Non-Open-Market Monetary Policy Operations

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The Federal Reserve System implements monetary policy by using a variety of techniques to manage the supply of reserves available to the banking system. The Federal Open Market Committee (FOMC), which is the policymaking arm of the Federal Reserve, sets the overall stance of monetary policy. The "Desk," at the Federal Reserve Bank of New York, carries out that policy by taking actions to increase or reduce the supply of reserves available to the banking system. By managing the supply of bank reserves (or controlling "the degree of pressure on reserve positions," in the official terminology), the Federal Reserve can affect interest rates and the supplies of money and bank credit. Interest rates and the supplies of money and bank credit, in turn, affect economic activity and employment, and prices, although with a lag. The Fed's aim is to move the economy toward the long-run goals of full employment and price stability.

The Federal Reserve engages in both *dynamic* and *defensive* reserve management operations. *Dynamic* actions implement a change in monetary policy. *Defensive* actions, in contrast, keep monetary policy unchanged by offsetting a change in the supply of bank reserves that is caused by factors beyond the Fed's direct control. Dynamic operations occur infrequently, only when the FOMC changes the stance of monetary policy. Defensive actions occur quite frequently, usually several times each week.

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Open market operations, in which the Desk buys or sells several billion dollars of government securities through securities dealers in the New York financial markets, are a widely known and understood tool for carrying out both defensive and dynamic actions. On some days, however, substantially larger defensive actions are necessary. Such large scale open market operations tend to create larger than usual, although transitory, interest rate fluctuations.[1] On those days the Desk would prefer to reduce the size of open market operations that it needs to carry out. In addition, there are occasions when the manager of the Desk has reason to believe that participants in financial markets would misinterpret a purely *defensive* open market operation as a *dynamic* reserve management action. In this situation, too, an open market operation would cause unnecessarily large interest rate fluctuations. To avoid causing unnecessarily large interest rate movements, the Fed has developed some reserve management techniques that we will call "non-open-market operations."

Non-open-market operations are used less than open market operations, but they occasionally provide the right tool for managing the supply of bank reserves. These nonmarket reserve management actions have the additional virtue that they save the U.S. government some money. Unlike open market operations, non-open-market operations are neither widely recognized nor well understood. Non-open-market operations are not conducted through government securities dealers, so they may not immediately be apparent to participants in financial markets. Non-open-market operations become apparent by the end of the week, when the Federal Reserve publishes a statement that shows changes in its balance sheet, or earlier in some cases.

THE SUPPLY OF BANK RESERVES AND THE FED'S BALANCE SHEET

The key to understanding how monetary policy actions affect the supply of bank reserves is knowing how bank reserves are created and destroyed. Total reserves of the banking system are equal to the sum of reserve deposits (balances) at Federal Reserve Banks plus vault cash held by banks. Although the Fed does not control the amount of vault cash held by banks, the Fed can effectively control total reserves of the banking system by managing the quantity of reserve deposits. This may best be seen by working through the Fed's balance sheet, where we can see the effects of both open market and non-open-market operations.

Factors That Affect the Supply of Bank Reserve Deposits. The balance sheet of the Federal Reserve System is published in several forms. For our purposes, the most useful version is an aggregated presentation that appears in Federal Reserve Release H.4.1, "Factors Affecting Reserve Balances of Depository Institutions and Condition Statement of F.R. Banks."[2] See A SUMMARY OF THE FED'S BALANCE SHEET. The first rule of balance sheets is that total assets

[1]Unusually large open market purchases or sales of securities (those of more than a few billion dollars in size) are difficult to execute because bond dealers normally do not maintain such large inventories of Treasury securities. When the Fed needs to buy an unusually large quantity of Treasury securities through an open market operation, bond dealers are forced to buy correspondingly large amounts of government securities from private investors in a very short time, in order to obtain securities to deliver to the Fed. On the other hand, if the Fed needs to sell an unusually large amount of government securities through an open market operation, then bond dealers would try to sell those securities to private investors quickly, in order to avoid carrying unusually large inventories of securities. In either case prices of Treasury securities would be likely to move sharply, if temporarily, as a result.

[2]This publication is released every Thursday. The balance sheet shows the levels of each of the items on the Wednesday before the balance sheet is released, and also shows the changes in each of the items from the previous week and from a year earlier. The basic data in the weekly balance sheet are printed every Friday in many newspapers, including *The Wall Street Journal* where it appears under the heading "Federal Reserve Data." The balance sheet is also available on a monthly basis as Table 1.11, "Reserves of Depository Institutions and Reserve Bank Credit," in the *Federal Reserve Bulletin*.

A Summary of the Fed's Balance Sheet

Averages of daily figures for the week ended Dec. 2, 1987 (millions of $)

Assets (factors supplying reserve funds)		Liabilities (factors absorbing reserve funds)	
U.S. government securities	217,842	Currency in circulation	225,013
Federal agency obligations	8,901	Treasury cash holdings	466
Acceptances	—	Treasury deposits at Fed	3,403
Loans to depository institutions	684	Foreign deposits at Fed	365
Float	686	Service related balances and adjustments	2,290
Other Fed assets	15,298	Other deposits at Fed	484
Gold stock	11,083	Other liabilities and capital	7,605
Special Drawing Rights account	5,018		
Treasury currency outstanding	18,128		
Total factors supplying reserve funds	277,640	Total factors absorbing reserve funds, other than reserve balances	239,626
		Reserve balances at Fed	38,014

NOTE: Technically speaking, this table is not precisely a balance sheet because "Treasury currency outstanding" is not an asset of the Fed, and not all of "Currency in circulation" is a liability of the Fed. "Currency in circulation" is equal to "Federal Reserve Notes outstanding" (which *are* the Fed's liability) plus "Treasury currency outstanding" minus "Treasury cash holdings." Thus the sum of "Currency in circulation" and "Treasury cash holdings" (both on the liability side of the table) is equal to "Federal Reserve Notes outstanding" plus "Treasury currency outstanding." So we include "Treasury currency outstanding" on the asset side of the table to avoid unbalancing the balance sheet, because this item implicitly appears on the liability side of the table. With this technical footnote in mind, we can treat this table as a balance sheet.

must equal total liabilities (including capital). Therefore, the *supply of bank reserve deposits* ("Reserve balances at Fed" in the balance sheet) must equal the sum of all Federal Reserve assets minus the sum of all Federal Reserve liabilities *except* reserve balances, as shown. By managing the total quantity of assets it holds, and by adjusting its total assets to offset fluctuations in the sum of liabilities other than reserve balances, the Federal Reserve can manage the supply of bank reserve deposits.

For our purposes, here, it will be convenient to simplify the appearance of the balance sheet in order to focus on the items that are germane to non-open-market operations. The remaining items will be grouped into two broad categories: "All Other assets" and "All Other liabilities." See A SIMPLIFIED BALANCE SHEET FOR THE FED.

A Simplified Balance Sheet for the Fed

Averages of daily figures for the week ended Dec. 2, 1987 (millions of $)

Assets (factors supplying reserve funds)		Liabilities (factors absorbing reserve funds)	
U.S. government and agency securities	226,743	Currency in circulation	225,013
Loans to depository institutions	684	Treasury deposits at Fed	3,403
Float	686	Foreign deposits at Fed	365
All Other assets	49,527	All Other liabilities and capital	10,845
		Reserve balances at Fed	38,014

such changes in the supply of reserves, usually through the frequent defensive open market operations conducted by the Desk. Occasionally, however, the Federal Reserve uses some of these factors to generate changes in the supply of bank reserves without the need for an open market operation.

THE THREE BASIC NON-OPEN-MARKET OPERATIONS

There are three basic ways in which the Fed can manage the supply of bank reserves without undertaking open market operations. First, the Federal Reserve can sometimes change its holdings of U.S. government securities without undertaking purchases or sales of Treasury bills or bonds through government securities dealers. Second, the Fed can manage the effects upon bank reserve deposits of changes in foreign deposits that arise from foreign governments' purchases or sales of U.S. government securities. And third, the Fed can coordinate with the Treasury to take advantage of the Treasury's cash management activities when they increase or reduce the size of the Treasury's balance in its account at the Federal Reserve.

Each of these types of non-open-market operations will change the quantity of reserves available to the banking system. Only one of these operations will be immediately visible to participants in financial markets. Let us explore each of the three basic kinds of non-open-market operations to see what actions the Fed can take, how those actions affect bank reserves, and how the Fed's actions can show up in its balance sheet.

Reducing Reserves by Letting Bills "Run Off." The U.S. Treasury normally sells new securities to replace old bills and bonds as they mature. Newly issued government securities are sold at auction, with auctions of Treasury bills taking place virtually every week during recent years. The Federal Reserve normally buys some of the newly issued bills at each auction to replace maturing Treasury bills that it holds.[5] By doing so the Fed keeps the quantity of government securities in its portfolio constant, and thereby avoids generating changes in the supply of bank reserve deposits.

The Fed can reduce the supply of bank reserves without undertaking an open market operation by letting part of its portfolio of government securities "run off" as they mature, that is, by not replacing maturing Treasury bills in its portfolio with newly issued bills. In the Fed's balance sheet, holdings of government securities (on the asset side) go down. That drop is matched by an equal reduction in bank reserve deposits (on the liability side).

When the Fed lets some of the Treasury bills in its portfolio run off, the Treasury draws funds from its Tax and Loan accounts at commercial banks in order to redeem the maturing bills. The funds first are transferred from commercial banks' reserve accounts at the Fed into the Treasury's account at the Fed (see BANK RESERVES FALL WHEN THE FED LETS SOME TREASURY BILLS "RUN OFF"). In the Fed's balance sheet we see [1] a drop in reserve deposits coupled with an equal rise in Treasury deposits (both on the liability side). Then the funds are paid to the Fed to redeem the maturing bills, which shows up in the Fed's balance sheet as [2] matching reductions in U.S. government securities (on the asset side) and in Treasury deposits (on the liability side). Bank reserve deposits are reduced, on balance.

For the Fed, letting government securities run off provides a simple and convenient way of generating a reduction in the supply of bank reserve deposits, when such a reduction is required to hit the target level of reserves that is consistent with the stance of monetary policy. In contrast to reducing the supply of bank reserves by conducting an open market operation in which the Fed sells Treasury bills through a government securities dealer, letting government securities run off has the advantage that the Fed avoids paying the dealer a fee (in the

[5]The Federal Reserve is prohibited by law from buying government securities directly from the U.S. Treasury, except to replace maturing issues with newly issued securities.

Bank Reserves Fall When the Fed Lets Some Treasury Bills "Run Off"

Assets (factors supplying reserve funds)	Liabilities (factors absorbing reserve funds)
(2) U.S. government and agency securities	Currency in circulation
Loans to depository institutions	Treasury deposits at Fed (1) (2)
Float	Foreign deposits at Fed
All Other assets	All Other liabilities
	Reserve balances at Fed (1)

form of the bid-ask spread) for doing the transaction. So this non-open-market operation saves the government some costs.

Even though securities dealers are not involved when the Fed lets some Treasury bills run off, participants in financial markets are aware of the Fed's action. The action is not secret; when the Treasury announces the results of its auctions of newly issued securities, it includes a statement of how much of the new issue was purchased by the Federal Reserve.

Managing Reserves through Securities Transactions with Foreign Central Banks. The Fed also can manage the supply of bank reserve deposits by choosing how to handle orders from foreign central banks to buy or sell U.S. government securities. Many foreign central banks, and some international organizations, maintain accounts at the Federal Reserve Bank of New York, which acts as their agent in making and receiving payments in the U.S. Balances in those accounts appear in the "Foreign deposits" line on the liability side of the Fed's balance sheet.

When foreign central banks use their accounts at the New York Fed to do business with residents of the U.S., bank reserve deposits can change. If a foreign central bank draws on its account at the Fed to make a payment in the U.S., the Federal Reserve completes the transaction by debiting the account of the foreign central bank and simultaneously crediting the reserve account of the U.S. bank used by the recipient of the payment. In the Fed's balance sheet, foreign deposits (on the liability side of the balance sheet) fall, and bank reserve deposits rise by the same amount. When a foreign central bank deposits a payment from a resident of the U.S. into its account at the New York Fed, reserves of the U.S. banking system fall.

Foreign central banks adjust the size of the balances that they hold in their accounts at the Federal Reserve Bank of New York by buying or selling U.S. government securities. When payments into a foreign central bank's account cause its balance to increase beyond normal or desired levels, the foreign central bank instructs the New York Fed to use the excess funds to buy U.S. government securities; the foreign central bank thereby earns interest and avoids holding more non-interest-bearing deposits than it needs. And when a foreign central bank discovers that it needs to raise the balance in its account at the Fed, in order to pay bills that have come due, it instructs the Fed to sell some of its holdings of U.S. government securities.

Reserves of the U.S. banking system remain

unchanged, overall, when foreign central banks receive payments from U.S. residents and use the funds to buy securities in U.S. financial markets. The same is true when foreign central banks sell some U.S. government securities in the U.S. financial markets and use the proceeds to make payments to U.S. residents. Bank reserve deposits are unchanged overall in these two cases because inflows of funds into the foreign central banks' accounts at the Fed are matched by payments that generate outflows of funds from those accounts, so that foreign deposits at the Fed remain unchanged, on balance.

In reality, foreign deposits change on a daily basis because inflows into foreign central banks' accounts at the Fed and outflows from those accounts do not always match. Barring offsetting changes in other factors that affect the supply of bank reserves, a change in foreign deposits does change the supply of bank reserves. The Desk takes changes in foreign deposits into account when it determines if there is a need for a defensive reserve management operation; the Desk usually offsets any change in the supply of bank reserve deposits that has been caused by a net change in foreign deposits at the Fed.

One way for the Desk to offset the effect of a change in foreign deposits upon bank reserves is to execute a part of foreign central banks' orders to buy or sell U.S. securities through a government securities dealer in the New York financial markets. If the size of the order that is executed in the market matches the net change in foreign deposits, the Fed engages in a transaction that effectively leaves bank reserve deposits unchanged. For example, if foreign deposits rise by $2 billion, overall, and thereby drain $2 billion of reserves from the banking system, the Fed could offset the drain by executing in the market a foreign central bank's order to purchase $2 billion of U.S. Treasury bills. When the foreign central bank pays for the Treasury bills, the effect is to transfer $2 billion from foreign deposits back into bank reserve accounts at the Fed. Such "transactions for the account of a customer" are immediately visible to market participants. In fact, the Fed even announces the size of such transactions to the dealers.

The Fed need not execute some of the foreign central banks' orders to buy or sell securities in the market, however, when foreign deposits change. Instead, the Fed can choose to carry out such orders internally for its own portfolio ("with the system account"). When it does so, the Fed is engaging in a non-open-market operation to manage the supply of bank reserve deposits.

The Fed can also manage the supply of reserves by taking advantage of the opportunity to buy U.S. government securities directly from foreign central banks (or sell directly to foreign central banks) even if there is no net change in foreign deposits, and no imbalance in foreign central banks orders to buy and sell U.S. government securities. If there are some foreign central banks who need to sell Treasury bills in order to raise funds that they need to make payments in the U.S., and other central banks who wish to buy Treasury bills as a temporary investment for excess cash, the Fed could execute internally the foreign orders to sell Treasury bills, but execute in the market the other foreign orders to buy Treasury bills. This combination of actions would increase the supply of bank reserve deposits.

When foreign central banks instruct the Fed to use an increase in the balances in their accounts at the Federal Reserve Bank of New York to purchase securities, and the Fed chooses to sell Treasury bills out of its own portfolio, the net result (if there is no change in the other factors that affect the supply of reserves) is to *reduce* the supply of reserve deposits. (See MANAGING RESERVES: FOREIGN ORDERS FOR SECURITIES.) In the Fed's balance sheet, the initial payments into foreign central banks' accounts at the Fed show up as an increase in foreign deposits matched by an equal reduction in bank reserve deposits as the payments are cleared [1]. And second, the Fed's sale of securities to the foreign central banks shows up (on the asset side) as a drop in the Fed's holdings of govern-

Managing Reserves: Foreign Orders for Securities

Reserves Fall When the Fed Sells Treasury Bills Directly to Foreign Customers

Assets (factors supplying reserve funds)	Liabilities (factors absorbing reserve funds)
[2] **U.S. government and agency securities**	Currency in circulation
Loans to depository institutions	Treasury deposits at Fed
Float	**Foreign deposits at Fed** [1] [2]
All Other assets	All Other liabilities
	Reserve balances at Fed [1]

Reserves Rise When the Fed Buys Treasury Bills Directly From Foreign Customers

Assets (factors supplying reserve funds)	Liabilities (factors absorbing reserve funds)
[1] **U.S. government and agency securities**	Currency in circulation
Loans to depository institutions	Treasury deposits at Fed
Float	**Foreign deposits at Fed** [1] [2]
All Other assets	All Other liabilities
	Reserve balances at Fed [2]

ment securities matched by a reduction in foreign deposits (on the liability side) [2]. Overall, the result is a reduction in the quantity of U.S. government securities held by the Fed, matched by a reduction in bank reserve deposits. To generate an *increase* in bank reserve deposits, the Fed can buy Treasury bills for its own account directly from foreign central banks that wish to sell securities. In this case, the Fed's purchase of securities from foreign central banks generates no initial change in bank reserve deposits [1], but when foreign central banks use the newly available funds to make their payments, then bank reserve deposits rise [2].

In the Fed's balance sheet, the Fed's purchase of U.S. Treasury bills directly from foreign central banks shows up as an increase in the quantity of U.S. government securities held by the Federal Reserve, matched by an increase in foreign deposits. And there is a drop in foreign deposits, matched by an increase in bank reserve deposits, as the foreign central banks use the funds to pay their bills. Overall, the Fed's holdings of government securities rise (on the asset side), and there is a matching increase in bank reserve deposits (on the liability side).

The opportunity to alter the supply of bank reserves by executing internally some of foreign central banks' orders to buy or sell U.S. government securities at times provides a convenient means for the Fed to move the supply of reserves closer toward its target. In addition, by executing

such orders internally, rather than undertaking an open market operation to manage the supply of reserves, the Fed saves paying fees (in the form of the bid-ask spread) to securities dealers.

Non-open-market operations in which the Fed executes foreign orders to buy or sell U.S. government securities internally are not immediately apparent to participants in financial markets, because such transactions are not announced. Market participants can infer that such transactions have occurred, however, by examining the Fed's balance sheet when it is published each week.

Managing Reserves by Using Changes in the Treasury's Balance. The third type of non-open-market operation makes use of the effect of changes in the Treasury's balance in its account at the Federal Reserve. As noted earlier, "Treasury deposits" at the Federal Reserve arise from the Fed's role as fiscal agent for the U.S. government. When the Treasury writes a check, that check is drawn on the Treasury's account at the Fed. The individual or firm who receives the check deposits it in a bank account, and the bank presents the check to the Fed for payment. The Fed makes payment on the check by crediting the bank's reserve account at the Fed and simultaneously debiting the Treasury's account. So when the Treasury draws down its balance at the Fed to pay its bills, Treasury deposits fall and bank reserve deposits rise. In the Fed's balance sheet, Treasury deposits (on the liability side of the balance sheet) would decline, and bank reserve balances (also on the liability side) would rise by the same amount. The Fed's total liabilities would be unchanged, but bank reserves would increase. (See MANAGING RESERVES: THE TREASURY'S BALANCES.)

Managing Reserves: The Treasury's Balances

A Drop in Treasury Deposits at the Fed Raises Bank Reserves

Assets (factors supplying reserve funds)	Liabilities (factors absorbing reserve funds)
U.S. government and agency securities	Currency in circulation
Loans to depository institutions	Treasury deposits at Fed ↓
Float	Foreign deposits at Fed
All Other assets	All Other liabilities
	Reserve balances at Fed ↑

An Increase in Treasury Deposits at the Fed Reduces Bank Reserves

Assets (factors supplying reserve funds)	Liabilities (factors absorbing reserve funds)
U.S. government and agency securities	Currency in circulation
Loans to depository institutions	Treasury deposits at Fed ↑
Float	Foreign deposits at Fed
All Other assets	All Other liabilities
	Reserve balances at Fed ↓

The effect of Treasury revenues on bank reserves is somewhat more complicated. Payments to the Treasury for taxes or purchases of newly issued securities are deposited in special interest-bearing accounts that the Treasury maintains at commercial banks; these accounts are called "Treasury Tax and Loan Accounts" and are commonly referred to as "TT&L accounts." The Treasury transfers funds from TT&L accounts to its account at the Federal Reserve on a daily basis, so that it can use the funds to pay its bills. The Fed effects that transfer of funds, which is referred to as "making a call on TT&L accounts," by debiting the affected banks' reserve accounts and simultaneously crediting the Treasury's account at the Fed. Thus, a call on TT&L accounts drains reserves from the banking system.

In the Fed's balance sheet, tax receipts or other payments to the Treasury *and* the accompanying call on TT&L accounts would show up as an increase in Treasury deposits (on the liability side of the Fed's balance sheet) and an offsetting drop in bank reserve deposits (also on the liability side). In sum, payments *by* the Treasury reduce its balance at the Fed, and increase bank reserves. On the other hand, payments *to* the Treasury (along with the following call on TT&L accounts) increase its balance at the Fed and reduce bank reserve deposits.

Because changes in the Treasury's balance at the Fed cause equal but opposite changes in bank reserve deposits, the Treasury's actions to raise or lower its balance at the Fed provide an opportunity for the Desk at the New York Fed to manage the supply of reserves available to the banking system. If the Treasury makes calls on TT&L accounts that are larger than needed to meet the payments that the Treasury must make that day, then the Treasury's balance at the Fed will rise. That rise is matched by an offsetting drop in bank reserve deposits. On the other hand, if the Treasury makes calls on TT&L accounts that are smaller than needed to make that day's payments, then the Treasury's balance will fall, and bank reserve deposits will rise as a result. In addition, the Treasury can make direct deposits into TT&L accounts by transferring excess funds from its account at the Fed. Such "Direct investments to TT&L accounts" also reduce the Treasury's balance at the Fed and increase bank reserve deposits.

As part of its cash management activities, on some days the Treasury does make calls on TT&L accounts that are larger (or smaller) than its projected outlays for the day. If it has excess funds in its account at the Fed, the Treasury may decide to deposit some of those funds into TT&L accounts. Or it may choose not to do so. The Treasury confers daily with the Fed about its projected receipts and expenditures, and about the projected size of its daily calls on TT&L accounts. The Desk can take advantage of any resulting plans to increase (or decrease) the Treasury's balance to manage the supply of reserves available to the banking system.[6]

Changes in the Treasury's balance are not immediately apparent to participants in financial markets because information on the size of the Treasury's balance at the Fed is released to the public with a one day lag. Changes in the Treasury's balance affect the supply of bank reserve deposits immediately, however. The possibility

[6] Although the Treasury normally tries to match the size of its daily calls on TT&L accounts with its daily payments, in fact the Treasury's balance at the Fed changes almost every day because the Treasury must decide each morning how large a call to make on TT&L accounts on the basis of *projections* of its outlays during the day. Those projections are never exact, so the daily inflow of funds into the Treasury's account never exactly matches the outflow, with the result that the Treasury's balance fluctuates somewhat from day to day. Such fluctuations do not signal deliberate action to change the Treasury's balance at the Fed; rather, they are simply random fluctuations. In addition, the Treasury's balance usually rises around the dates that quarterly tax payments are due, because the inflow of tax receipts is typically larger than the amount that banks are willing to have on deposit in TT&L accounts (because banks have to pay interest on those deposits and pledge securities as collateral against them). A rising Treasury balance around the dates that quarterly tax payments are due does not normally signal deliberate action to increase the Treasury's balance, although conceivably it could be used to drain reserves from the banking system if the Fed decided not to take offsetting action to increase the supply of bank reserves.

of taking advantage of planned changes in the level of the Treasury's balance at the Fed provides the Fed with a third, though rarely used, means of conducting non-open-market operations.

Each of these three types of non-open-market operations provides the Federal Reserve with a technique for managing the supply of bank reserves without going through government securities dealers, in contrast to the familiar open market operation. Non-open-market operations may not be apparent to participants in the financial markets immediately, but they can be inferred from their effects upon the Federal Reserve's balance sheet, which is released to the public each Thursday afternoon for the week ending the day before.

WHEN ARE NON-OPEN-MARKET OPERATIONS USED?

The Federal Reserve uses non-open-market operations because they sometimes provide a convenient way of bringing the supply of bank reserves closer to its target, because they can save the Fed some costs, and because they sometimes avoid confusion in financial markets when market participants might misinterpret the reason behind an open market operation. In addition, undertaking a non-open-market operation can sometimes allow the Desk to execute smaller open market operations than would otherwise be necessary. That can help reduce interest rate volatility on days when the Desk needs to conduct unusually large open market operations. Non-open-market operations are used less than open market operations, but they have proved to be a useful tool in three kinds of situations.

To Offset Seasonal Fluctuations in Bank Reserves. Non-open-market operations have been used to offset part of the seasonal changes in some of the factors that affect the supply of reserves. For example, there is a large inflow of currency into banks after the Christmas shopping season, which causes a large increase in the supply of reserves in the banking system. Individuals and businesses no longer need to hold as much cash in January as they did before Christmas, so they deposit the extra cash into their bank accounts. The banks, in turn, send the extra currency back to the Fed and receive credits to their reserve accounts. The Fed can, and has, offset part of the resulting increase in the supply of bank reserves by letting some maturing Treasury bills "run off" from its portfolio. Doing so drains reserves from the banking system and reduces the temporary volatility in interest rates that might be caused by large open market operations to drain the unneeded reserves.

To Offset Temporary Changes in Bank Reserves. Non-open-market operations have also been used when factors beyond the Fed's control cause large but temporary fluctuations in the supply of reserves over some relatively short period. For example, a large quantity of reserves is drained from the banking system around quarterly tax payment dates as tax receipts flow into the Treasury and cause an increase in the Treasury's balance at the Fed. During the past few years those reserves have been pumped back into the banking system over a period of about two weeks, as the Treasury spends the funds. The Fed can, and has, offset part of the temporary drop in bank reserves by purchasing U.S. government securities directly from foreign accounts (rather than executing foreign central banks' orders through a government securities dealer) as the Treasury's balance rises. Later, as the Treasury's balance is drawn down toward normal levels, the Fed can sell some U.S. government securities directly to foreign central banks, or it can let some maturing Treasury bills run off, if those opportunities arise at the appropriate time. These actions by the Fed would help to smooth the skewed pattern in the supply of reserves while reducing the need to conduct unusually large open market operations.

To Avoid Misunderstandings about the Stance of Monetary Policy. A third situation in which non-open-market operations can, and have, been used is when monetary policymakers and the Desk are concerned that participants in financial markets would misunderstand an open market

operation that is needed for routine reserve management. For example, suppose that market participants think that the FOMC has decided to tighten monetary policy, but are unsure. Suppose, also, that the FOMC has not changed policy. Then if there is a temporary need to drain reserves from the banking system for some technical reason—to offset higher float, for example—the Desk might be reluctant to undertake an open market operation for fear that market participants would take such action as confirmation of a change in monetary policy that has not, in fact, occurred. In such a situation the Desk could drain reserves by taking advantage of an increase in the Treasury's balance, if the Treasury's cash management objectives allowed for temporarily increasing its balance at the Fed by making somewhat larger "calls" on TT&L accounts than were needed to meet the Treasury's immediate expenditures. Or the Fed could allow some Treasury bills to run off from its portfolio, if some of the bills held by the Fed were maturing at that time, and buy other government securities in the open market on a later day. Or the Fed could sell some Treasury bills directly to foreign central banks, if any foreign central banks had placed orders to buy securities, and the Fed could buy other government securities later, after the need to drain reserves had passed. Each of these actions would drain reserves from the banking system temporarily, as needed, without an open market operation. Each action has been used in situations in which there was a need to drain reserves temporarily.

In Sum. In each of the three types of situations discussed here, non-open-market operations provide a technique that the Fed can use to manage the supply of bank reserves over short periods without buying or selling securities in the open markets. Non-open-market operations *are* used when the Desk is concerned that relying solely on open market operations to manage the supply of bank reserves would cause an unnecessary disturbance in the financial markets. In addition, by reducing the volume of transactions that the Fed conducts through securities dealers, non-open-market operations sometimes provide a convenient way for the Fed to manage the supply of bank reserves at lower cost to the U.S. government. Each of the three basic non-open-market operations generates changes in the Fed's balance sheet that allow participants in financial markets to recognize when they have been used.

Most reserve management actions are conducted through familiar open market operations; non-open-market operations generate only a small share of the changes in bank reserve deposits that result from reserve management operations. Nonetheless, non-open-market operations are used regularly because they are a useful and convenient additional tool for managing the supply of bank reserves.

Philadelphia/RESEARCH

Working Papers

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