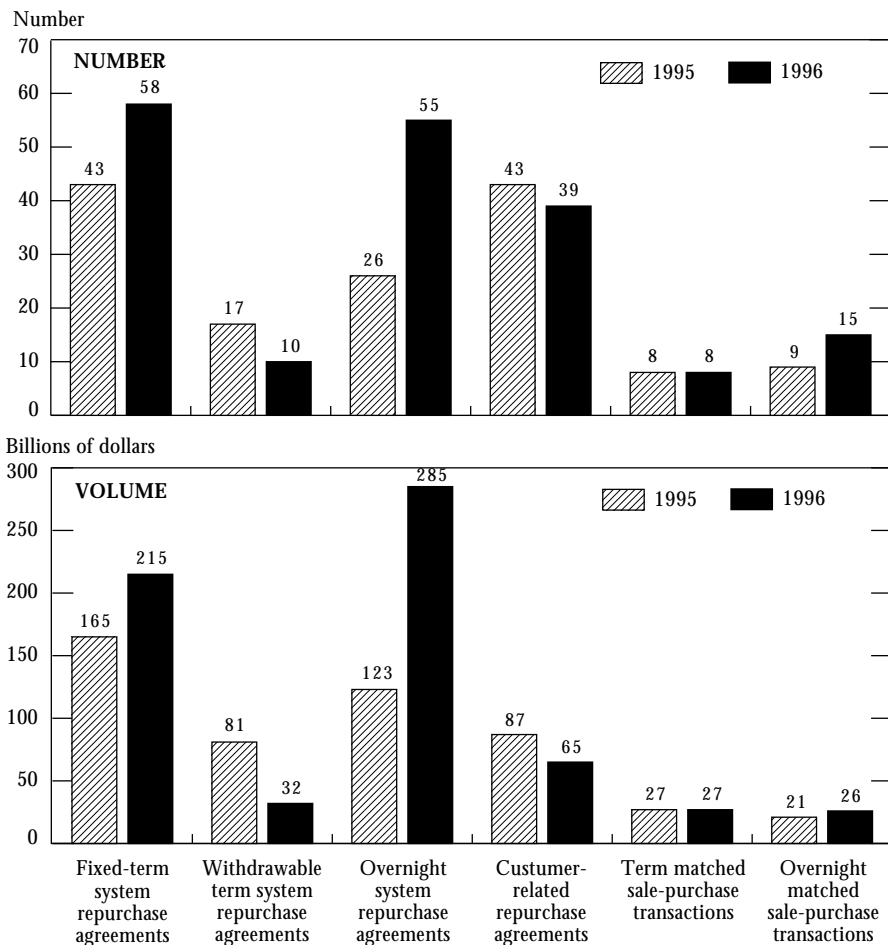
Note: Initial estimates are as of the first day of each period; final estimates reflect all revisions to reserve supply and demand available as of the settlement day morning.



similar to those in recent years, although the Desk lengthened the maturity of many of the operations this year.

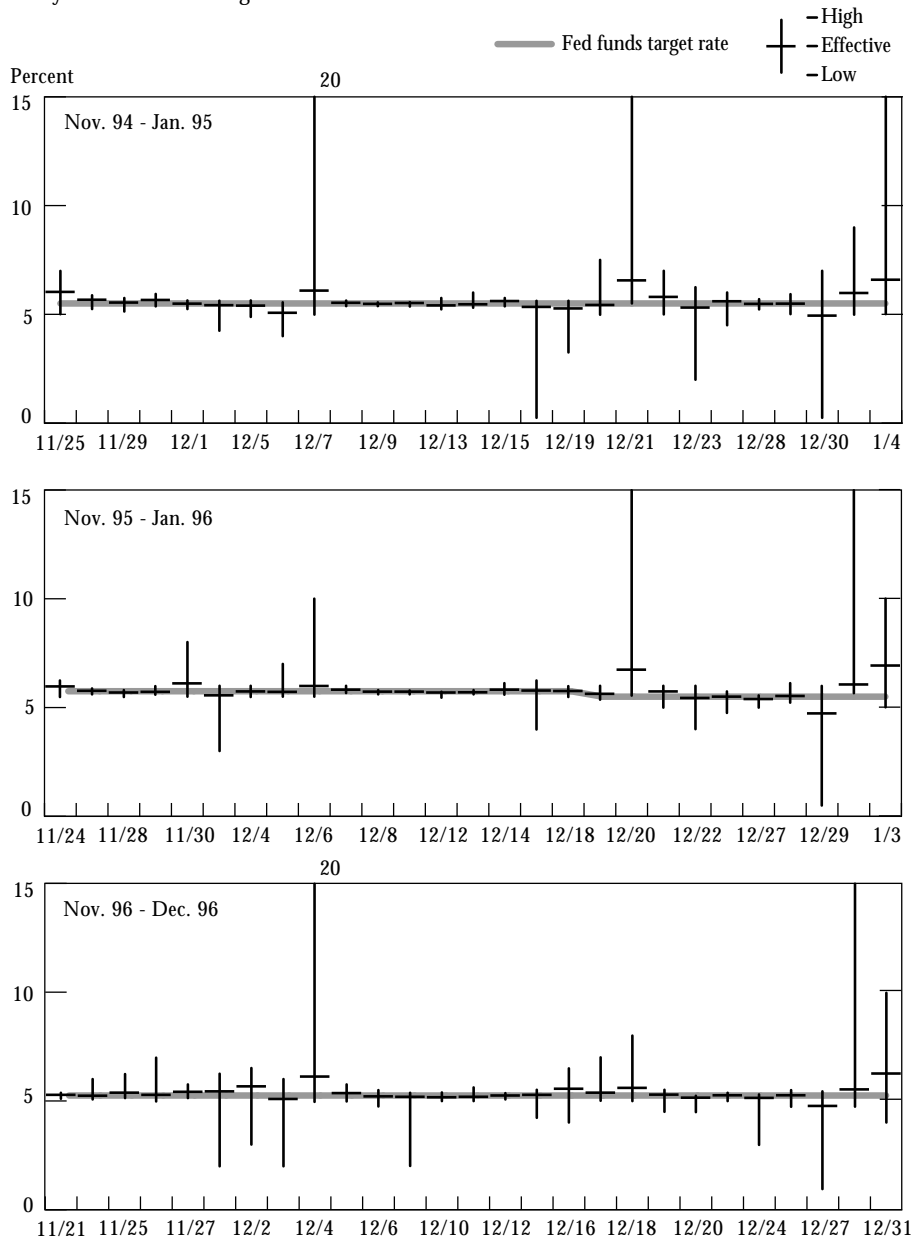
The total volume of RPs arranged exceeded that in 1995, in part reflecting a decision by the Manager of the System Open Market Account to conduct fewer outright operations late in the year. The Desk met the larger need at the end of 1996 by layering a number of sizable, relatively long-lived, temporary operations. Although this strategy received a fair amount of attention from market participants, empirical analysis suggests that the funds market traded much as it had in previous years when the temporary need was smaller, and much as it had been trading in 1996

*Chart 10*  
**SYSTEM TEMPORARY OPERATIONS**



before the seasonal add need developed. Charts 11 and 12 focus on the range and standard deviation of intra-day federal funds trading for the last three maintenance periods of the year. These

*Chart 11*  
**LATE-YEAR FEDERAL FUNDS RATES**  
 Daily Effective and Range

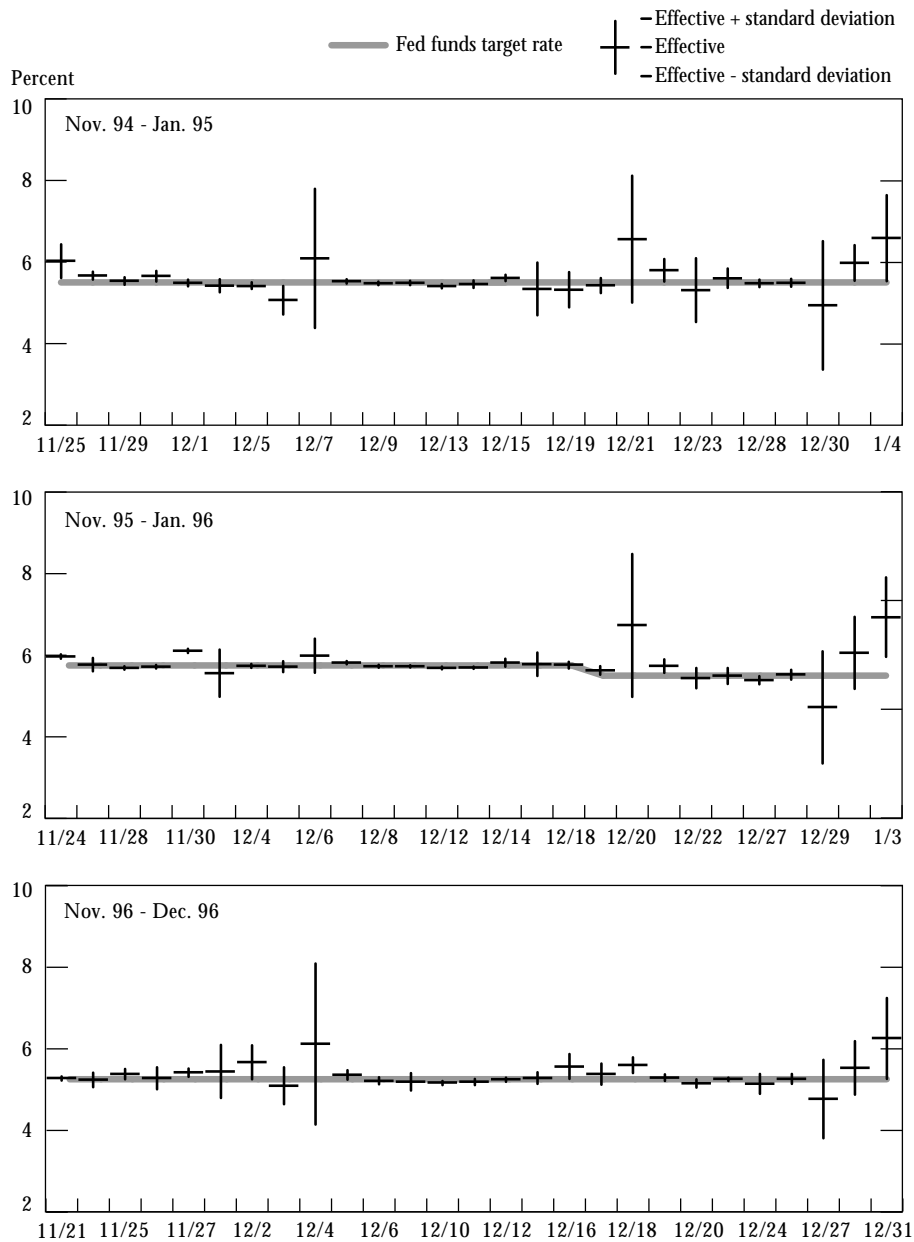


charts indicate that the pattern of funds trading at the end of 1996 was similar to the patterns at the end of 1994 and 1995.

Chart 12

**LATE-YEAR FEDERAL FUNDS RATES**

Daily Effective and Plus and Minus One Standard Deviation around Effective



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## ENDNOTES

1. In conjunction with this change, the deadline for accepting dealers' withdrawals on term RPs that are not fixed was to be advanced by one hour to 10:00 a.m.

2. A retail sweep is initiated when balances in either a demand deposit (DD) or a NOW account are transferred by the financial institution to a nonreservable money market deposit account (MMDA). Depending on the specific sweep arrangements, those funds may be "swept" into the MMDA either for an entire month *unless* presentments exceed the account holder's DD or NOW balances, or for the weekend. For a more in-depth discussion of sweep programs see "Open Market Operations during 1995" in Federal Reserve Bank of New York *Annual Report*, 1995.

All sweep estimates refer to amounts initially swept by the depository institution. These figures are not updated to include any subsequent shifts in the underlying balances.

The increase in initial sweeps during 1996 was distinguished from the activity of earlier years by two factors. First, a larger population of banks and branches opted to either initiate or expand their sweep operations. Second, sweep activity was increasingly augmented to include demand deposits. In December 1995, initial sweeps from demand deposits were minimal, at \$230 million, or just 0.4 percent of the total. Twelve months later, these sweeps rose to \$17.1 billion, approaching 10 percent of all recorded sweeps.

3. The impact of sweeps on reserve requirements is calculated in the following manner. First, we take the level of initial sweeps, which rose by \$116 billion in 1996, from \$54 to \$170 billion. Second, we apply reserve requirements ratios based on the level of deposits at each bank, with a 3 percent reserve requirement on the first \$52 million of deposits and a 10 percent requirement on any additional deposits. Since some smaller banks initiated sweep programs, the 10 percent requirement does not apply to all \$116 billion of sweeps.

4. Required reserve balances (required reserves less applied vault cash) are those balances held at the Federal Reserve to meet required reserve needs. Required operating balances include both required reserve balances and required clearing balances.

5. The decrease induced by sweep-accounts was partially offset by growth in other reservable deposits. Thus, required reserves fell by about \$4 billion less than the estimated sweep effect.

6. Over the final quarter of 1995, on net, the SOMA increased its securities holdings by \$9.7 billion to help meet the \$15.0 billion seasonal increase in currency growth and reserve requirements. In the fourth quarter of 1996, the system met only \$6.4 billion of the \$18.0 billion seasonal increase in currency and required reserves through permanent increases in its portfolio.

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7. Of course, actual excess holdings are affected by the Desk's own reserve management decisions and are subject to unexpected movements in reserve supply arising from operating factors. But the Desk's operations are designed to provide a level of reserve supply consistent with its best estimate of demand.

8. Both Charts 7 and 8 exclude maintenance period settlement days, which are historically volatile because of banks' need to meet reserve requirements. Nevertheless, if we include settlement days, the pattern of slightly increased variability remains.

9. A bank is said to be "bound" by reserve requirements if its holdings of vault cash are insufficient to meet all of its reserve requirement and it consequently must hold positive balances in its account with the Federal Reserve.

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## APPENDIX A

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## **APPENDIX A: AUTHORIZATION FOR DOMESTIC OPEN MARKET OPERATIONS**

Open market operations during 1996 were conducted under the Authorization for Domestic Open Market Operations. No temporary change was made to the Authorization during 1996, and the authorized limit on intermeeting-period changes in System Account holdings of U.S. government and federal agency securities was held to \$8 billion throughout the year.

The Authorization for Domestic Open Market Operations in effect for 1996, 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 \$8.0 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



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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.

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## APPENDIX B

Sheet1

APPENDIX B

Operations in United States Government Securities and Federal Agency Securities  
(In Thousands of Dollars)

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, 1996, together with changes from holdings on December 31, 1995 are summarized in the following table on a delivery basis.

System Open Market Account	Purchases	Sales	Redemptions	Exchanges	Net Changes	Holdings 12/31/96	Holdings 12/31/95
<b>Government Securities</b>							
<u>Treasury Bills:</u>					7,530,793	190,646,505	183,115,712
Outright	9,900,700	0	0	439,123,990 (439,123,990)	9,900,700		
Matched Transactions	3,092,399,472	3,094,769,379	0	0	(2,369,907)		
Market	52,874,000	52,874,000	0	0	0		
Foreign Official	3,039,525,472	3,041,895,379	0	0	(2,369,907)		
<b>Treas. Notes and Bonds maturing:</b>							
Within 1 year	524,200	0	2,014,839	(41,395,214)	(42,885,853)	29,045,221	41,419,243
1 to 5 years	3,898,400	0	0	31,459,662	35,358,062	95,607,624	85,272,558
5 to 10 years	1,116,100	0	0	6,665,552	7,781,652	33,781,913	31,469,096
Over 10 years	1,655,000	0	0	3,270,000	4,925,000	41,825,857	36,920,857
<b>Total Notes and Bonds</b>	<b>7,193,700</b>	<b>0.00</b>	<b>2,014,839</b>	<b>0</b>	<b>5,178,861</b>	<b>200,260,615</b>	<b>195,081,754</b>
<b>Total Gov't secs. Incl. Matched Trans.</b>	<b>3,109,493,872</b>	<b>3,094,769,379</b>	<b>2,014,839</b>	<b>0</b>	<b>12,709,654</b>	<b>390,907,120</b>	<b>378,197,466</b>
<b>(Excl. Matched Trans.)</b>	<b>17,094,400</b>	<b>0</b>	<b>2,014,839</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>390,533,598</b>
<b>Federally Sponsored Agency Issues maturing:</b>							
Within 1 year	0	0	244,295	(3,006,000) 2,906,000	(344,295)	1,223,050	1,241,295
1 to 5 years	0	0	130,000	100,000	(30,000)	519,900	840,950
5 to 10 years	0	0	35,000	0	(35,000)	456,750	526,750
Over 10 years	0	0	0	0	0	25,000	25,000
<b>Total Agency Issues</b>	<b>0</b>	<b>0</b>	<b>409,295</b>	<b>0</b>	<b>(409,295)</b>	<b>2,224,700</b>	<b>2,633,995</b>
<b>Total System Account Incl. Matched Trans.</b>	<b>3,109,493,872</b>	<b>3,094,769,379</b>	<b>2,424,134</b>	<b>0</b>	<b>0</b>	<b>393,131,820</b>	<b>380,831,461</b>
<b>(Excl. Matched Trans.)</b>	<b>17,094,400</b>	<b>0</b>	<b>2,424,134</b>	<b>0</b>	<b>14,670,266</b>	<b>407,837,859</b>	<b>393,167,593</b>
<b>F.R.B. of New York</b>							
<b>Repurchase Agreements     for System</b>	<b>532,921,000</b>	<b>(525,200,000)</b>	<b>0</b>	<b>0</b>	<b>7,721,000</b>	<b>21,583,000</b>	<b>13,862,000</b>
<b>Customer-Related RPs     passed through to     the market</b>	<b>64,920,000</b>	<b>(64,920,000)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Does not include the following maturity shifts:  
## 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
#	30,511,831	(25,022,996)	(5,468,835)	(20,000)
##	326,050	(291,050)	(35,000)	0

Declines appear in parentheses.

December 31, 1996 and 1995 the matched sale-purchase transaction was \$14,706,039,000 and 12,336,132,000 respectively

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## APPENDIX C

APPENDIX C

U.S. TREASURY AND FEDERAL AGENCY SECURITY HOLDINGS  
IN SYSTEM OPEN MARKET ACCOUNT

(In thousands of dollars)

	Holdings*		% of Total	Net change		Holdings*	% of Total	Net change	
	<u>12/31/96</u>		<u>Outstanding</u>	since		<u>12/31/96</u>	<u>Outstanding</u>	since	
				<u>12/31/95</u>				<u>12/31/95</u>	
<u>Treasury Bills</u>					<u>Treasury Notes (Cont'd)</u>				
Issues outstanding:					7.500 %	01/31/97	\$400,000	2.2%	\$0
01/02/97	\$7,161,430		25.1%	\$7,161,430	4.750	02/15/97	1,794,796	9.1%	95,000
01/09/97	# 107,320	(1)	25.8%	107,320	6.750	02/28/97	472,000	4.8%	0
01/16/97	# 4,580,821	(1)	26.8%	4,580,821	6.875	02/28/97	597,000	3.2%	22,000
01/23/97	6,832,500		25.2%	6,832,500	6.625	03/31/97	1,050,000	5.4%	0
01/30/97	6,957,815		25.4%	6,957,815	6.875	03/31/97	484,000	4.3%	0
02/06/97	13,208,010		28.6%	13,208,010	8.500	04/15/97	775,700	9.8%	114,200
02/13/97	6,825,485		25.7%	6,825,485	6.500	04/30/97	735,000	4.0%	385,000
02/20/97	6,828,664		25.2%	6,828,664	6.875	04/30/97	965,000	8.5%	0
02/27/97	7,135,180		27.3%	7,135,180	6.500	05/15/97	3,665,000	16.9%	250,000
03/06/97	11,995,955		26.7%	11,995,955	8.500	05/15/97	564,000	5.7%	0
03/13/97	6,946,501		28.7%	6,946,501	6.125	05/31/97	725,000	3.8%	0
03/20/97	6,473,243		26.9%	6,473,243	6.750	05/31/97	403,000	3.7%	0
03/27/97	6,304,235		25.7%	6,304,235	5.625	06/30/97	692,435	3.6%	0
04/03/97	8,355,000		25.6%	8,355,000	6.375	06/30/97	430,000	3.9%	0
04/10/97	3,617,000		27.5%	3,617,000	8.500	07/15/97	997,710	11.9%	127,000
04/17/97	3,400,000		26.1%	3,400,000	5.500	07/31/97	400,000	3.3%	0
04/24/97	3,200,000		24.4%	3,200,000	5.875	07/31/97	286,970	1.5%	0
05/01/97	8,725,000		26.1%	8,725,000	6.500	08/15/97	2,282,945	11.4%	20,000
05/08/97	4,200,000		29.4%	4,200,000	8.625	08/15/97	497,000	5.3%	0
05/15/97	3,600,000		25.6%	3,600,000	5.625	08/31/97	574,000	5.2%	0
05/22/97	3,500,000		24.8%	3,500,000	6.000	08/31/97	719,830	3.7%	50,000
05/29/97	8,916,000		26.7%	8,916,000	5.500	09/30/97	541,000	4.5%	0
06/05/97	3,750,000		26.6%	3,750,000	5.750	09/30/97	536,380	2.8%	25,000
06/12/97	3,732,826		28.5%	3,732,826	8.750	10/15/97	756,000	8.6%	25,000
6/19/97	3,491,067		26.8%	3,491,067	5.625	10/31/97	552,000	2.9%	2,000
6/26/97	8,375,000		25.6%	8,375,000	5.750	10/31/97	315,000	2.8%	0
07/24/97	4,950,000		24.5%	4,950,000	7.375	11/15/97	3,218,000	15.5%	308,000
08/21/97	5,200,000		25.3%	5,200,000	8.875	11/15/97	600,000	6.1%	0
09/18/97	5,325,000		26.8%	5,325,000	5.375	11/30/97	602,475	3.2%	200,000
10/16/97	6,425,000		31.8%	6,425,000	6.000	11/30/97	275,700	2.4%	0
11/13/97	5,000,000		24.8%	5,000,000	5.250	12/31/97	880,000	4.6%	880,000
12/11/97	<u>5,527,453</u>		26.9%	<u>5,527,453</u>	6.000	12/31/97	500,780	4.1%	0
					7.875	01/15/98	877,800	9.6%	50,000
Matured in 1996				<u>(183,115,721)</u>	5.000	01/31/98	956,730	5.0%	956,730
					5.625	01/31/98	646,000	5.3%	50,000
Total	# <u>\$190,646,505</u>			<u>\$7,530,784</u>	7.250	02/15/98	3,288,560	15.7%	173,000
					8.125	02/15/98	440,000	4.8%	50,000
<u>Treasury Notes</u>					5.125	02/28/98	1,357,320	4.4%	903,320
Issues outstanding:					5.125	03/31/98	1,295,000	9.9%	0
8.000 %	01/15/97	\$606,500	6.3%	\$8,000	6.125	03/31/98	1,598,220	7.4%	1,598,220
6.250	01/31/97	150,000	1.6%	0	7.875	04/15/98	584,500	6.6%	0

\* Delivery basis. (Includes matched sale-purchase transactions.)

# Holdings were reduced by \$11,900,000 of the January 9, T/Bills and \$2,806,039 of the January 16, T/Bills that were sold under matched sale-purchase agreements.

(1) The percentages include the amounts that had been sold under matched transactions.

APPENDIX C (cont'd)

U.S. TREASURY AND FEDERAL AGENCY SECURITY HOLDINGS  
IN SYSTEM OPEN MARKET ACCOUNT

(In thousands of dollars)

			Holdings*	% of Total	Net change				Holdings*	% of Total	Net change
			<u>12/31/96</u>	<u>Outstanding</u>	since				<u>12/31/96</u>	<u>Outstanding</u>	since
					<u>12/31/95</u>						<u>12/31/95</u>
<u>Treasury Notes (Cont'd)</u>			<u>Treasury Notes (Cont'd)</u>								
5.125	%	04/30/98	\$495,000	4.1%	\$0	7.875	%	11/15/99	\$687,000	6.4%	\$20,000
5.875		04/30/98	926,000	4.3%	926,000	7.750		11/30/99	412,145	3.5%	77,300
6.125		05/15/98	3,451,517	16.3%	7,500	7.750		12/31/99	1,354,665	10.9%	25,000
9.000		05/15/98	478,000	5.2%	0	6.375		01/15/00	689,545	6.8%	0
5.375		05/31/98	805,000	6.5%	0	7.750		01/31/00	612,440	5.1%	80,000
6.000		05/31/98	671,000	3.2%	671,000	8.500		02/15/00	832,000	7.8%	0
5.125		06/30/98	1,471,000	11.7%	0	7.125		02/29/00	935,290	7.5%	65,000
6.300		06/30/98	\$1,177,000	5.4%	\$1,177,000	6.875		03/31/00	1,205,510	9.2%	60,000
8.250		07/15/98	1,275,140	13.1%	55,000	5.500		04/15/00	360,000	3.4%	0
5.250		07/31/98	472,000	4.0%	0	6.750		04/30/00	767,750	6.2%	115,000
6.250		07/31/98	866,750	4.0%	866,750	8.875		05/15/00	480,000	4.6%	0
5.875		08/15/98	4,489,808	20.0%	310,000	6.250		05/31/00	642,460	5.1%	15,000
9.250		08/15/98	1,011,000	8.9%	177,000	5.875		06/30/00	740,100	5.9%	15,100
4.750		08/31/98	591,000	4.5%	0	6.125		07/31/00	385,000	3.1%	10,000
6.125		08/31/98	784,300	3.6%	784,300	8.800		08/15/00	\$844,400	7.6%	\$0
4.750		09/30/98	944,000	7.5%	44,000	6.250		08/31/00	515,000	4.3%	0
6.000		09/30/98	931,000	4.4%	931,000	6.125		09/30/00	724,000	6.0%	199,000
7.125		10/15/98	968,593	9.5%	0	5.750		10/31/00	537,430	4.4%	0
4.750		10/31/98	857,900	6.6%	0	8.500		11/15/00	841,000	7.3%	25,000
5.875		10/31/98	825,000	3.9%	825,000	5.625		11/30/00	380,000	3.1%	30,000
5.500		11/15/98	2,519,635	12.2%	35,000	5.500		12/31/00	800,000	6.3%	800,000
8.875		11/15/98	535,000	5.4%	25,000	5.250		01/31/01	800,000	6.3%	800,000
5.125		11/30/98	929,000	7.7%	50,000	7.750		02/15/01	677,500	6.0%	0
5.625		11/30/98	285,000	1.4%	285,000	5.625		02/28/01	800,000	6.3%	800,000
5.125		12/31/98	1,579,662	12.7%	0	6.375		03/31/01	1,500,000	10.6%	1,500,000
5.750		12/31/98	875,000	4.2%	875,000	6.25		04/30/01	865,000	6.3%	865,000
6.375		01/15/99	892,045	8.5%	36,500	8.000		05/15/01	892,000	7.2%	0
5.000		01/31/99	377,000	2.9%	0	6.500		05/31/01	655,000	4.8%	655,000
5.000		02/15/99	3,472,140	15.8%	3,472,140	6.625		06/30/01	1,100,000	7.7%	1,100,000
8.875		02/15/99	845,000	8.7%	152,000	6.625		07/31/01	700,000	5.0%	700,000
5.500		02/28/99	435,000	3.7%	0	7.875		08/15/01	1,115,000	9.1%	20,000
5.875		03/31/99	1,875,000	14.6%	0	6.500		08/31/01	525,000	3.8%	525,000
7.000		04/15/99	1,073,700	10.5%	0	6.375		09/30/01	650,000	4.5%	650,000





10.750	02/15/03	739,250	24.6%	85,000	6.250	08/15/23	980,000	4.3%	0	
10.750	05/15/03	256,000	8.0%	50,000	7.500	11/15/24	450,000	3.9%	0	
11.125	08/15/03	432,500	12.4%	6,100	7.625	02/15/25	700,000	6.0%	0	
11.900	11/15/03	\$505,240	6.9%	\$56,000	6.875	08/15/25	1,100,000	8.7%	0	
12.375	05/15/04	769,786	20.3%	121,000	6.000	02/15/26	900,000	7.0%	900,000	
13.750	08/15/04	367,000	9.2%	176,000	6.750	08/15/26	900,000	8.3%	900,000	
11.625	11/15/04	519,200	6.3%	0	6.500	11/15/26	<u>1,470,000</u>	12.8%	<u>1,470,000</u>	
8.250	05/15/05	1,513,660	36.0%	0						
12.000	05/15/05	214,476	5.0%	0	Matured in 1996				0	
10.750	08/15/05	882,000	9.5%	357,000						
9.375	02/15/06	20,000	0.4%	0	Total Treasury Bonds				<u>\$49,338,894</u>	<u>\$5,270,290</u>
7.625	02/15/07	1,396,164	33.2%	0						
7.875	11/15/07	378,500	25.2%	0	FHLB					
8.375	08/15/08	788,500	37.5%	0	Issues outstanding:					
8.750	11/15/08	1,588,500	30.5%	0	6.850	% 02/25/97	\$26,700	0.6%	\$0	
9.125	05/15/09	891,205	19.4%	20,000	7.650	03/25/97	12,000	2.6%	0	
10.375	11/15/09	1,075,939	25.6%	0	9.150	03/25/97	5,000	1.7%	0	
11.750	02/15/10	717,400	28.7%	0	6.990	04/25/97	14,000	3.8%	0	
10.000	05/15/10	1,176,556	39.2%	0	5.260	04/27/98	14,000	4.7%	0	
12.750	11/15/10	1,260,865	26.8%	0	9.250	11/25/98	5,000	1.1%	0	
13.875	05/15/11	1,073,542	23.3%	30,000	9.300	01/25/99	2,000	0.6%	0	
14.000	11/15/11	885,091	18.1%	0	8.600	06/25/99	3,900	1.2%	0	
10.375	11/15/12	1,611,741	14.7%	0	8.450	07/26/99	5,000	2.0%	0	
12.000	08/15/13	3,040,772	20.5%	25,000	8.600	08/25/99	11,000	4.5%	0	
13.250	05/15/14	869,450	17.4%	259,000	8.375	10/25/99	10,000	3.7%	0	
12.500	08/15/14	905,720	17.8%	50,000	8.600	01/25/00	<u>6,000</u>	2.0%	<u>0</u>	
11.750	11/15/14	1,195,000	19.9%	0						
11.250	02/15/15	1,335,733	10.5%	0	Matured in 1996				(116,000)	
* Delivery basis. (Includes matched sale-purchase transactions.)							Total	<u>\$114,600</u>	<u>(\$116,000)</u>	
** Called Issue										

APPENDIX C (cont'd)

U.S. TREASURY AND FEDERAL AGENCY SECURITY HOLDINGS  
IN SYSTEM OPEN MARKET ACCOUNT

(In thousands of dollars)

Holdings*	% of Total	Net change		Holdings*	% of Total	Net change					
		since	since			since	since				
12/31/96	Outstanding	12/31/95	12/31/95	12/31/96	Outstanding	12/31/95	12/31/95				
<b>FNMA</b>				<b>FFCB</b>							
Issues outstanding:				Issues outstanding:							
7.600	%	01/10/97	\$160,000	9.7%	\$0	5.330	%	01/02/97	\$195,000	12.4%	\$195,000
9.200		06/10/97	27,000	4.5%	0	5.560		01/02/97	85,000	12.4%	85,000
8.950		07/10/97	10,000	1.7%	0	5.320		02/03/97	125,000	7.9%	125,000
9.550		09/10/97	35,000	7.0%	0	5.660		02/03/97	36,000	7.4%	36,000
5.700		09/11/97	0	0.0%	(45,000)**	5.220		03/03/97	270,000	16.0%	270,000
5.350		10/10/97	4,700	0.6%	0	5.430		03/03/97	50,000	14.7%	50,000
8.650		02/10/98	10,000	1.6%	0	5.450		04/01/97	40,000	13.3%	40,000
5.300		03/11/98	50,000	6.3%	0	5.340		05/01/97	29,000	7.0%	29,000
9.150		04/10/98	30,000	5.0%	0	5.290		06/02/97	57,000	15.8%	57,000
9.400		08/10/98	50,000	10.0%	0	11.900		10/20/97	15,000	3.3%	-
7.850		09/10/98	48,000	7.4%	0	8.650		10/01/99	<u>10,000</u>	2.9%	<u>-</u>

5.300	12/10/98	15,000	2.1%	0						
7.050	12/10/98	30,000	2.7%	0		Matured in 1996			(887,000)	
9.550	03/10/99	25,000	3.6%	0						
7.500	03/10/99	0	0.0%	(50,000)**		Total	\$912,000		\$0	
8.700	06/10/99	23,000	2.8%	0						
8.450	07/12/99	\$5,000	1.0%	\$0		FLB				
7.000	08/11/99	15,000	3.0%	0		Issues outstanding:				
6.450	10/14/99	100,000	25.0%	100,000		7.350	01/20/97	\$16,650	3.7%	-
8.350	11/10/99	7,000	0.4%	0						
6.100	02/10/00	25,000	5.0%	0		Matured in 1996				(49,795)
9.050	04/10/00	10,000	1.3%	0						
9.200	09/11/00	10,000	2.5%	0		Total	\$16,650			(49,795)
8.625	04/10/01	0	0.0%	(35,000)**						
8.700	06/11/01	0	0.0%	(20,000)**						
8.875	07/10/01	0	0.0%	(5,000)**		Total Agency Issues	\$2,224,700			(\$1,002,710)
7.200	01/10/02	10,000	2.0%	0						
7.900	04/10/02	10,000	1.4%	0						
7.800	06/10/02	40,100	6.7%	0		Total Treasury				
7.300	07/10/02	12,000	2.4%	0		& Agency Issues	\$393,131,820			\$12,675,517
6.950	09/10/02	35,000	5.4%	0						
6.625	04/10/03	30,000	4.3%	0						
6.450	06/10/03	25,000	5.0%	0						
6.200	07/10/03	15,000	3.0%	0						
5.800	12/10/03	10,000	1.3%	0						
7.600	04/14/04	100,000	12.5%	0						
7.550	06/10/04	24,650	3.1%	0						
8.050	07/14/04	5,000	0.8%	0						
8.250	10/12/04	30,000	7.5%	0						
6.850	09/12/05	20,000	5.0%	0						
6.700	11/10/05	100,000	25.0%	0						
10.350	12/10/15	10,000	4.0%	0						
8.200	03/10/16	15,000	3.7%	0						
						Matured in 1996				(188,500)
Total		\$1,181,450								(\$243,500)

\* Delivery basis.

\*\* Called Issue