
DOMESTIC OPEN MARKET OPERATIONS
DURING 2003

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FEDERAL RESERVE BANK OF NEW YORK, MARKETS GROUP

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* Revised May 4, 2005: This report was revised to incorporate an additional matched-sale purchase (MSP) in 2002 that was erroneously excluded from the original analysis.

DOMESTIC OPEN MARKET OPERATIONS DURING 2003

I. IMPLEMENTATION OF MONETARY POLICY IN 2003

A. Introduction

The directives issued by the Federal Open Market Committee (FOMC) pertinent to the implementation of domestic open market operations instruct the Trading Desk (Desk) of the Federal Reserve Bank of New York (FRBNY) to foster conditions in the market for reserves consistent with maintaining the federal funds rate at an average around a specified target rate. The Desk arranges open market operations to target the federal funds rate, while at the same time achieving other objectives that may affect the structure of Federal Reserve holdings of domestic financial assets.

This report reviews the conduct of open market operations during 2003. It begins with a description of the operating procedures that are used to influence the federal funds rate and a summary of the key new developments in the policy implementation framework. The demand for balances at the Federal Reserve and the behavior of autonomous factors outside the control of the Desk that affect the supply of these balances are described in the following sections. Next, the different domestic financial assets held by the Federal Reserve, and the various types of open market operations used to adjust them, are reviewed. Finally, the behavior of the federal funds rate and use of the discount window in 2003 are discussed.

B. Overview of Operational Procedures to Control the Federal Funds Rate

The federal funds target rate was changed on only one occasion in 2003. At its regularly scheduled meeting in June, the FOMC reduced the target rate by $\frac{1}{4}$ percentage point to a level of 1 percent. In a related move, the discount rate on primary credit was lowered by a similar amount, to 2 percent. Earlier in the year, this new discount window facility, along with the secondary credit facility, was established to replace the adjustment and extended credit programs. At that time, with the federal funds target rate at $1\frac{1}{4}$ percent, the primary and secondary credit rates were set at $2\frac{1}{4}$ and $2\frac{3}{4}$ percent, respectively.

Table 1: Changes to the Federal Funds Target Rate and Borrowing Rates²

Effective Date of Change	Federal Funds Target Rate (Percent)	Basic Discount Rate (Percent)	Primary Credit Rate (Percent)	Secondary Credit Rate (Percent)
November 11, 2002	1 ¼	1		
January 9, 2003			2 ¼	2 ¾
June 25, 2003	1		2	2 ½

To target the federal funds rate, the Desk uses open market operations to align the supply of balances held by depository institutions at the Federal Reserve—or Fed balances—with banks’ demand for holding balances at the target rate. Each morning, the Desk considers whether open market operations are needed based on estimates of the supply of and demand for Fed balances. The Desk aims to supply a level of Fed balances in line with its best estimate of demand. From time to time, the Desk’s provision of balances may be guided by the deviation of the federal funds rate in the morning from the federal funds target rate.

The average level of Fed balances that banks demand over a two-week reserve maintenance period is in large measure determined by requirements to hold Fed balances, with only a small level of additional, or excess, balances typically demanded. The ability of depository institutions to average their holdings of Fed balances over the days within a maintenance period to meet their requirements gives them considerable leeway in managing their accounts from day to day. This flexibility limits the volatility in rates that can develop when the Desk misestimates either the supply of or demand for Fed balances. Nonetheless, the federal funds rate can move above the target rate if Fed balances fall so low that some banks have difficulty finding sufficient funds to cover required balance deficiencies or potential overdrafts in their Fed accounts. Conversely, the federal funds rate can fall below the target rate if Fed balances are so high that some banks risk ending a maintenance period holding undesired excess balances.

² The interest rates charged on discount window borrowing change periodically to complement changes in the FOMC's target for the federal funds rate and to achieve broad monetary policy goals. The effective date of a change to the discount rate at individual Federal Reserve Banks can lag the change in the federal funds target rate by a day or two if the Bank’s Board of Directors does not have a request for a rate change pending before the Board of Governors. General information on the discount window is available at <http://www.frbdiscountwindow.org/>.

C. New Developments in 2003

Primary and Secondary Credit Discount Window Facilities

Effective January 9, 2003, the primary and secondary credit facilities were established to replace the prior adjustment and extended credit discount window structure. The discount rate for primary credit is set above the federal funds target rate, and the rate for secondary credit above that; whereas, previously the discount rate for adjustment credit had been set below the federal funds target rate. The above-market rate on primary credit is intended to eliminate the subsidy and reduce the administrative needs associated with the previous facility given the incentive depository institutions may have had to exploit the spread between market rates and the below-market discount rate. The level at which the primary credit rate is set is intended to be high enough to encourage borrowing only to meet short-term, unforeseen needs. Depository institutions in sound financial condition are eligible to borrow under the primary credit facility for very short terms, and those depository institutions not qualifying for primary credit are able to apply for secondary credit either to meet short-term liquidity needs or to resolve more severe financial difficulties. As always, loans under the discount window must be fully secured.

Changes to the Authorization for Domestic Open Market Operations

At its January 2003 meeting, the FOMC approved one change to the Authorization for Domestic Open Market Operations (Appendix A). The change, which pertained to paragraph 2 of the Authorization, gave the FRBNY discretion to set the minimum lending fee for the System Open Market Account (SOMA) securities lending program. Previously, the minimum fee was set at 1.0 percent.

Changes to the Guidelines for the Conduct of System Open Market Operations in Federal Agency Issues

Also at its January 2003 meeting, the FOMC approved the permanent removal of paragraphs 3 through 6 from the Guidelines for the Conduct of System Open Market Operations in Federal Agency Issues (Appendix B). The elimination of these provisions allowed for greater leeway in conducting temporary operations in federal agency securities and specifically allowed for the inclusion of pass-through mortgage securities of the Government National Mortgage Association (GNMA). These paragraphs had previously been suspended on an annual basis since 1999.

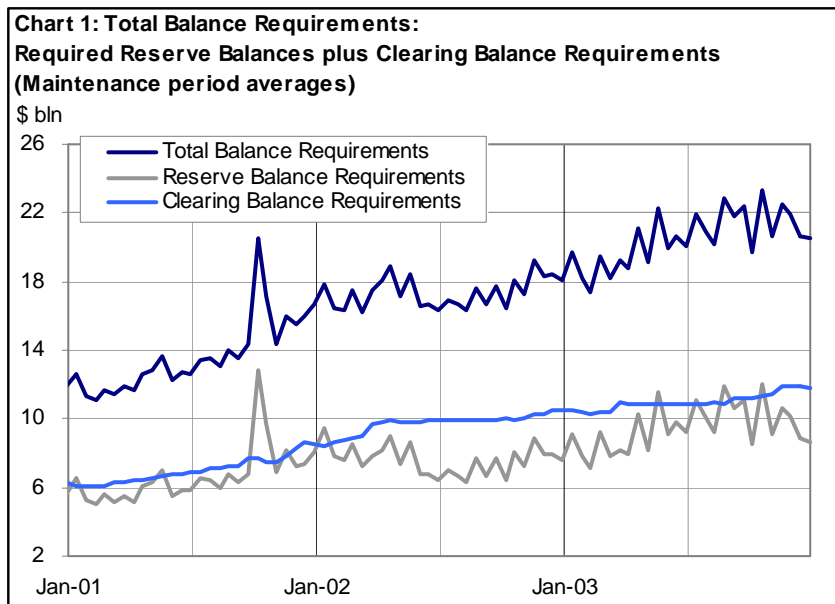
II. BANKS' DEMAND FOR FED BALANCES

In designing permanent and temporary open market operations, the Desk aims to satisfy banks' demand for holding Fed balances on a daily and a maintenance period-average basis. Total demand consists of two components: the portion needed to meet all balance requirements and the desired portion held in excess of requirements.

A. Total Balance Requirements

A bank's total balance requirement is the average level of balances it must hold at the Federal Reserve over a two-week maintenance period to meet regulatory and/or contractual obligations. Total balance requirements can be separated into two basic parts: reserve balance requirements (the portion of reserve requirements not met with vault cash) and clearing balance requirements. In addition, as-of adjustments may be applied to a bank's position that affect the actual level of Fed balances that an institution would need to maintain to fulfill its total balance requirements. Reserve balance requirements and clearing balance requirements are known at the start of each maintenance period, which facilitates estimation of the demand for Fed balances.

As interest rates remained at record low levels during 2003, total balance requirements increased by more than \$2 billion, with roughly equal increases in reserve balance requirements and clearing balance requirements (Chart 1). The increase in reserve balance requirements was due primarily to higher reservable demand deposit accounts at depository institutions, resulting from the very low opportunity cost of holding such non-interest-bearing accounts. Contractual clearing balances increased steadily throughout the year. Amid lower interest rates, banks needed larger balances to achieve the desired level of earnings credits to pay for Federal Reserve priced services.



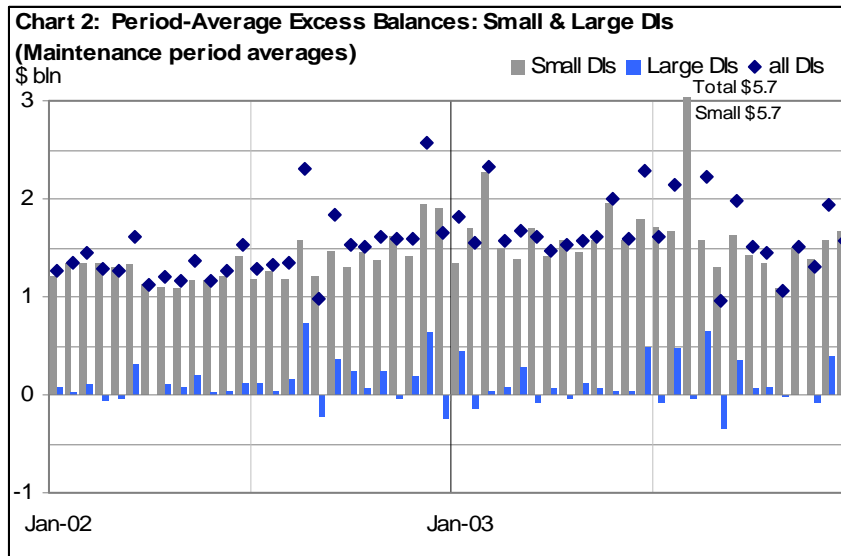
B. Excess Balances

Period-average and daily levels of Fed balances are measured relative to period-average levels of total balance requirements to obtain measures of period-average and daily excess balances. Although excess balances earn no interest and represent a lost investment opportunity, in practice, many banks routinely hold a positive level of excess balances—usually reflecting precautionary motives—that, in the aggregate, represents an important component of the total demand for Fed balances. The Desk must account for this demand in its provision of Fed balances within a maintenance period.³

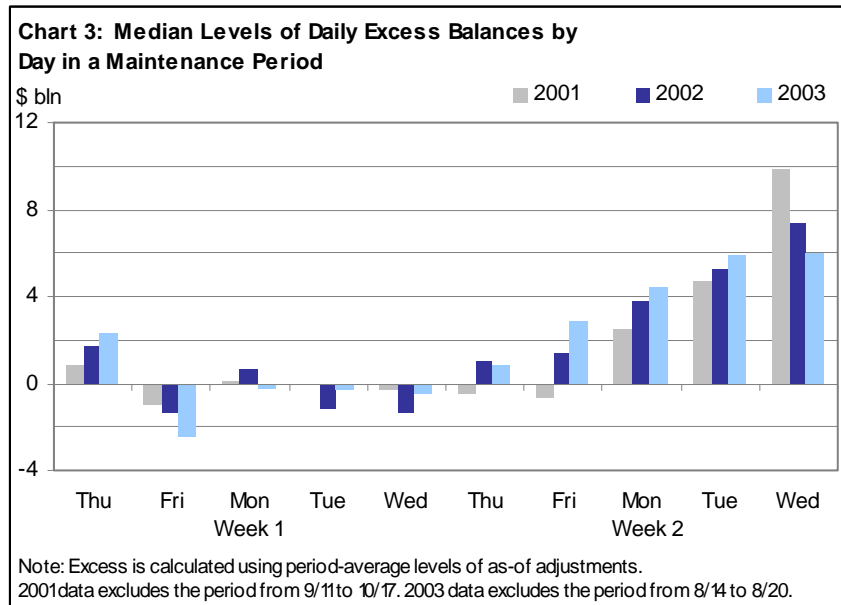
Through much of the year, excess balances remained at marginally elevated levels carried over from the end of 2002, coming in consistently at or above \$1.5 billion through August (Chart 2)⁴. However, over the last quarter of the year, excess levels were considerably more volatile, registering below that level in several periods. Excess demand continued to be concentrated at smaller institutions, as larger institutions tend to manage their Fed balances more actively and work to minimize such holdings.

³ The Desk cannot directly observe the quantity of excess balances that banks demand at the target rate; it must make an estimate. Since the funds rate over time is quite close to the target rate on average, observed levels of excess balances are considered a good measure of banks' demand for excess. That said, a number of factors can cause observed excess levels to deviate from the quantity banks demand at the target rate on any day or for any period.

⁴ Excess levels during the maintenance period ended August 20 were unusually elevated at \$5.7 billion due to specific circumstances surrounding the blackout occurring on August 14 and 15.

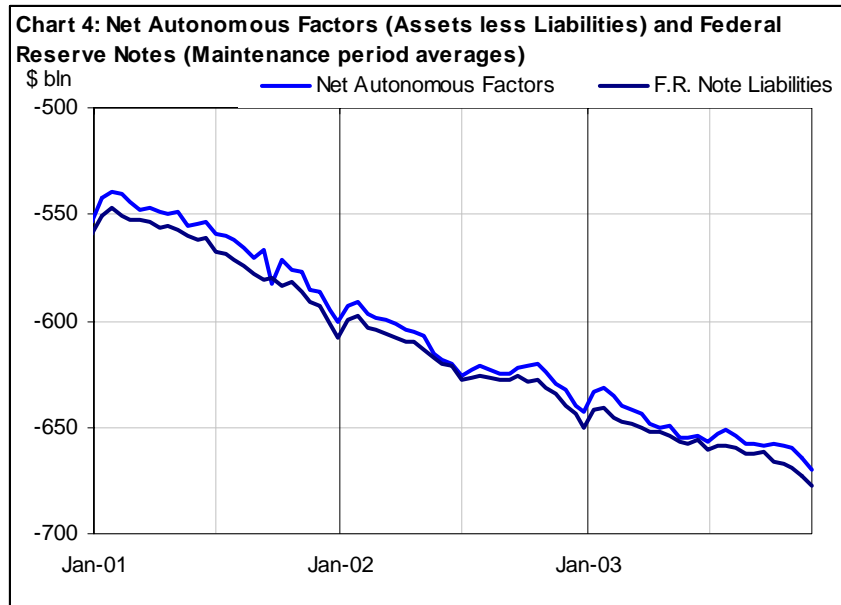


The distribution of daily intraperiod excess demand continued to be heavily skewed towards days late in the maintenance period (Chart 3). As was the case in 2002, it appears that higher balance requirements reduced the risk to banks of end-of-day overdrafts, so banks tended to structure their accumulation of balances to increase protection against the risk of holding undesired excess balances. In particular, institutions exhibited an increased willingness to incur considerably larger deficiencies over the first weekend of a maintenance period, which then needed to be offset later in the period. This effect is most noticeable in the higher balances held on the second Friday of a maintenance period, which registered a large increase from prior years, but is also evident on the following Monday and Tuesday.



III. AUTONOMOUS FACTORS AFFECTING THE SUPPLY OF FED BALANCES

The supply of Fed balances is determined by the size of the domestic financial portfolio, the amount of discount window lending and the levels of various autonomous factors on the Federal Reserve's balance sheet. Autonomous factors consist largely of Federal Reserve assets other than the domestic financial portfolio and discount window loans, and liabilities other than Fed balances. The Desk has little or no control over the behavior of autonomous factors. In 2003, the net level of autonomous factors fell by \$35 billion, less than in prior years, which translates to an equivalent drain on Fed balances from this source (Chart 4).

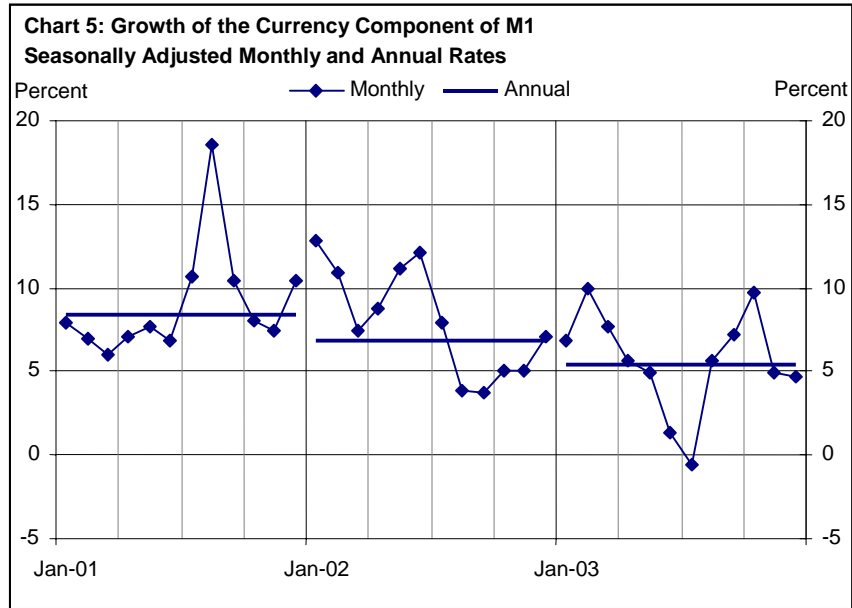


Developments in Federal Reserve Notes

As the single largest liability on the Fed's balance sheet, the behavior of Federal Reserve notes (F.R. notes) is the primary determinant of the level of autonomous factors. In 2003, F.R. notes grew 5.7 percent, a rise of \$36 billion, smaller than in recent years. While this increase is not exceptionally low compared with historical averages, growth over the course of the year, as approximated by monthly growth of the seasonally adjusted currency component of M1, was uneven (Chart 5).⁵ Increases early in the year were fairly typical, but virtually stalled during June and July, before resuming in August. These fluctuations in the overall expansion in F.R. notes were driven by developments both at home and abroad. Domestic demand weakened during the first half of the year, but showed evidence of increasing after the enactment of Federal tax cuts and the payment of Federal tax rebates in July. Foreign demand for U.S. currency

⁵ Currency in circulation includes all paper currency and coin held by individuals and businesses, including banks both domestic and foreign. It does not include currency held by the U.S. Treasury and the Federal Reserve. Federal Reserve notes are the predominant form of paper currency. The currency component of the narrow money supply (M1) is defined as currency in circulation less currency and coin held in the

slowed considerably after the first quarter, and only in the final months of the year did demand abroad strengthen as post-war reflows began to diminish.



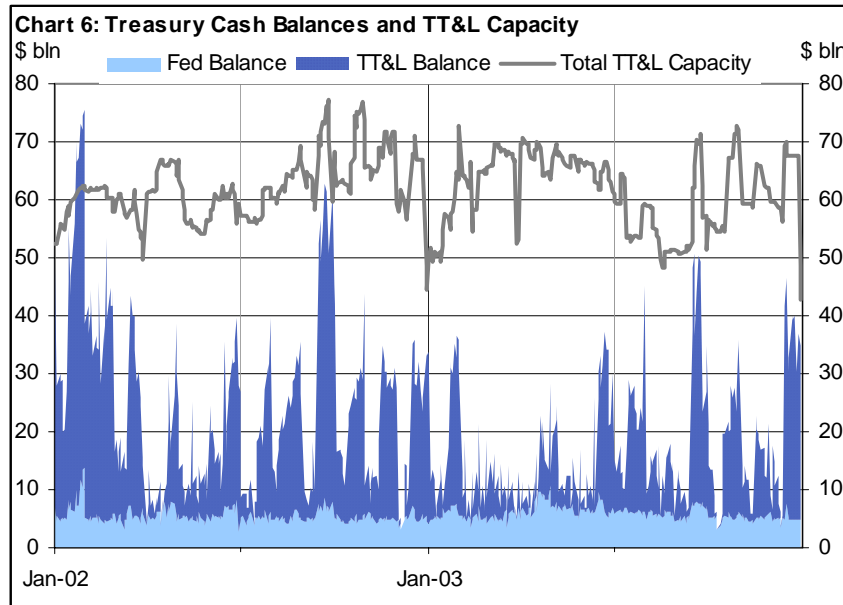
Developments Affecting Other Factors

In March, President Bush issued an executive order directing the transfer of funds controlled by the Iraqi government and its financial and oil institutions to the U.S. Treasury. On behalf of the Treasury, the FRBNY created a sub-account of the Treasury’s general account (TGA)—the account held at the FRBNY from which Treasury expenditures are made. The balances in this sub-account, called the Special Purpose Account, could not be used for Treasury expenditures, so the Treasury raised its target balance for the TGA accordingly. In late May, the Central Bank of Iraq Development Fund Account was established to collect funds for the new Iraqi government, with the proceeds invested in the foreign RP pool.

Throughout 2003, the U.S. Treasury's overall cash position, including funds held in the TGA and additional cash balances held in the Treasury Tax and Loan program (TT&L), was considerably lower than in prior years. Treasury's average cash position was just \$17 billion during 2003, \$8 billion less than 2002. This lower overall cash position meant that the TGA was never elevated as a result of capacity constraints that can prevent the Treasury from investing excess funds with commercial banks participating in the TT&L program (Chart 6). In contrast, with a higher cash position in 2002, there were five occasions when the TGA exceeded its normal target due to insufficient capacity at commercial banks that drained nearly \$8 billion of Fed balances. Treasury's close proximity to its statutory debt ceiling during the spring and relatively weak tax receipts mitigated some seasonal spikes in the Treasury's overall cash position.

vaults of depository institutions. M1-currency is published in both seasonally adjusted and not seasonally adjusted forms.

However, even after the debt ceiling was raised in late May, Treasury continued to have a low overall average cash position relative to prior years. On 14 occasions during 2003, Treasury's overall cash position was so low that its balance at the Fed could not reach the usual target, almost double the number in 2002.



Volatility and Predictability of Key Autonomous Factors

Variability of autonomous factors, as measured by average absolute daily changes, increased in 2003, despite less variability in the TGA (Table 2). The volatility of float was higher, apparently affected by particularly poor weather conditions at various times of the year and, other internal challenges within Fed districts. Variability in the foreign RP pool was higher as well due to several temporary increases in participation levels by a handful of accounts. This greater variability led to decreased overall forecast accuracy as measured by both daily average and maximum absolute forecast errors.

Table 2: Daily Changes and Forecast Misses in Autonomous Factors

Average and maximum of absolute values

(millions of dollars)

	2001		2002		2003	
	Average	Max.	Average	Max.	Average	Max.
Daily Change						
Currency in circulation	852	2,696	874	3,015	858	3,128
Treasury balance	823	7,413	903	8,622	745	3,552
Foreign RP pool	596	3,273	500	3,502	629	4,325
Float	894	4,923	756	4,484	1,059	6,704
Net value	1,541	7,209	1,451	6,269	1,714	7,361
Daily Forecast Miss						
Currency in circulation	210	1,043	198	646	163	919
Treasury balance	537	2,975	481	3,629	489	2,224
Foreign RP pool	89	2,525	94	2,135	86	1,506
Float	446	2,084	411	2,028	551	4,020
Net value	806	4,128	721	2,557	803	3,805

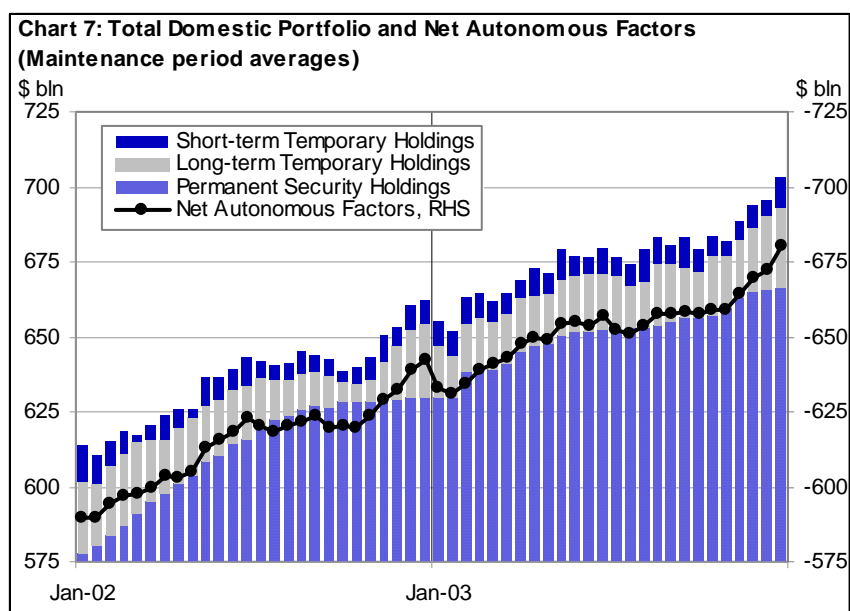
Notes:

Forecast misses are based on New York staff estimates; 2001 data excludes September 11 through September 28; *Net value* reflects offsetting movements and forecast misses of all autonomous factors

IV. DOMESTIC FINANCIAL ASSETS & OPEN MARKET OPERATIONS

A. Use of Different Types of Open Market Operations

The value of the Federal Reserve's domestic financial assets resulting from both outright and temporary open market operations mirrors the net level of autonomous factors and Fed balances, reviewed in the preceding sections, less discount window borrowing (Chart 7). Open market operations and the distribution of assets is heavily influenced by the specific behavior of individual autonomous factors and Fed balance demand, and the time horizon over which movements are expected to occur.



Short-term temporary operations are the primary tool used to address the daily variability in autonomous factors and the demand for Fed balances within a maintenance period. When addressing reserve needs over these short horizons, the Desk uses both short-term repurchase agreements (RPs) and reverse RPs⁶. The short-term RP is by far the most common type of operation that the Desk arranges, although from time to time the need to reduce temporarily the level of Fed balances may arise, in which case reverse RPs are arranged. As a general practice, levels of other domestic financial assets are set so that the likely volume of short-term temporary operations arranged on upcoming days and weeks is expected to be of sufficient size to justify market entry.

⁶ Short-term RPs are currently defined as those with an original maturity of less than 13 days; all others are considered long-term RPs. This definition has been in effect since late-September 2003, when a change to the original maturity of the regular, weekly long-term RP operations from 28 days to 14 days was implemented. Previously, short-term RPs were defined as those with original maturities of 15 days or less. Wherever either short- or long-term RPs are referred to in this document, they are classified according to the definition in place at that time.

Longer term RPs are designed to address temporary needs for Fed balances over somewhat longer horizons. They may be increased to address protracted, but temporary, increases in either autonomous factor liabilities or the demand for Fed balances expected to last more than one maintenance period. They may also be used to address any temporary shortfall in the desired level of outright security holdings until such operations can be arranged. Also, maintaining a base level of longer term RPs outstanding, under certain circumstances, can offer the Desk the flexibility to address temporary, but prolonged, needs to reduce the supply of Fed balances by lowering the level of outstanding longer term RPs rather than arranging reverse RPs for extended periods or selling securities from outright holdings. Since these operations are not used to address daily swings in autonomous factors, they can be arranged on a weekly basis early in the morning prior to the daily fine-tuning short-term operations, when the repo market is most liquid.

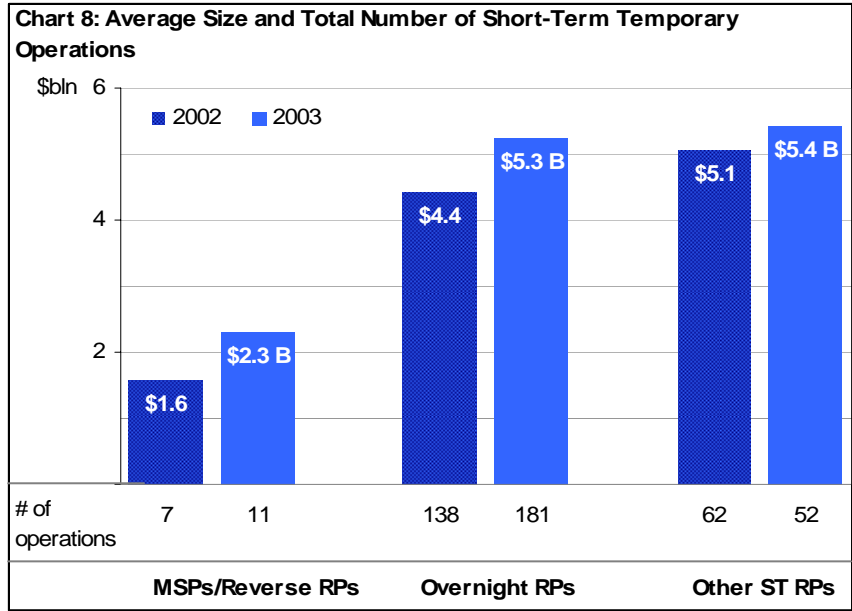
Finally, changes in outright holdings of U.S. Treasury securities in the domestic System Open Market Account (SOMA) are made in accordance with net changes in autonomous factors and Fed balance demand that are expected to endure over much longer run horizons. Outright transactions are conducted with much less frequency than temporary operations and are typically planned weeks in advance as needs for Fed balances accumulate.

B. Temporary Holdings and Operations

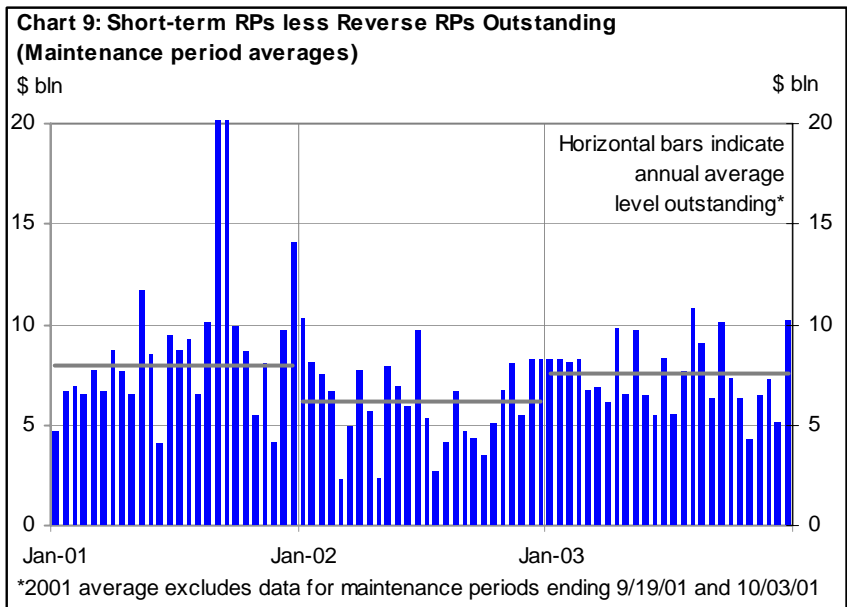
Short-Term Temporary Operations

In 2003, the Desk structured operations in longer maturity domestic financial assets with the aim of holding slightly higher levels of short-term RPs than in 2002. This approach was designed to provide the Desk with increased scope to conduct routine, daily operations for fine-tuning the federal funds rate, specifically on days when the need for open market operations was relatively small and may have otherwise not been large enough to justify arranging an operation.

This year's strategy had an impact on the frequency of the Desk's operations, as well as their size. In all, the Desk arranged 181 overnight RPs (including those spanning a holiday or a weekend), versus 138 in 2002 (Chart 8). Meanwhile, the average transaction size on such RPs rose to \$5.3 billion, from \$4.4 billion last year. On 11 occasions, the Desk still needed to drain Fed balances temporarily with reverse RPs to bring supply in line with demand because of an unexpected surfeit from autonomous factors. The increased frequency in overnight transactions, including reserve-draining operations, may also be attributable to somewhat heightened volatility in autonomous factors, as discussed in Section III, which made it more difficult to achieve reliably the desired supply of Fed balances through multi-day short-term RPs.

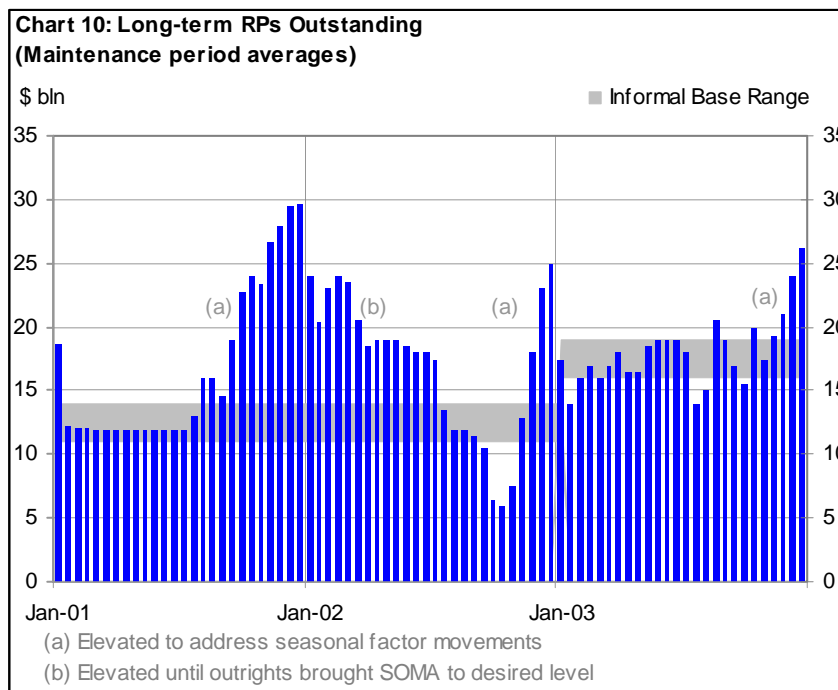


For the year as whole, net short-term temporary operations outstanding (RPs less reverse RPs) averaged \$7.5 billion, up from \$6.2 billion in 2002 (Chart 9). The daily level of net short-term operations outstanding ranged from -\$4 billion to \$24.5 billion. On a period-average basis, short-term operations outstanding ranged from \$4 billion to \$11 billion, being most elevated over the maintenance period covering the August 2003 blackout.



Long Term Temporary Operations

In 2003, a marginal upward adjustment to the level of long-term RPs was also made. When not elevated for seasonal reasons, the Desk usually aimed to have somewhere between \$16 and \$19 billion of these operations outstanding, compared with typical levels between \$11 and \$14 billion in 2001 and 2002 (Chart 10). This higher base level was intended to increase the Desk's ability to reduce quickly and conveniently the size of the total portfolio, should a transitory need for such a reduction arise unexpectedly. In fact, a confluence of movements and revisions to autonomous factors mid-year contributed to sizable net additions to supply from autonomous factors. As in the prior year, the Desk responded by reducing the level of long-term RPs. In 2003, the total level of these longer term RPs outstanding reached a low of \$13 billion in late July, compared with a low of \$6 billion late last year.



In the third quarter of 2003, the Desk implemented a technical change in the maturity composition of longer term RPs by shifting the original maturity of its weekly, longer term operations to 14 days from 28 days. The change, which took effect September 18, 2003, allows the Desk to align more accurately the provision of Fed balances with expected movements in autonomous factors and the demand for balances.

The Desk supplemented its regular 14-day RPs with special longer term RPs to help accommodate the seasonal swings in F.R. notes around year-end.⁷ With maturities of 52 and 24 days, these RPs helped mitigate any increased roll-over risk associated with larger sized 14-day operations when the outstanding

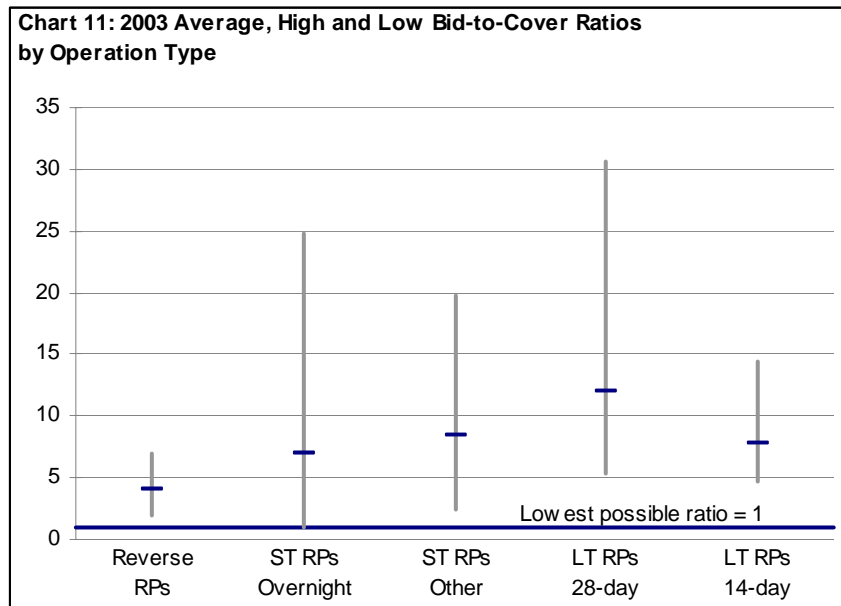
⁷ The 52-day RP arranged this year was the longest of such operations since February 2000.

level of long-term RPs was at its seasonal peak. Over that interval, the level of long-term RPs reached \$28 billion, compared with \$26 and \$31 billion in 2002 and 2001, respectively.

Operational Performance

Propositions generally were sufficient to cover the intended size of one-business-day RP transactions, on average by a ratio of seven to one (Chart 11). Nonetheless, in advance of dates, such as quarter-ends, when dealer participation in overnight RPs was anticipated to be low and needs for balances were projected to be high, the Desk routinely used a sequence of overlapping short-term operations, which are somewhat better subscribed, to supply sufficient Fed balances. Still, there was one occasion in 2003 when propositions on an overnight RP fell slightly short of the Desk’s intended operation size. In this instance, in addition to accepting all propositions on that operation, the Treasury was able to accommodate a small deviation in the Treasury’s Fed balance from its normal target and the provision of Fed balances was not ultimately hindered.

Long-term RPs continued to be very heavily subscribed (Chart 11). With the switch to weekly 14-day RPs from 28-day operations, the average coverage ratio dropped from 12 to 8, reflecting the larger size of individual transactions with similar levels of propositions.



Reverse RP versus the Matched Sale-Purchase Agreement

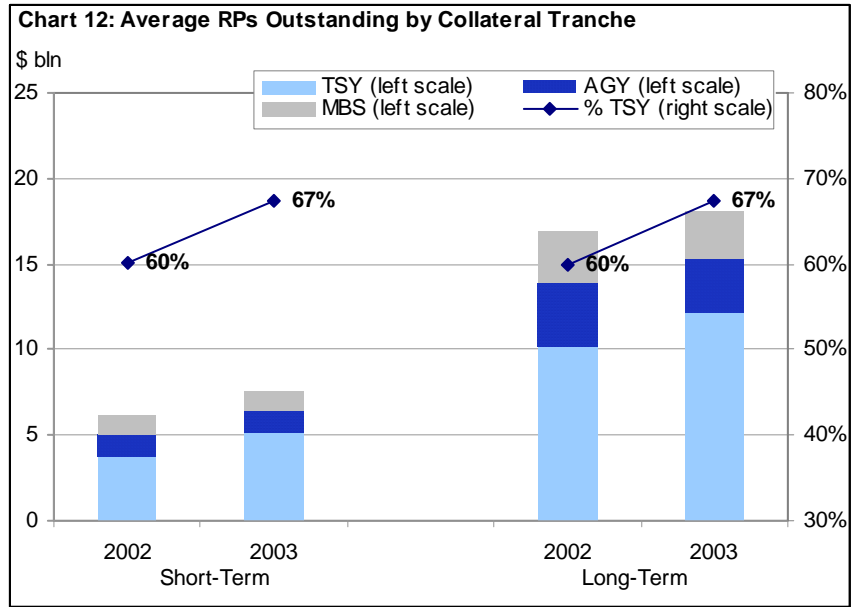
The Desk arranged 11 reverse RPs in 2003, the first such transaction in the market since reverse RPs were adopted in December 2002 to replace matched sale-purchase (MSP) transactions. As discussed in last year's annual report, this change reflected the Desk's continued efforts to conduct open market operations in accordance with standard market practice. The switch to reverse RPs corresponded with increased proposition levels and lowered relative borrowing costs on temporary reserve draining operations (Table 3). While the average operation size was roughly unchanged compared with the average over the prior two years, average total propositions increased nearly 50 percent, to almost \$9 billion. Additionally, average borrowing costs on such operations, benchmarked to the morning general collateral repo rate, declined by almost 2 basis points. As with the MSP, Treasury bills were used as collateral on reverse RP transactions.

Table 3: MSPs vs Reverse RPs Statistics

	MSPs (2001-2002)	Reverse RPs (2003)
# of Operations	17	11
Average Propositions Accepted (\$bln)	\$2.1	\$2.3
Average Propositions Submitted (\$bln)	\$5.9	\$8.6
Average Weighted-Average Rate less GC repo rate (bp)	2.4	0.6

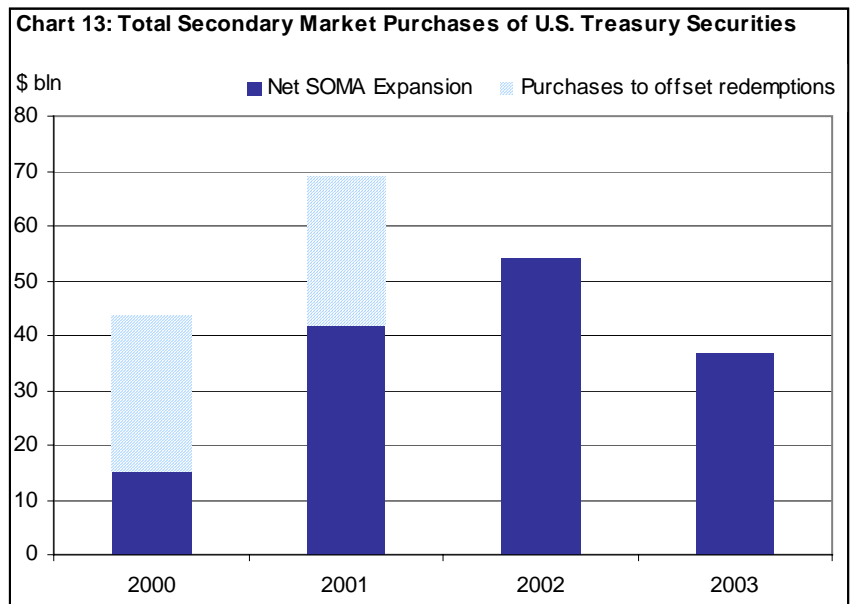
Collateral Distribution of Repurchase Agreements

The Desk solicited propositions across the entire pool of eligible collateral on all RPs arranged in 2003. All RPs were arranged as three separate, yet simultaneous operations differentiated by type of collateral eligible. In the first of these, only Treasury debt was accepted; in the second, direct federal agency obligations (in addition to Treasury debt) were eligible; and, in the third, mortgage-backed securities (in addition to Treasury debt and direct federal agency obligations) were eligible. The Desk selected propositions across these three tranches according to the attractiveness of bids relative to current rates in the financing markets for each particular class of collateral. During 2003, the share of Treasury securities as a percentage of total outstanding RPs, both short- and long-term, increased from 60 to 67 percent (Chart 12).



C. Permanent Holdings in the System Open Market Account and Outright Activity

In 2003, the par value of the SOMA grew \$37 billion to \$667 billion, compared with a \$54 billion increase in 2002 (Chart 13).⁸ Historically, the growth in the domestic SOMA has closely tracked the expansion of F.R. notes, the Federal Reserve’s largest liability. Accordingly, this year’s smaller increase in F.R. notes reduced the need to expand the portfolio.



⁸ These figures include changes in the TIS inflation compensation on such securities held in the SOMA.

In order to maintain a liquid portfolio without distorting the market values or liquidity of Treasury securities, SOMA holdings are distributed across the entire range of outstanding maturities. Accordingly, the Desk continued to adhere to the per-issue limit guidelines on SOMA holdings of individual Treasury securities, articulated in July 2000. In 2003, for the re-introduction of the 3-year Treasury note, a per-issue limit of 23.3 percent of the outstanding marketable debt was set for this maturity.⁹ The Desk also continued to refrain from secondary market purchases of newly issued Treasury securities, because the SOMA has less need for the high liquidity that adds to the market value of these securities.

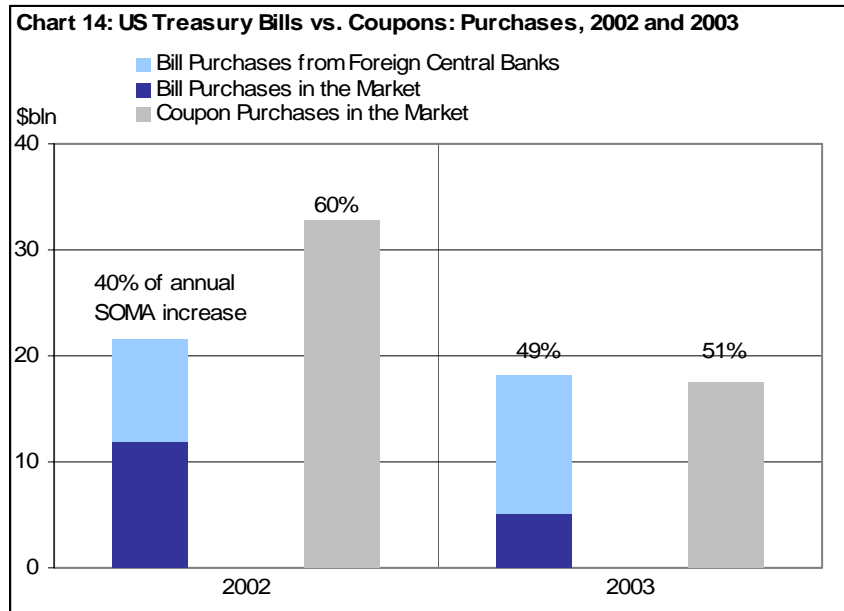
Secondary Market Purchases

The expansion of SOMA is achieved by secondary market purchases of Treasury securities, either through outright purchases from the primary dealers or through purchases from foreign central banks and international institutions that hold accounts with the Federal Reserve. Outright operations with the primary dealers are designed to minimize disruption to the market, and are thus conducted mid-morning and scheduled to avoid concurrence with economic data releases or Treasury auctions while still ensuring sufficient market liquidity. These purchases generally settle on the following business day and, therefore, do not have a same-day impact on Fed balances. Purchases from foreign central banks and international institutions, on the other hand, are made in small daily increments when sell orders of Treasury bills from these accounts are consistent with SOMA portfolio guidelines and the need for Fed balances. These transactions typically settle on the same day.

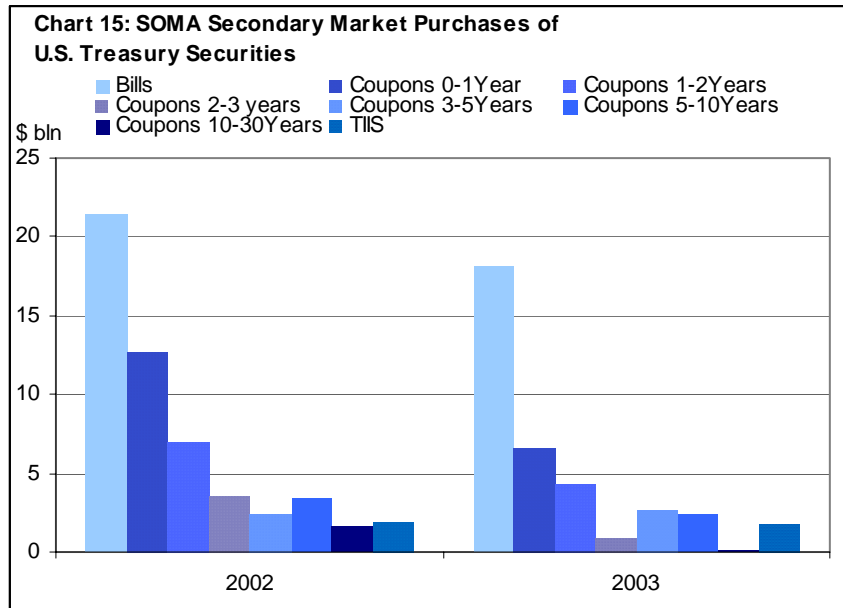
With currency growing at a slower pace in 2003, the need to expand the SOMA was modest relative to that in recent years. Additionally, for the second consecutive year, there were no redemptions at Treasury auctions, which would have required purchases to rebuild the SOMA to its prior level, as had been the case in 2000 and 2001.

In 2003, a total of \$37 billion in Treasury securities was purchased outright for SOMA, including \$19 billion of purchases in Treasury coupon securities and \$18 billion in Treasury bills. Treasury coupon securities were acquired in 21 outright operations arranged with the primary dealers, while Treasury bills were acquired through only 2 outright operations amounting to about \$5 billion, with the remaining \$13 billion purchased directly from foreign central bank accounts. In 2002, purchases totaled \$54 billion (in 37 outright operations), including \$10 billion from foreign central banks. The total share of purchases for the SOMA in the Treasury bill sector increased was almost 50% (Chart 14).

⁹ This maximum purchase limit is based on the per-issue holdings limit announced in July 2000 and is consistent with the per-issue holdings limit for coupon and inflation-indexed securities with remaining maturities equal to three years. <http://www.newyorkfed.org/newsevents/news/markets/2003/an030501.html>



Treasury coupon operations continued to be segmented into separate tranches across different portions of the yield curve to facilitate efficient execution (Chart 15). The selection of specific issues in each operation was based on the relative attractiveness of propositions and portfolio considerations. In addition to remaining within the per-issue limits and avoiding on-the-run issues, the Desk avoided purchases that would be expected to cause a sizable redemption on any day within the foreseeable future, and it bought no issues in the secondary market that had less than five weeks remaining until maturity. The Desk also refrained from purchasing issues that were trading with significant scarcity value in the repo market in order to avoid impairing the liquidity of individual securities that were in greater demand.



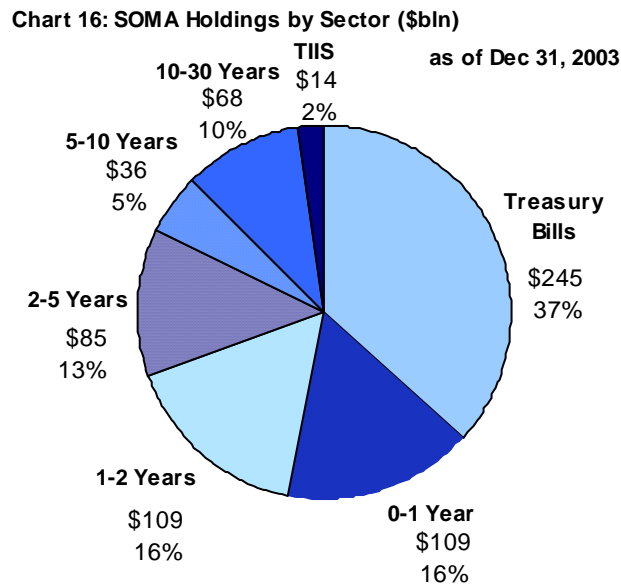
Primary Market Activity

The SOMA is not expanded in the primary market; however, maturing Treasury securities are replaced through add-on bids in Treasury bill and note auctions. Maturing securities continued to be replaced with add-on bids for the SOMA equal to the lesser of (a) its maturing holdings on the issue date of a new security, or (b) the amount that would bring the SOMA holdings as a percentage of the issue to the percentage limit guidelines. During 2003, the Treasury increased the frequency of 5- and 10-year note auctions; however, since the settlement dates did not coincide with dates of maturing holdings of the SOMA, the Desk could not participate in these additional auctions.

There were two changes implemented to the Desk’s guidelines for replacing maturing holdings in early 2003. Given that the distribution of add-on bids in weekly bill auctions must be determined before the 4-week auction size is announced, an assumption regarding the minimum auction size must be made. During 2003, the assumption regarding minimum size was raised to reflect an increase in the historical average. The second change resulted from the re-introduction of 3-year note auctions at the Treasury’s regularly scheduled mid-quarter refunding. The guidelines for the distribution of add-on bids in coupon auctions was modified to better disperse holdings across issues while continuing to hold a greater share of shorter-maturity securities, in accordance with portfolio principles. The previous guideline, which required allocation of funds in such a way as to leave the same gap, measured in percentage points, between the per-issue limit and the actual percentage holding of each new issue was eliminated for coupon tenders. However, this methodology was maintained for rollovers of bills at auction.

General Characteristics of Domestic Permanent SOMA Holdings at Year End

The concentration of purchases in the bill sector, in addition to the combined effect of a slight shift in reinvested holdings and reduced outright activity, led the average maturity of the entire SOMA portfolio to decline to 42.6 months at year-end from 46.4 months at the end of 2002. However, despite the significant nominal increase in Treasury bill holdings, the composition of the SOMA portfolio between Treasury bills and coupons changed by less than 1 percentage point (Chart 16). The share of all outstanding marketable Treasury securities held in the SOMA declined 1.1 percentage points, to 18.7 percent. The SOMA held 26.4 percent of all bills and 16.0 percent of all coupons, including Treasury inflation-indexed securities (compared with 26.1 percent and 17.4 percent, respectively, at the end of 2002). At the end of the year, approximately \$255 billion of marketable Treasury securities remained purchasable under the Desk’s guidelines for percentage holdings, compared with \$188.4 billion at the end of 2002. During 2003, the only non-Treasury holding in the SOMA matured, \$10 million par value of a 10-year Fannie Mae security on December 10.

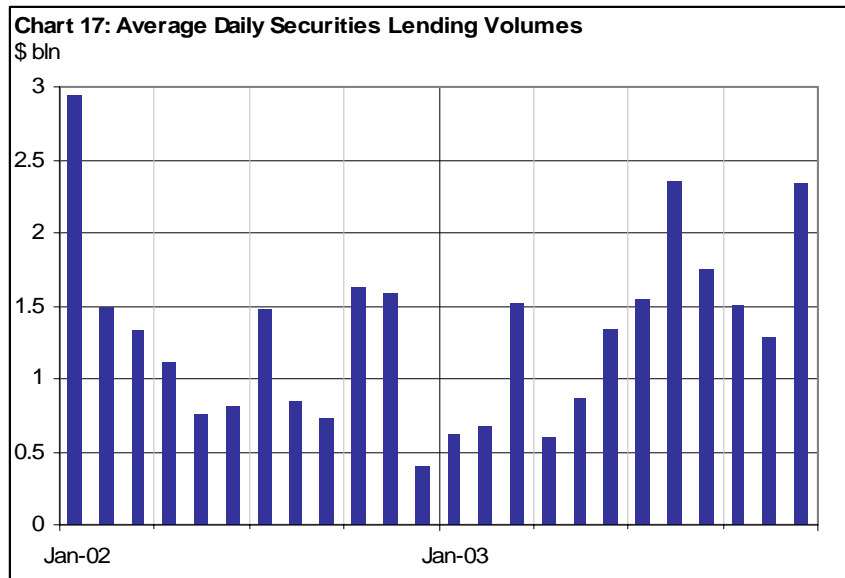


SOMA Securities Lending Activity

The FRBNY provides a secondary and temporary source of securities to the Treasury financing market through a Securities Lending program to promote smooth clearing of Treasury securities. The program offers securities for loan on an overnight basis from the SOMA in accordance with program terms and conditions. Securities loans are awarded to primary dealers based on competitive bidding in an auction held each business day at noon eastern standard time. To prevent securities lending operations from affecting the level of Fed balances, securities loans are collateralized with Treasury securities rather than cash.

Effective June 26, 2003, coincident with the 25 basis point reduction in the federal funds target rate to 1 percent, the FRBNY lowered the minimum fee on the SOMA securities lending program to 0.75 percent from 1.00 percent.

Average daily securities lending volume in 2003 increased \$123 million to \$1.4 billion. This increase in lending was mainly attributable to the escalated volumes experienced during the third quarter, when great



scarcity of supply across issues in the financing market resulted in widespread securities settlement failures in the Treasury market (Chart 17). Demand to borrow from the SOMA program during the third quarter of 2003 averaged \$1.9 billion per day, compared to \$1 billion per day on average during the third quarter of 2002.

V. THE FEDERAL FUNDS MARKET AND DISCOUNT WINDOW CREDIT

A. Trading in the Federal Funds Market

Trading in the Federal Funds Market

Continuing the trend from last year, volatility of trading in the federal funds market declined further in 2003. With one additional FOMC rate cut mid-year bringing the federal funds rate to 1 percent, its lowest level in over 45 years, the absolute low level of rates and a relatively stable target continued to be contributing factors to lower trading volatility. As measured by both the standard deviation and the daily trading range, average intraday volatility decreased, falling from 2002's already low levels (Table 4).

Median absolute deviations of both the morning rate (as of 9:00 am) and the effective rate from the target declined as well to just two basis points this year. Rates exhibited less dispersion and increased symmetry in daily high and low rate deviations, reflecting the 100 basis point corridor above and below the target in effect for much of this year (Chart 18).

Table 4: Federal Funds Rate Behavior

Medians and Averages of Daily Values

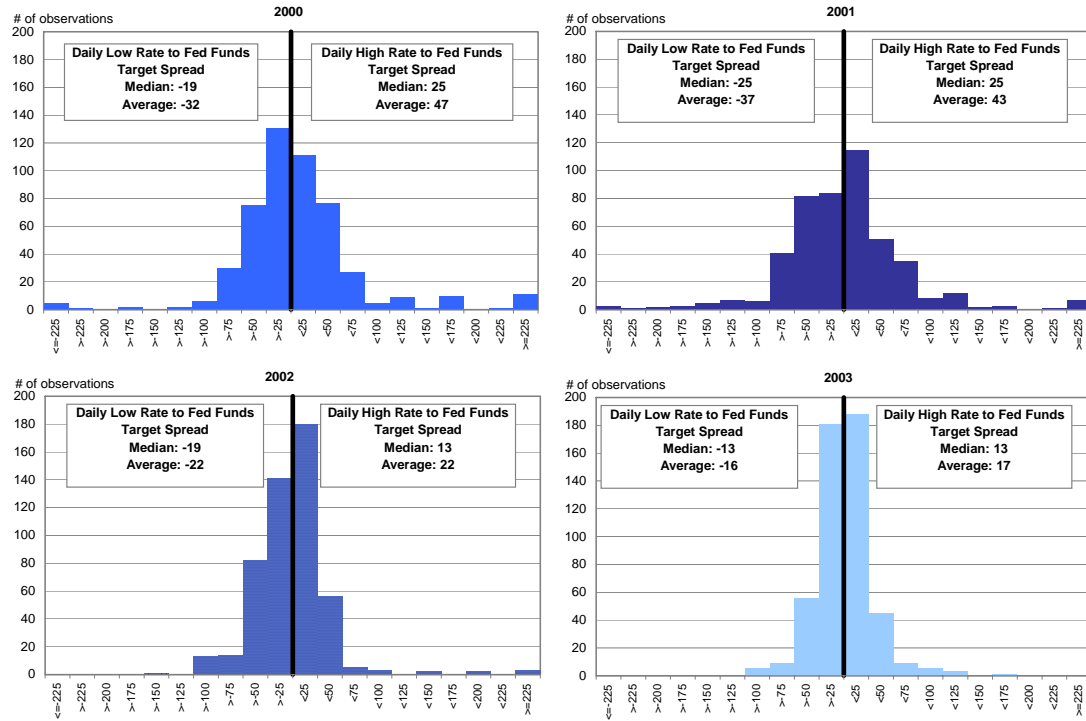
(in basis points)

	2000	2001	2002	2003
Measures of Intraday Volatility				
<i>Standard Deviation</i>				
Median	6	7	5	4
Average	9	9	6	5
<i>Range</i>				
Median	41	56	31	25
Average	78	80	44	33
Deviations from Target				
<i>Absolute Deviations of Effective Rate from Target</i>				
Median	4	5	3	2
Average	7	7	4	4
<i>Absolute Deviations of Morning Rate from Target</i>				
Median	6	6	3	2
Average	6	7	4	3

Note: 2001 statistics exclude data from September 11 to October 3.

Chart 18: Daily Low and High Rate Distributions

These charts plot the highest and lowest rates observed each day relative to the federal funds target rate *horizontal axis is in basis points*



Higher total balance requirements likely contributed to further decreases in overall volatility, as was the case in 2002. These higher overall period requirements provided greater elasticity as it afforded banks increased flexibility to absorb larger daily movements in supply without creating pressure on banks’ overall positions at the Fed or increasing the risk of end-of-day overdrafts.

Looking more closely at the lower right panel of the above chart, the daily fed funds high rate deviation exceeded 100 basis points on only one occasion in 2003, compared with seven and fifteen occasions in 2002 and 2001 respectively. The impact of the new primary credit facility on broad measures of rate volatility is difficult to measure. But the new facility did appear to be effective in limiting increases or capping the funds rate on days when strong upward rate pressures did emerge. The one exception to this occurred on the evening of the August 14 blackout.

In line with recent trends, median morning and effective rate deviations from the federal funds target rate on high payment flow days declined from or stayed at the low levels reached in 2002 (Table 5). However, the average deviation of the effective from the target rate rose to nine basis points, considerably higher than the six basis point average observed in 2002, due to a handful of outliers – including August 15, the day after the blackout – when rates were exceptionally firm.

Table 5: Fed Funds Rate Behavior on High Payment Flow Days**Medians and Averages of Daily Values**

(in basis points)	2000	2001	2002	2003
<i>Morning Rate less Target</i>				
Median	19	16	9	9
Average	19	16	10	10
<i>Effective Rate less Target</i>				
Median	15	16	7	6
Average	12	13	6	9

Note: High payment flow days include the first and last business days of the month, the settlement day of the U.S. Treasury's mid-quarter refundings, and major tax dates; 2001 statistics exclude data from September 11 to October 3.

B. Discount Window Credit

As mentioned in Section I.C, this year marked the start of the new discount window primary and secondary credit facilities as sources of temporary liquidity for depository institutions. The seasonal lending program remained unchanged. The rates on the primary and secondary credit facilities were maintained at 100 and 150 basis points over the federal funds target rate, respectively.

The switch to the primary credit borrowing facility seems to have had no impact on the general trend of decreased borrowing seen in recent years (Table 6). In 2003, primary credit borrowing averaged \$35 million, compared with \$54 and \$78 million in adjustment credit borrowing in the prior two years. Furthermore, there were only two occasions of primary credit borrowing in excess of \$500 million in 2003, compared with six and eleven occasions of adjustment credit borrowing in excess of \$500 million in 2002 and 2001, respectively. Declines in primary credit borrowing are likely attributable to increased balance requirements over recent years, as well as the Desk's continued practice of providing sufficient reserve supply through open market operations to meet banks' demands.

Table 6: Borrowing Trends

	2000	2001	*2001	2002	2003
<i>Daily averages in \$ billions</i>					
Seasonal borrowing	\$257	73	73	92	63
Adjustment/Primary borrowing	\$108	323	78	54	35
<i>Number of instances in which Adjustment/Primary borrowing exceeded...</i>					
\$100 million	27	21	18	13	6
\$500 million	14	11	8	6	2

* Excluding the period from 9/11/01 to 9/13/01

APPENDIX A: AUTHORIZATION FOR DOMESTIC OPEN MARKET OPERATIONS

At the June meeting the FOMC voted unanimously to amend paragraph 2 of the Authorization, giving the FRBNY discretion to set the minimum lending fee for the SOMA securities lending program. Previously, a 1.0 percent per annum rate was specified as the minimum.

Open market operations were conducted under the Authorization for Domestic Open Market Operations. The Authorization in effect at the end of 2003 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 \$12.0 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) 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, from dealers for the account of the Federal Reserve Bank of New York under agreements for repurchase of such securities or obligations in 65 business 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.
 - (c) To sell U.S. Government securities that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States to dealers for System Open Market Account under agreements for the resale by dealers of such securities or obligations in 65 business 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 individuals dealers.

2. In order to ensure the effective conduct of open market operations, the Federal Open Market Committee authorizes the Federal Reserve Bank of New York to lend on an overnight basis U.S. Government securities held in the System Open Market Account to dealers at rates that shall be determined by competitive bidding. The Federal Reserve Bank of New York shall set a minimum lending fee consistent with the objectives of the program and apply reasonable limitations on the total amount of a specific issue that may be auctioned, and on the amount of securities that each dealer may borrow. The Federal Reserve Bank of New York may reject bids which could facilitate a dealer's ability to control a single issue as determined solely by the Federal Reserve Bank of New York.
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 in 65 business days or less 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(b), 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.
4. In the execution of the Committee's decision regarding policy during any intermeeting period, the Committee authorizes and directs the Federal Reserve Bank of New York, upon the instruction of the Chairman of the Committee, to adjust somewhat in exceptional circumstances the degree of pressure on reserve positions and hence the intended federal funds rate. Any such adjustment shall be made in the context of the Committee's discussion and decision at its most recent meeting and the Committee's long-run objectives for price stability and sustainable economic growth, and shall be based on economic, financial, and monetary developments during the intermeeting period. Consistent with Committee practice, the Chairman, if feasible, will consult with the Committee before making any adjustment.

APPENDIX B: GUIDELINES FOR THE CONDUCT OF SYSTEM OPEN MARKET OPERATIONS IN FEDERAL AGENCY ISSUES

The FOMC has established specific guidelines for operations in agency securities to ensure that Federal Reserve operations do not have undue market effects and do not serve to support individual issuers. At the January 2003 meeting, the FOMC voted to amend these guidelines excluding provisions 3-6 to permanently grant greater flexibility in conducting operations in agency securities. In August 1999, these provisions were temporarily suspended, as part of a broader effort to expand the types of agency securities that the Desk could accept on operations around the century date change. The suspension was renewed annually from 2000 to 2002.

Guidelines for the Conduct of System Operations in Federal Agency Issues

1. System open market operations in Federal agency issues are an integral part of total System open market operations designed to influence bank reserves, money market conditions, and monetary aggregates.
2. System open market operations in Federal agency issues are not designed to support individual sectors of the market or to channel funds into issues of particular agencies.