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RECENT TRENDS IN MONETARY POLICY IMPLEMENTATION: A VIEW FROM THE DESK

The environment in which monetary policy is implemented has changed significantly over the years, reflecting an evolution both in the Federal Reserve's operating procedures and in the behavior of the financial institutions with which it transacts. To provide a backdrop for understanding these changes, I will begin by reviewing the principles guiding the Trading Desk's day-to-day management of the federal funds rate. I will also highlight recent trends in banks' holdings of reserves and clearing balances, as well as discuss the recent behavior of the funds rate and its volatility. Finally, I will offer some brief observations on factors that could influence the Desk's operating procedures in the future.

MANAGING THE FED FUNDS RATE

The basic objective of the Trading Desk is straightforward: to manage the federal funds rate in such a way that it trades at the Federal Open Market Committee's (FOMC) target rate. Naturally, this means that the Desk wants the funds rate to trade as closely to the target as possible, as much of the time as possible. But in pursuing this objective, the Desk must take care to ensure that an action on one day does not jeopardize the attainment of the target on subsequent days, and this often limits how aggressively open market operations can be used to pursue this rate objective on any single day.

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The reason the Desk must consider carefully the size of its open market operations lies with banks' increasingly active management of their reserve accounts—that is, the steps they take to minimize their reserve levels while avoiding a negative end-of-day balance. As a result, banks will try to avoid holding quantities of reserves that will lock them into holding excess reserves for the entire maintenance period. Thus, when the funds rate is above its target, for example, the Desk would normally want to add reserves to bring it in line with the target. But the overly aggressive addition of reserves in such circumstances could drive down the funds rate in subsequent days, as banks may be forced to manage to near-zero levels of balances on those days in order to minimize holdings of excess reserves for the period. In this case, the Desk may want to limit the degree of overshooting in order to avoid subsequent potential for increases in funds rate volatility.

Another important aspect of the Desk's management of the funds rate is its focus on the rate's *daily* performance, rather than on the average over the maintenance period. Suppose, for example, that the rate was above its target on the first five days of the maintenance period. The Desk would not be comfortable with, nor would it deliberately engineer, a below-target rate on subsequent days so that the period's average rate would be closer to target. Instead, the Desk aims to have the rate trade as closely as possible to the target every day, and past deviations of the effective rate from the target rate are not deliberately reversed.

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Managing intraday rate volatility is another important issue. If the funds rate trades above its target in the morning, would the Desk add an amount of reserves that would cause the rate to fall to near zero at the end of the day, even if such an action was necessary for the average rate on the day to be closer to the target? Or if the rate is below target in the morning, would the Desk be willing to leave institutions so short that the rate would likely spike at the end of the day, as institutions that closely manage reserves seek to avoid negative account balances? There is no quantitative rule for how reserves are managed to address these situations. Qualitatively, though, the same principle applies: the Desk supplies reserves in such a way that the rate is most likely to return to, and to continue to, trade near the target as soon as possible, therefore also taking into account the likely effect of Desk actions on subsequent days' trading.

Another issue is the use of open market operations to implement changes in the FOMC's target for the funds rate. The conventional, textbook view is that the Trading Desk buys and sells securities in response to policy easings and tightenings. From the Desk's perspective, however, the supply-demand balance is primarily a function of the demand for required balances, which is almost completely insensitive to small changes in policy. Consequently, any change in the Committee's target has virtually no effect on excess supply or demand in the funds market. If the rate does not move quickly to the new target, the Desk might supply more or fewer reserves on a particular day in order to make it move. However, the Desk's average supply-demand imbalance over a maintenance period would be the same as it was before. So if the Desk reacts on a particular day by supplying more or fewer reserves than it otherwise would have (if the rate had been trading at the target), the chances are that actions on subsequent days will be just that much smaller or larger.

FACTORS AFFECTING VOLATILITY IN THE FUNDS RATE

Despite the Desk's best efforts to keep the funds rate close to its target and minimize trading volatility, certain factors can at times bias the measured effective funds rate. For example, when one thinks of the fed funds rate, one thinks of rates bid and offered by top-tier institutions. But when the Desk calculates the effective rate, it uses all the rates reported by the brokers it samples, which may include trades by institutions that are not in the top-tier category. Although tiering is not currently a major issue, it could at times lead to an upward bias

in the rate relative to the target. It is also worth noting that the daily (volume-weighted) average effective funds rate computed by the Fed includes brokered trades by a large portion of federal funds brokers; market participants estimate that these trades represent only half of all federal funds trades.

Heightened institutional uncertainty over end-of-day positions can also bias the funds rate upward. In fact, banks' demand for balances increasingly is a function of the need to settle wholesale transactions and to manage uncertainty about the day's final balances. On days when especially high volumes of trades are settling (such as settlement dates for new Treasury issues, Social Security payment dates, corporate and individual tax payment dates, and the first and last days of the month), banks tend to be very cautious; during such periods, they generally are more uncertain about their end-of-day positions and do not want to end the day with negative balances. This uncertainty tends to add a premium to the funds rate throughout the day—at least until very late in the day, when the uncertainty subsides.

Downward bias in the funds rate can be associated with certain days as well, particularly business days followed by nonbusiness days. Reserves held in a bank's Fed account on a business day continue to be held on the following nonbusiness day and count toward meeting reserve requirements. Funds held on a Friday, for example, count three times (or even *four* times, if the following Monday is a holiday). Because banks that trade in the brokered market typically manage their Fed accounts closely to minimize non-interest-bearing excess reserves, they tend to be very careful about the amount of reserves held on a Friday. This behavior often manifests itself in downward pressure on the funds rate on Fridays, compared with the rate at which funds would be expected to trade if all factors were the same but it was *not* a Friday.

In addition, certain pricing patterns in the federal funds market limit the Desk's ability to fine-tune the funds rate. One of these is the way in which market participants' expectations of pricing patterns can sometimes become self-fulfilling. Specifically, spreads to the target on particular days are often incorporated into expectations for similar days in the future. For example, if funds were very firm on a quarter-end date, there would be a tendency for the same pattern to appear in funds trading on subsequent quarter-end dates. The Desk tries to work against this psychology by taking into account the impact of its actions not only on one day, but also on subsequent ones through this expectations channel. However, if the Desk reacts too strongly to intraday pressure, it may create volatility toward the end of the day and possibly on subsequent days as well. These considerations may at times limit the Desk's attempts to influence market psychology.

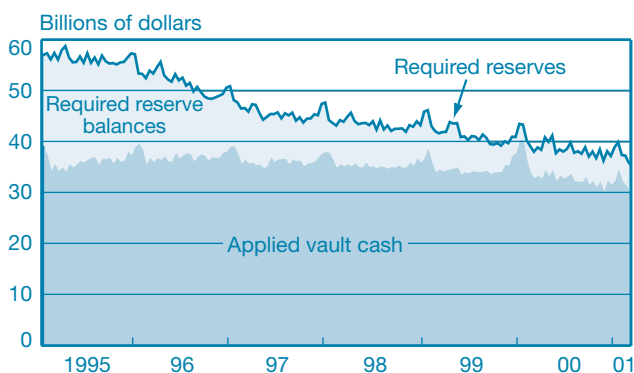
TRENDS IN RESERVES AND CLEARING BALANCES

One of the most significant developments affecting the reserves market in recent years has been the secular downward trend in the level of reserves (Chart 1). As one can see from the chart, the difference between the level of required reserves and the vault cash applied to satisfy reserve requirements represents the required reserve balances held at the Fed.

The main factor behind the post-1995 decline in required reserves has been the adoption of sweep programs, in which banks shift depositors' funds between reservable and nonreservable accounts in order to reduce reserve requirements. The decline in reserve requirements has not been matched by a fall in applied vault cash used to meet the requirements. This reduction in requirements that must be met with Fed balances comes at a cost: banks with lower requirements have less flexibility (and face greater end-of-day uncertainty) when managing flows into and out of their accounts.

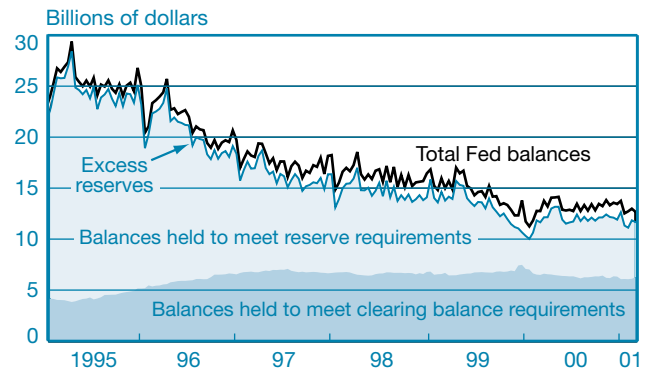
Another important trend has been the increased popularity of clearing balance requirements. Balances held to meet these requirements earn credits that can be used to pay for Federal Reserve services. Chart 2 decomposes total balances into the portions held to meet reserve requirements and clearing balance requirements and the portion held as excess reserves. The chart reveals that clearing balance requirements have been creeping up since the mid-1990s. A reason for this is that banks

CHART 1
Total Reserve Requirements: Applied Vault Cash Plus Required Reserve Balances
Maintenance Period Averages



Source: Board of Governors of the Federal Reserve System.

CHART 2
Total Fed Balances: Required Clearing Balances, Required Reserve Balances, and Excess Reserves
Maintenance Period Averages



Source: Board of Governors of the Federal Reserve System.

are realizing that, with lower reserve requirements, having a higher level of clearing balance requirements helps them to maintain flexibility in managing their Fed accounts. However, the desired level of clearing balance requirements is limited by the usefulness to an institution of the Fed credits earned. (Many institutions do not incur enough service charges for these additional credits to be useful, or find their desired clearing balance requirement limited by the amount of Fed services they use.) Excess reserves have remained very low over the same period because banks have been able to manage just as effectively with lower total (reserve plus clearing balance) requirements.

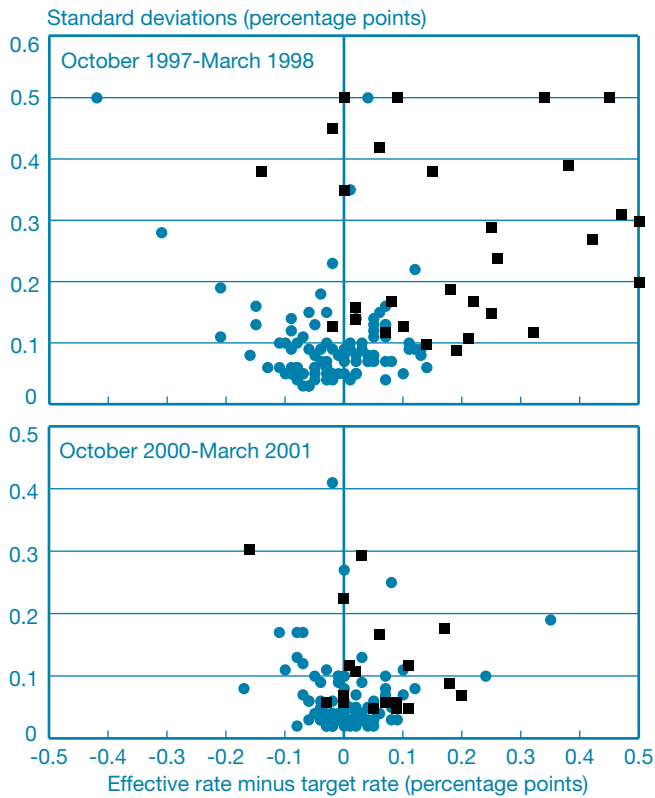
THE PERFORMANCE OF THE FUNDS RATE

Many of the changes in the reserves market, such as the decline in reserve balances and the decreasing sensitivity of reserve demand to interest rates, might have been expected to increase funds rate volatility. In practice, precisely the opposite has occurred: deviations between the funds rate and its target have generally been *smaller* since 1999.

These trends in funds rate volatility can be depicted as a scatterplot with deviations of the effective rate from the target on the x-axis and the daily standard deviations of the funds rate, representing intraday volatility, on the y-axis (Chart 3).

CHART 3

Deviations of the Daily Effective Federal Funds Rate from Target, and the Daily Standard Deviations of the Funds Rate



Source: Federal Reserve Bank of New York.

Note: High payment flow days and maintenance period settlement days are represented by squares; all other days are represented by circles.

The top panel of the chart presents the October 1997 to March 1998 period, distinguishing between “regular” days (circles) and “special” days (squares), such as the last day of a settlement

period or days with high payment flows. As noted, these “special” days are associated with larger deviations from the target (especially *positive* deviations) and greater intraday volatility.

The bottom panel of the chart depicts the October 2000 to March 2001 period. The cloud of points there is clearly lower and less dispersed than in the top panel, indicating that funds rate volatility is generally lower in the later period for both “regular” and “special” days. Deviations between the effective rate and the target are smaller, and intraday volatility tends to be lower. The decline in volatility probably has several causes, including improved reserve management by banks (aided by consolidation in the banking industry and increased automation), more fine-tuning of reserves supplied by the Desk, and perhaps even a bit of good luck. All of these factors have helped to contain the deviation of the effective federal funds rate from the target and kept volatility low, even as required balances have come down.

GOING FORWARD

With these considerations in mind, it is safe to say that a number of factors could influence the Trading Desk’s operating procedures and practices in the future. A decline in the supply of Treasuries, for example, could affect the Desk’s ability to conduct its operations by reducing the liquidity of the markets in which it operates. So too would financial innovation that would greatly reduce the need for clearing balances by banks.

Needless to say, the Federal Reserve will continue to explore various ways to address these and other developments that could affect the Desk’s ability to achieve its objectives for the funds rate, as well as issues that could affect the operation of the markets and the behavior of banks.

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