FEDERAL RESERVE BANK OF DALLAS

DALLAS, TEXAS 75222

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OPEN MARKET OPERATIONS BOOKLET AVAILABLE

TO THE CHIEF EXECUTIVE OFFICER
OF THE MEMBER BANK ADDRESSED IN THE
ELEVENTH FEDERAL RESERVE DISTRICT:

In an effort to educate the public about the formulation and execution of monetary policy, Paul Meek, Monetary Adviser in the Federal Reserve Bank of New York's Open Market Operations and Treasury Issues areas, has written the enclosed booklet, entitled *Open Market Operations*. The booklet explains the Federal Reserve's open market operations in United States Government securities. In *Open Market Operations*, Meek has captured some of the challenge of translating broad policy objectives into day-to-day operations, giving particular emphasis to monetary and credit aggregates as objectives of policy.

Additional copies of this booklet may be obtained free of charge from the Bank and Public Information Department of this Bank, Ext. 6267.

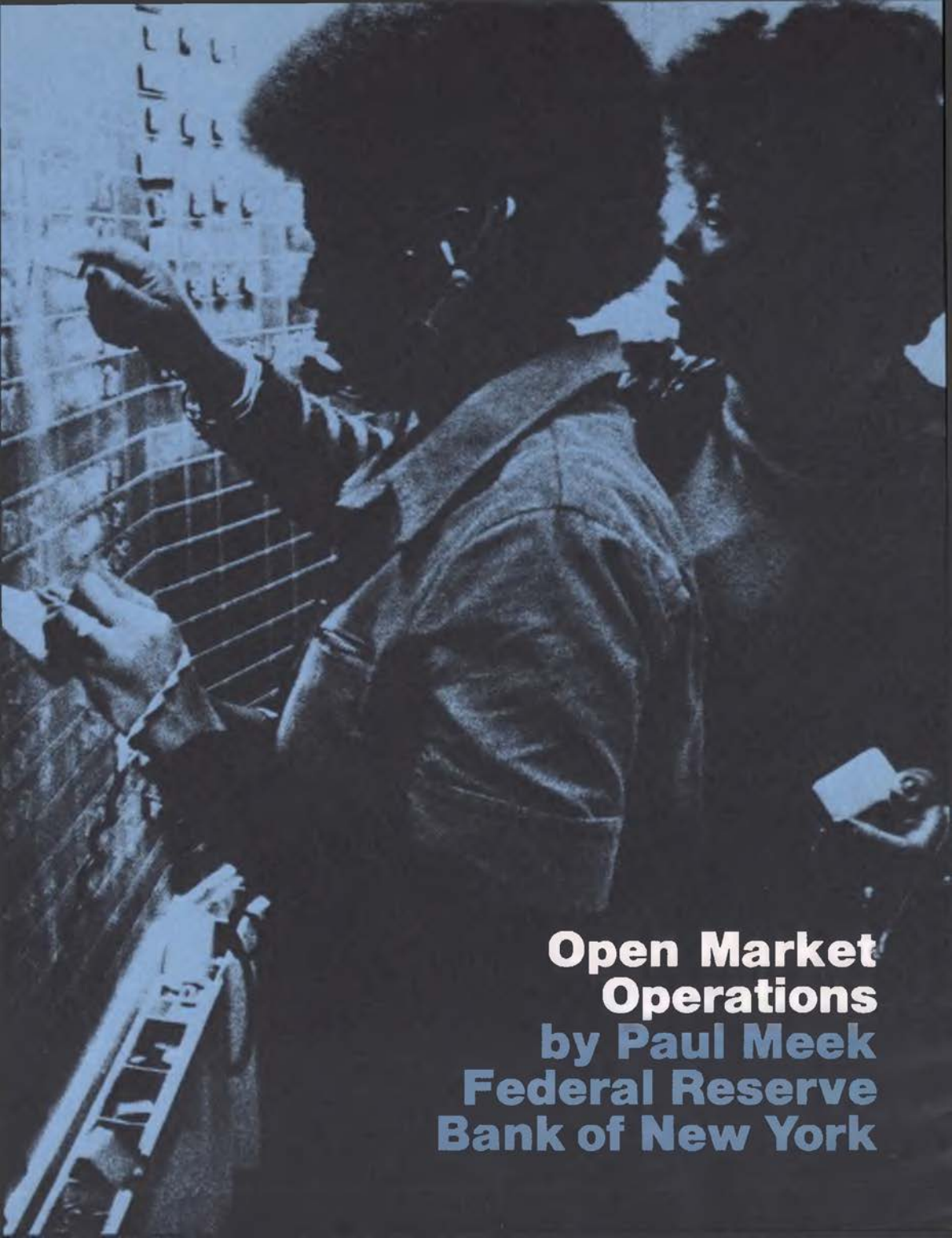
Sincerely yours,

Ernest T. Baughman

President

Enclosure

Banks and others are encouraged to use the following incoming WATS numbers in contacting this Bank: 1-800-492-4403 (intrastate) and 1-800-527-4970 (interstate). For calls placed locally, please use 651 plus the extension referred to above.



Open Market Operations

by Paul Meek
Federal Reserve
Bank of New York

FOREWORD

Few areas of economics seem to mystify the general public more than Federal Reserve open market operations in United States Government securities. To those of us in the Federal Reserve System, however, few areas are more fascinating. It is through the trading of U.S. Government securities in the open market that we try to offset undue stresses on our monetary machinery and influence the economy by affecting the cost and availability of credit.

Paul Meek, Monetary Adviser in this Bank's Open Market Operations and Treasury Issues area, has sought to capture some of the challenge that we in the System feel in translating broad policy objectives into day-to-day operations. He has portrayed open market operations in their current setting with particular emphasis on monetary and credit aggregates as objectives of policy.

The author has been assisted with this fourth edition by the Public Information Department. Many others within the Bank have contributed comments and suggestions.

We hope *Open Market Operations* will stimulate readers to learn about the formulation and execution of monetary policy.

Thomas M. Timlen
First Vice President
June 1978

THE "GO-AROUND"

The time is just before noon on the Tuesday before Thanksgiving Day. The place is the eighth floor trading room of the Federal Reserve Bank of New York. The Manager of the Federal Reserve System's Open Market Account has made his decision. He tells his second in command to buy about $500 million in United States Treasury bills for immediate delivery.

The decision made, the officer-in-charge turns to the ten officers and securities traders who sit before telephone consoles linking them to more than 30 primary dealers in U.S. Government securities. "We're going in to ask for offerings of all bills for cash," he says. Each person is quickly assigned two to four dealers to call.

Joan, a New York Federal Reserve trader, presses a button on her telephone console, sounding a buzzer at the corresponding console of a Government securities dealer.

"Jack," Joan says, "we are looking for offerings of all bills for cash delivery."

Jack replies, "I'll be back in a minute." The salesmen of his firm quickly contact customers to see if they wish to make offerings. Jack consults the partner in charge about how aggressive he should be in offering the firm's own holdings.

Ten minutes later Jack calls back. "Joan, I can offer you for cash $5 million of January 5 bills to

yield 5.85 percent—$10 million of January 26 bills at 5.90—$20 million of March 23 bills at 6.05—and $30 million of May 30 bills at 6.14."

Joan says, "Can I have those offerings firm for a few minutes?"

"Sure."

Within minutes the "go-around" is completed. The traders have recorded the offerings obtained from their calls on special preprinted strips. The officer-in-charge arrays the individual dealer offerings on an inclined board atop a stand-up counter. A tally shows that dealers have offered $1.8 billion of bills for cash sale—that is, with delivery and payment that very day.

The officer then begins circling with a red pencil the offerings that provide the best—that is the highest—rate of return for each issue. The large quotation board facing the open end of the U-shaped trading desk tells him the yields on Treasury bills as they were in the market just before the "go-around" began. An associate keeps a running total of the amounts being bought. When the desired amount has been circled, the individual strips are returned to the traders, who quickly telephone the dealer firms.

"Jack, we'll take the $5 million of January 5 bills at 5.85 and the $30 million of May 30 bills at 6.14 both for cash; no, thanks, on the others," Joan says.

Forty-five minutes after the initial decision, the calls have been completed, and $523 million in Treasury bills purchased. Only the paper work remains. The traders write up tickets, which provide the basic authority for the Bank's government bond department to receive and pay for the specific Treasury bills bought. The banks that handle the dealers' deliveries—the clearing banks—will authorize deductions of the securities from the book entry list of their holdings at the Federal Reserve. In return, they will receive credit to the reserve accounts the banks maintain at the New York Reserve Bank.

The Federal Reserve credits to the dealers' banks immediately adds over $500 million to the reserves of the U.S. banking system.

The Federal Reserve's market entry sparks hurried consultations at dealer firms and many commercial banks throughout the country. Could the Federal Reserve have been trying to push down the interest rate on Federal funds—interbank loans usually made for one business day—to encourage a more rapid growth of money and credit in the country? Or was it merely supplying reserves to the banks to meet the public's normal demands for cash and credit around Thanksgiving?

Such questions can rarely be answered by analyzing a single Federal Reserve market operation. But they underscore the keen interest of bankers, businessmen, and governments throughout the world in knowing the current thrust of U.S. monetary policy. Open market operations can set in motion financial ripples that spread rapidly to affect the cost and availability of credit in United States and foreign financial markets. Eventually, the economic effects of sustained Federal Reserve action are felt at home and abroad.

Under the Federal Reserve Act, the System uses open market purchases and sales of Government and Federal agency securities as its most flexible means of adding to, or subtracting from, commercial bank reserves. A routine objective of these operations is to head off the stresses imposed on the monetary machinery by seasonal, regional, or erratic shifts in money. A longer term objective is to foster monetary and credit conditions that will promote a healthy economy. The System defines these objectives in terms of growth in various measures of the money stock and bank credit over a 12-month period. Its ultimate goals are sustainable economic growth, high employment, reasonable price stability and viability in the nation's international accounts.

COPING WITH MONETARY STRESSES

Banks and their reserve positions

The United States banking system, like systems in most other financially developed countries, is called a fractional reserve system. Under Federal and state laws, virtually all of the nearly 14,700

commercial banks in the United States must maintain cash reserves equal to a specified fraction of their demand deposits—that is, the checking accounts of their depositors. Most must maintain reserves for savings and other time deposits as well.

Commercial banks which are members of the Federal Reserve System hold about 75 percent of the banking deposits in the U.S. Member banks include all banks chartered by the Federal Government—about 4,700—and state-chartered banks that have chosen membership—about 1,000. They are legally required to hold their required reserves either as cash in their vaults or deposit balances in reserve accounts at their district Reserve Banks.

Banks that are not Fed members are subject to the reserve requirements of the states that chartered them. About 8,900 state-chartered banks, accounting for about 25 percent of all bank assets, are nonmembers. They hold required reserves in vault cash, deposits with correspondent banks, Government securities, or other forms permitted by banking laws of their chartering states. For simplicity, this discussion focuses on member banks.

Congress delegated the responsibility for setting member bank reserve requirements, within broad limits, to the System's Board of Governors—a seven-member, Presidentially appointed group. In 1977, reserve requirements were graduated from 7 percent on the first $2 million of demand deposits to 16¼ percent on deposits in excess of $400 million. Member banks must also maintain reserves of 3 percent on savings deposits and 1 to 6 percent on other time deposits. Reserve requirements must be met for the week ending on Wednesday, the "statement" week, and are based on the deposits on each bank's books two weeks earlier.

As profit-seeking enterprises, member banks try to keep their reserves, which produce no income, close to the required minimum. Yet, they also want to avoid reserve deficiencies on which the Federal Reserve may levy a penalty charge.

Managing a bank's reserve position can be a trying business. Most of the financial transactions of a bank and its depositors affect the bank's reserve position. Checks drawn by depositors to pay out-of-town bills, for example, funnel back through its district Reserve Bank and are charged against the bank's reserve account. A bank also loses reserves when it pays out vault cash. And a bank is likely to lose reserves when making loans or buying securities. Each day a bank's reserve position reflects the net result of reserves lost through such transactions, on the one hand, and reserves brought in, on the other, by check and currency deposits, tax credits to the Treasury accounts the bank holds, and its sales of securities.

A member bank can employ several lines of defense if reserves are lost to other banks through the daily ebb and flow of transactions. It may seek to borrow reserves for one or more days from other banks in the Federal funds market. A bank can also sell short-term Government securities or other "liquid"—readily marketable—assets. Such sales effectively pull reserves from the bank on which the buyer's check was drawn. Or the bank could bid for large deposits, issuing negotiable certificates of deposit (CDs) as evidence of its promise to repay with interest in 30 days or longer.

Member banks have a final defense against unforeseen reserve losses in their privilege of borrowing from their regional Reserve Bank. Usually, they borrow only for short periods, on their own notes secured by Government securities or other acceptable collateral. The interest rate a member bank pays on such borrowing is the Reserve Bank's *discount rate*.

The Federal Reserve steps in

Open market operations enable the Federal Reserve System to affect the reserves of the banking system and to regulate the pressure on the banks to take action. Individual banks can meet their reserve requirements by drawing reserves from other banks. But, in the short run, banks as a group can only pass around the reserves available—or borrow new reserves at

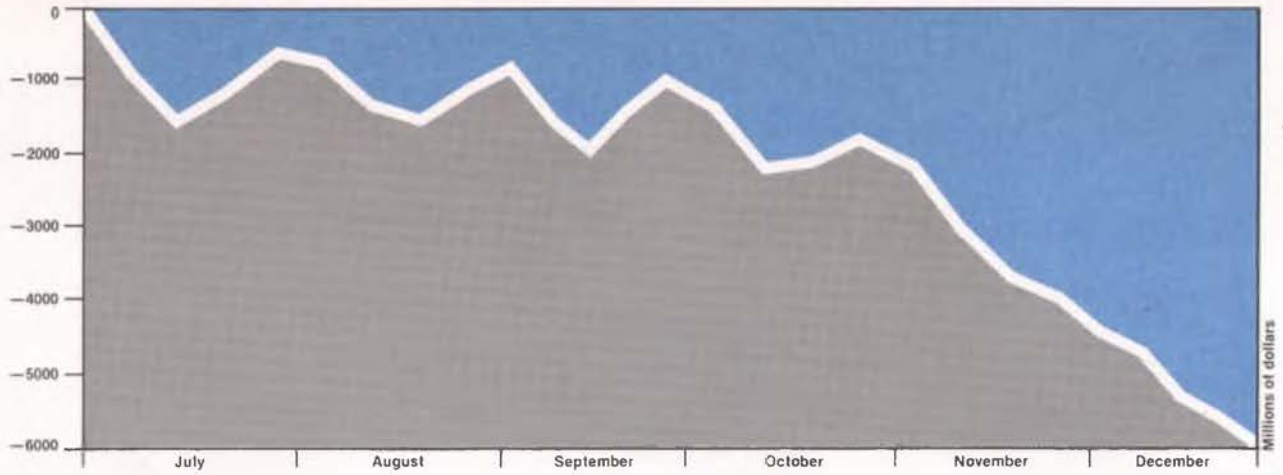


Chart I
The Effect of Changes in Currency in Circulation on Bank Reserves*

*Cumulative changes in daily averages July through December

the Federal Reserve discount window. Open market operations allow the Federal Reserve to change the volume of reserves available to member banks before they borrow from the Federal Reserve—that is, to manage nonborrowed reserves. In this way, the Fed can offset the reserve swings caused by the public's changing demand for cash and other factors. By managing nonborrowed reserves, the Fed can adjust the pressure on the banks to borrow from the 12 regional Federal Reserve Banks to cover their reserve requirements. By adding more reserves than the banks require, it can stimulate their expansion of money and bank credit. Alternatively, it can restrain that expansion by holding back in supplying reserves.

An elastic currency

Through open market purchases, the System can replace the reserves lost when bank customers draw cash from their banks around holidays like Thanksgiving or the Fourth of July. When coin and currency are redeposited in the banks by merchants after the holidays, open market sales can compensate for the buildup in vault cash.

The economy's biggest annual need for currency and coin arises as the holiday shopping season builds to its climax between the first of November and Christmas. Commercial banks supply customers with pocket money by obtaining currency from the district Reserve Bank—drawing down their own reserve accounts (Chart I). If the Federal Reserve didn't offset such recurrent drains on bank reserves, banks without excess reserves would try to rebuild their reserve positions by buying funds from other banks (bidding up the Federal funds rate), by selling securities, or by calling short-term loans.

Such actions would put strong upward pressure on interest rates and could lead to serious market disturbances. Indeed, before the System was established, financial strains of this type became so severe on a few occasions that they touched off financial panics that reduced economic activity. A panic in 1907 set off the search for a method of assuring that currency expanded and contracted with the needs of the economy. This search led to the passage of the Federal Reserve Act in 1913.

The movement of currency into circulation around holidays is reasonably predictable. But another factor affecting bank reserve positions—known as Federal Reserve float—is rather erratic. Float arises mainly in the check collection process. A member bank sends checks for collection to its Reserve Bank. The Reserve Bank credits the member's reserve account within a maximum of two business days, even though three or more days are often needed to collect funds from the banks on which they are drawn. As a result, the Reserve Banks customarily show on their books more dollars *due from* member banks on which checks have been drawn, than dollars *due to* member banks which have deposited checks for collection.

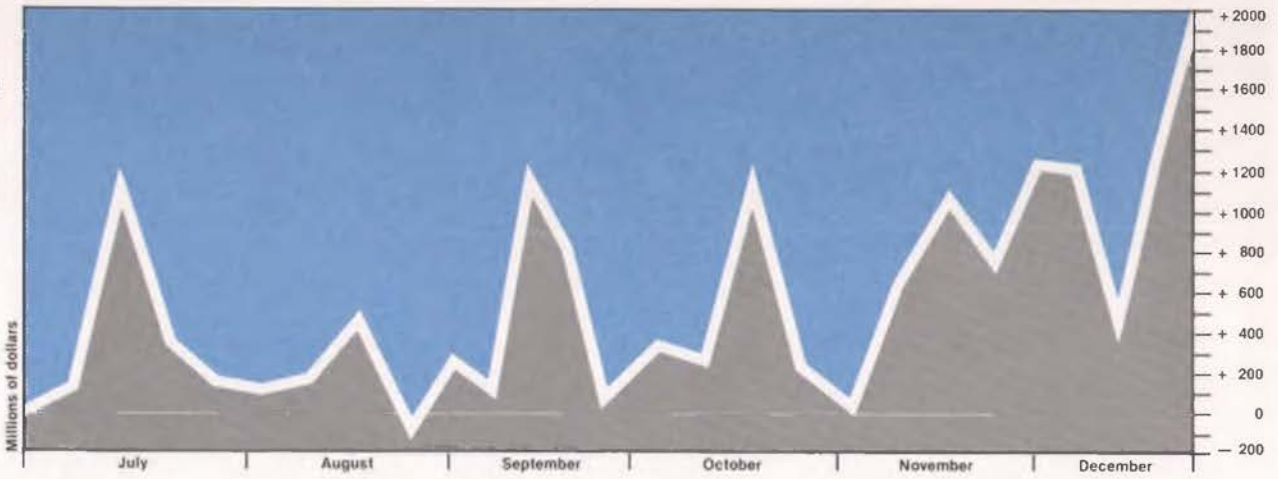
On a typical day in 1977, for example, *due from* items in process of collection totaled $8,147 million while deferred availability—*due to*—cash items totaled only $5,385 million. The amount by which the *due from* items exceeded the *due to* items—$2,762 million that day—is called Federal Reserve *float*. In effect, some member banks had been credited before others were charged. Credits can also arise without offsetting debits in the routine processing of transfers of funds and securities over the Fed's wire network.

Float can vary widely within a week or month, as well as over the year. In 1977, float ranged from $2.2 billion to about $6.2 billion. Bad weather, transportation tie-ups, or anything affecting check deliveries or the speed of processing can cause large daily changes in float. Float rises near the middle of each month as people and businesses pay their monthly bills (Chart II). This bulge tends to provide the banking system with substantial additional reserves for a brief period until float subsides with check volume toward the end of the month.

During the Christmas season, the volume of checks written rises sharply and check deliveries are delayed as Christmas cards and packages

Chart II
The Effect of Changes in Float on Bank Reserves*

*Cumulative changes in daily averages July through December



flood the mails, superimposing a strong seasonal rise on the monthly pattern. To prevent the large swings in float from alternately increasing and decreasing the total supply of reserves available to the banking system, the Federal Reserve must engage in offsetting open market operations.

Other reserve factors

Changes in the deposits maintained at the Federal Reserve by the Treasury, foreign central banks, and international institutions also affect bank reserves. When such deposits rise, reserves are transferred from member banks to these accounts. When the balances are drawn down to make payments, member bank reserve accounts increase.

In early 1978, swings in the Treasury's balance at the Federal Reserve Banks were a major source of variability in bank reserves. Until a few years earlier, the Treasury had sought to maintain a reasonably stable working balance at the Federal Reserve. It used its "tax and loan" accounts at commercial banks as a buffer, accumulating tax and other payments there, and transferring funds to the Reserve Banks at a rate that about offset the checks drawn on its Reserve Bank balance. More recently, the Treasury has been keeping the bulk of its balances at the Reserve Banks.

The Treasury itself could not legally invest funds, but commercial banks holding these accounts could and did. Banks provided the Treasury with services without charge and were compensated by their earnings on the Treasury's balances. Sharply higher short-term interest rates in 1973 and 1974, however, boosted bank earnings on these funds so much that it became clear that they exceeded substantially the value of services rendered the Treasury.

To correct this imbalance, the Treasury shifted funds to its Federal Reserve balances from commercial banks, draining reserves from the banks and necessitating System purchases of securities. The interest the Federal Reserve earned on these holdings increased the System's regular payments of its net earnings to the Treasury. Thus, the Treasury obtained indirectly a return on its funds that it could not obtain from commercial banks directly.

This change in the Treasury's management of its cash position led to very large short-term swings in the Treasury's Federal Reserve balance, since tax and loan accounts at commercial banks no longer provided a buffer. In 1970, the average weekly change in Treasury deposits at the Federal Reserve was $124 million. In 1977, the change averaged $2 billion. To offset the impact on reserves of these abrupt changes, the System had to supply reserves temporarily through matched purchase-and-sale contracts, called repurchase agreements. Matched sale-purchase contracts were used when the System had to absorb reserves temporarily. New legislation will permit the Treasury to receive an interest return directly on its tax and loan balances at financial institutions. Soon the Treasury can again use these balances to insulate the reserves of the banking system from the impact of its volatile cash position.

The System's task of smoothing reserve pressures arising from fluctuations in these and other factors is never ending. As pressures shift, the open market desk must often be prepared to change from supplying to absorbing reserves, often within the same week. Within most months, there are predictable shifts in the need to supply and absorb reserves. In the last several months of the year, as we have seen, reserves must be supplied seasonally, only to be withdrawn from the banks early in the new year.

The Federal Reserve, the banks, and deposit growth

The open market desk must deal with more than the pressures generated by currency flows, Federal Reserve float and other factors affecting bank reserves. It must also cope with the swings in required reserves that stem from short-run changes in bank deposits. The trading desk must see how bank deposits are tracking in relation to seasonal patterns to judge whether the longer run growth in the money stock and bank credit is unfolding as the Federal Reserve desires.

The main seasonal movements in demands for

Federal Reserve Bank of New York		The Dealers' Clearing Banks	
Assets	**Liabilities**	**Assets**	**Liabilities**
1. Treasury bills	2. Reserve accounts of the dealers' clearing banks	3. Reserve account at Federal Reserve	4. Demand deposit accounts of dealers
+ $523,000,000	+ $523,000,000	+ $523,000,000	+ $523,000,000
1. Federal Reserve buys Treasury bills and . . .	2. Clearing banks transfer Treasury bills by wire, receiving credit to their reserve accounts.	3. Clearing banks' reserve accounts increase and . . .	4. Clearing banks credit demand deposit accounts of dealers selling the Treasury bills.

The Accounting Trace of a Federal Reserve Purchase of Treasury Bills from Nonbank Dealers

TRACKING A FEDERAL RESERVE PURCHASE OF TREASURY BILLS FROM NONBANK DEALERS

Federal Reserve purchases of securities supply reserves to the banking system; sales withdraw reserves. When the Manager purchased $523 million of Treasury bills on the Tuesday before Thanksgiving, he paid the securities dealers by crediting the reserve accounts of the banks handling the dealers' paper work, an action that created reserves that didn't exist before. Had he sold Treasury bills instead, he would have reduced the System's open market account holdings and extinguished bank reserves. The Federal Reserve derives this power to create or extinguish bank reserves from Congress, which has the Constitutional power to "coin money (and) regulate the value thereof" (Article I, Section 8).

Assume the Manager purchased the Treasury bills from nonbank dealers. The dealers' New York clearing banks receive credit to their reserve accounts and they, in turn, credit the dealers' deposit accounts. (When bills are bought from a bank acting as a dealer, the dealer bank simply receives a credit to its reserve account.) The immediate effect of the day's open market purchases is a $523 million rise in Federal Reserve assets (Treasury bill holdings) and in Federal Reserve liabilities (member bank deposits). Member bank reserve balances rise $523 million while deposit liabilities to customers rise by a similar amount.

When nonbank dealers buy Treasury securities from the Fed, they usually arrange for their clearing banks to pay through a charge to each clearing bank's reserve account. The Reserve Bank delivers the securities through the Government securities clearing arrangement. (Dealer banks pay for System purchases by authorizing direct deductions from their reserve accounts.)

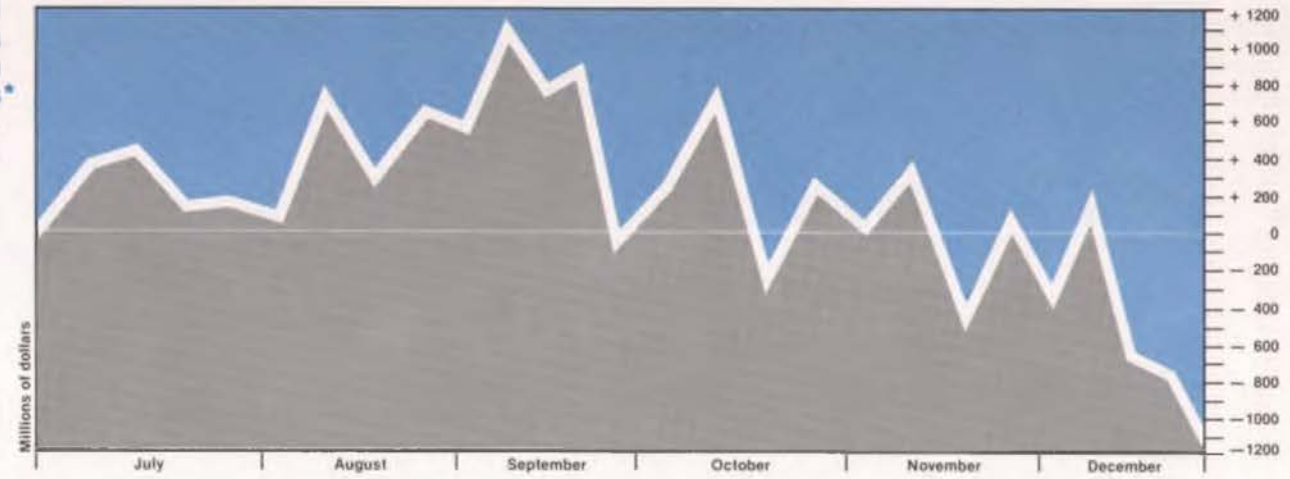
When the System adds to bank reserves through open market purchases, the additional reserves don't all remain in the New York City banks that handle securities for the nonbank dealers. To buy and hold Government securities, these dealers normally borrow money from all around the country—from insurance companies, corporate treasurers, banks, state and local governments and others. In fact, they borrow 95 cents or more of every dollar used to buy securities, pledging the securities bought as collateral.

When the Federal Reserve bought securities from dealers on that Tuesday before Thanksgiving, nonbank dealers had to repay their borrowings and redeem the securities before they could deliver them to the System Account. In effect, they repaid the loans that day with the proceeds of the sale to the System.

A large part of the increase in reserves was transferred the same day from the dealers' checking accounts over the Federal Reserve's wire network to the reserve accounts of banks in other cities. Perhaps $10 million was wired to Hartford by a dealer to pay off an insurance company loan, $6 million to Chicago to repay a manufacturer, $25 million to a San Francisco bank to redeem securities held by it, and so on. Thus, an addition to bank reserves spreads quickly across the country. And banks gaining reserves may redistribute part of them temporarily by lending them in the Federal funds market.

Chart III
The Effect of Changes in Required Reserves on Excess Bank Reserves*

*Cumulative changes in daily averages July through December



bank credit and deposits are clear to the Federal Reserve and commercial bankers alike. As a rule, there is a pronounced upswing in bank loans to business in the last four months of each year, partly because agricultural crops are moving to market, but chiefly because retail businesses are borrowing to stock up for the fall season and the Christmas rush. The Treasury is also a major borrower in this season because tax receipts typically fall short of expenditures in the last half of the calendar year.

The expansion of credit demands and business activity in the fall is typically accompanied by a rise in employment and incomes, on the one hand, and a rise in working balances and savings deposits at commercial banks, on the other. Rising deposits lead to an increase in the required reserves that the banks must hold (Chart III). In pre-Federal Reserve days, banks often had to sell liquid assets in large volume to make room for the seasonal increase in loans and reserve requirements. Today, the Federal Reserve supplies the banking system with additional reserves in step with the seasonal demand for credit and deposits. There is no need for forced sales of securities or other assets, which would raise interest rates.

The actual behavior of bank credit and deposits each year reflects the interaction of banks, their customers, and the Federal Reserve. Bank decisions are influenced by present and prospective customer demands, the economic outlook, and bankers' perceptions of how readily the Federal Reserve may accommodate nationwide demands for money and credit. Most large banks project both the loan demand they are likely to face and the demand and savings deposits they are likely to attract. Many also estimate whether the Treasury's projected budget calls for greater than seasonal borrowing in the months ahead. Bankers must judge whether all the credit demands they foresee can be accommodated within the rates of growth in the money stock and bank credit being sought by the Federal Reserve System. Interest rates will be expected to rise if money and credit demands are excessive—or fall if they are below the Fed's growth objective.

Against this background, bankers will act on their individual readings of incoming evidence. If its holdings of loans and securities were rising faster than its demand and savings deposits, a bank would lose reserves to other banks and fall short of meeting its rising reserve requirements. It must decide whether to adjust by reducing its assets, adding to its liabilities, or some combination of the two.

The bank's current expectations of loan demand and Fed policy will affect its choice among different courses of action. If the bank sees a developing national pattern of strong loan demand and rapidly growing deposits, it may expect the Federal Reserve to hold back on supplying nonborrowed reserves through open market operations in order to slow deposit and bank credit growth. Since interest rates would rise in that case, the bank might choose a longer term means of adjustment. It might sell CDs or Treasury securities at current interest rates rather than temporize by borrowing in the Federal funds market or from its Reserve Bank. Conversely, if deposit growth were to outpace the rise in loans and securities, the bank would be likely to buy additional securities, while stepping up its efforts to generate loans. Expectations of an expansive Federal Reserve policy would speed up such actions.

The Federal Reserve for its part follows closely the manner in which the money stock and bank credit respond to the actions of banks and their customers. Particular attention is paid in operations to the growth of money, in both its M_1 definition—coin, currency, and private demand deposits at commercial banks—and its M_2 definition—M_1 plus time and savings deposits other than large negotiable certificates of deposit at major banks. The Federal Open Market Committee (FOMC—see pages 13-15), a key System policy-making body, gives the System Account Manager a set of weekly and monthly tracking paths that tie in with the desired longer term growth of the two monetary aggregates, M_1 and M_2.

Suppose the two aggregates appear to be expanding more rapidly than desired. The Manager is then supposed to supply fewer nonborrowed reserves in relation to the larger bank demand for reserves that typically accompanies a rise in M_1 and M_2. In that case, banks will be short of reserves, will bid up the rate on Federal funds, and will be forced to borrow more at the Federal Reserve discount window. In time, the rise in interest rates and the portfolio adjustments set in motion among banks, businesses, and consumers should work to slow the growth rate of deposits and required reserves.

Conversely, suppose deposits and bank credit fall short of the Federal Reserve's desires. The Manager would then be obligated to purchase large amounts of Government securities in order to provide nonborrowed reserves more freely. This action would push down the Federal funds rate, and be intended to spur growth in bank investments and deposits over the months ahead.

The Federal Reserve must closely monitor progress toward its longer term objectives while it copes with the short-run stresses caused by seasonal and random forces. Although the System guards against seasonal strains by anticipating reserve needs and changes, no two years are alike. Flexibility remains the key to effective action.

PROMOTING A HEALTHY ECONOMY

Monetary goals

The Federal Reserve's most important task is to implement a monetary policy that moves the nation toward its economic objectives of sustainable economic growth, high employment, reasonable price stability and a sustainable pattern of international transactions. Reserve requirement and discount rate changes are important tools, but open market operations are the primary vehicle for carrying out monetary policy.

Monetary policy, in concert with other governmental policies, seeks to encourage relatively full use of the economy's productive resources. It must also keep demand for goods and services in balance with the economy's ability to use land, labor, capital and technology without inflation. Achieving this balance is important not only for domestic progress but also for maintaining the country's competitive position in the world economy.

More money and bank credit or less?

Timely action to speed up or slow down the growth of the nation's money supply and bank credit affects lenders and borrowers and, through their actions, affects total spending and economic activity. When it foresees falling production and rising unemployment (recession), the Federal Reserve can provide more nonborrowed reserves to commercial banks and contribute to a decline in interest rates. Provided borrowers are seeking

MONETARY POLICY: HISTORICAL PERSPECTIVE

The shifting challenge confronting monetary policy and the varying importance of its role are illustrated in the history of the past half century.

1930's: Depression decade

The worldwide economic collapse during the Great Depression of the early 1930's shattered business and consumer confidence. The Federal Reserve pumped reserves into the banking system and interest rates fell to very low levels. But the reserves piled up as idle balances. Bank and business failures and economic uncertainty restrained the private demand for credit and also tempered bankers' readiness to lend and invest. Stepped-up U.S. Government spending contributed to a gradual economic recovery in the mid-1930's. But output remained generally below its 1929 peaks until defense spending accelerated dramatically after the 1939 outbreak of war in Europe. Only then did the unemployment rate—which was still over 17 percent in 1939—begin falling sharply.

1940's: War and its aftermath

The Federal Reserve made sure that banks had adequate reserves to buy the Treasury

securities that financed the Government's huge war spending and the resultant budget deficits. By 1943, total output (GNP) was 70 percent above the 1939 level in real terms and the unemployment rate was below 2 percent. Price controls, rationing, and consumer saving helped restrain the upward pressure of demand on the prices of the limited supplies of consumer goods available.

Peace brought a rapid shift from Government spending for war to booming civilian demand for housing and consumer goods. U.S. loans and economic aid helped sustain Europe and rebuild its productive capacity. Prices rose rapidly in 1947 and 1948 as price controls and rationing were ended and spending outran expanding production. By the end of the decade, however, prices had leveled off when the economy sputtered into its first mild postwar recession.

1950's: Countering the business cycle

The outbreak of the Korean conflict in June 1950 boosted Government spending and touched off a worldwide boom in raw material and other prices. Inflation was a major concern throughout the decade, but unemployment and sluggish growth were emerging as policy issues before the 1950's were over. Freed in 1951 from earlier constraints on its ability to use monetary policy flexibly, the Federal Reserve sought to use open market operations to moderate swings in economic activity and restrain the economic excesses that lead to inflation. The Government also used its tax and spending powers—fiscal policy—to counter economic swings. Military outlays were cut after the Korean war. Also, during business recessions, the Federal authorities undertook to maintain demand by stepping up Government spending and sustaining private demand through unemployment compensation.

Tax revenues typically fall in recessions when people are out of work and corporate profits are declining. Higher Government spending then has to be financed by Treasury borrowing. During these periods, the Federal Reserve supplied commercial banks with enough reserves to buy Treasury securities heavily as well as to add to their mortgage loans. During the 1950's, policymakers learned that restraining excessive demand in boom times was important for two reasons. It helped keep inflation from getting out of hand. And it also held back credit-sensitive private spending until slack times, when it could be released by making money more readily available.

1960-65: Seeking balanced growth

By the early 1960's, the stage seemed set for a broadly based economic expansion without inflation. The economy recovered smartly from the 1960-61 recession. But for the first time in the postwar period, expansion policies and lower interest rates set off a transfer of funds abroad and caused countries to buy gold from the U.S. rather than add to their dollar holdings.

Neither an expansive monetary policy nor rising Federal expenditures seemed able to push the economy nearer its full productive potential. In 1963, the unemployment rate averaged 5.7 percent, only one percentage point below the recession level of two years earlier. Moreover, Government policies had to rebuild confidence in the dollar and the international monetary system after the gold outflow of 1960.

Gradually, a consensus developed that the nation's highly progressive income tax structure was choking off private demand. Tax cuts in 1964 contributed to accelerated consumer spending and business investment in new plant and equipment. Unemployment declined to 4½ percent by mid-1965 while remarkably stable prices contributed to solid gains in trade with other nations.

credit, banks will make loans and buy securities, typically paying with newly created demand deposits. M_1 will tend to rise. As borrowers spend their new funds, the rise in spending will generate new jobs and higher incomes. And time and savings deposits are likely to rise with income so that M_2 growth will also accelerate.

When the Fed foresees that monetary demand is likely to be excessive so that rising prices (inflation) are on the horizon, the Federal Reserve can provide fewer nonborrowed reserves. The Federal funds rate will rise, and banks will borrow more heavily at the discount window. As the cost of reserves and market interest rates rise, banks and their customers start to adjust their portfolios of financial assets. Under sustained pressure from the Fed, these adjustments translate in time into reduced rates of deposit and bank credit growth. Some borrowers get squeezed out of the credit markets and monetary demand is brought back in line with the economy's productive capacity.

There are no guarantees that monetary policy will have precisely the desired impact on spending in the economy. Open market operations have a direct effect on nonborrowed reserves and short-term interest rates. But the effects on M_1 and M_2 may vary greatly, depending on the aggressiveness with which banks lend and invest, and whether the public holds its liquid assets as time deposits with banks or in other forms. In addition, the economy's course will reflect more than the borrowing and spending decisions of consumers, businesses and governments. Also at work will be the pricing policies of business, the wage goals of labor, the tax laws of government, and economic conditions abroad.

The Federal Reserve has considerable control over nonborrowed reserves, but it can't control the use of those reserves in the short run. The banks may use additional reserves to reduce indebtedness to Reserve Banks or others, rather than make more loans or buy more securities. Furthermore, the Federal Reserve can't control how the public holds its money balances. If the public withdraws large amounts of cash from the banks, as we have seen, the Federal Reserve will have to pump in an equal amount of reserves simply to avoid putting upward pressure on interest rates that could lead to a decline in the money stock. While Fed influence over the money stock is limited in a week or a month, the Fed does have a reasonable prospect of achieving desired growth in money over a period of months.

The appropriate growth rate for money depends on the rate at which the money stock is used—its rate of turnover or velocity. The Federal Reserve's strong influence over reserves and short-term interest rates are not the only factors at work. The public's desire for cash and institutional arrangements for handling money payments are largely outside the Fed's short-run influence. Monetary policymaking involves continual review of goals and the operations being used to pursue them.

Policy in context

In the mid-1960's, America was riding the crest of a lengthy economic expansion. Confidence was high that policymakers could manage economic growth without sustained unemployment or escalating prices. But, within ten years, most of the industrial world was suffering from both—and at the same time.

What went wrong?

U.S. entry into the Vietnam conflict in mid-1965 imposed heavy new demands on an economy already growing about as fast as it could without generating inflation. But the Government chose not to increase taxes significantly or cut back on newly launched social programs. Budget outlays rose 50 percent over the next three years with military spending accounting for half the increase. The annual Federal deficit rose from $1.6 billion to $25.2 billion.

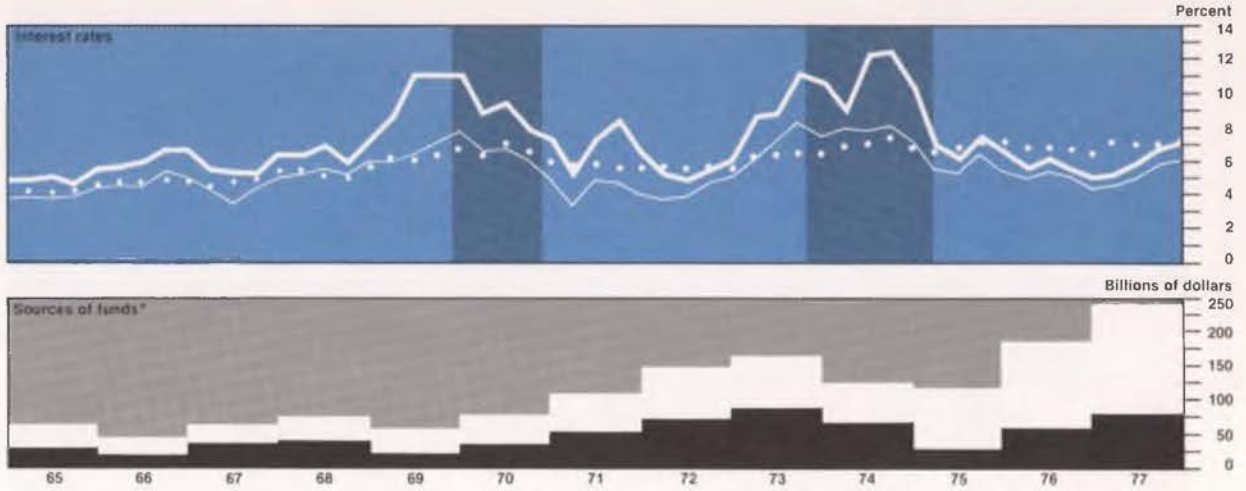
Monetary policy was forced to try to keep total demand from outstripping productive capacity. In 1966, the Federal Reserve sought to restrain bank reserve growth in order to hold back private spending and release the goods and services being taken by the Government. By late summer, as the economy raced ahead, the resultant competition for funds by Government, business and

Chart IV
The Flow of Funds and Interest Rates

Note: Dark areas in upper chart mark business cycle contractions

— Three month Treasury bills
▬ Three month Eurodollar rates
•• U.S. Government long-term

■ Commercial banking system
□ Other sources
*From credit and equity markets



consumers drove interest rates to levels not seen for over 40 years. Thrift institutions lost deposits as savers switched to the higher rates being paid by marketable securities and by commercial banks on small CDs at that time. Then thrifts were forced to cut mortgage lending, and housing starts plummeted. Industrial production began dipping by the end of 1966, but steeply rising imports and inflation showed that monetary policy hadn't compensated for the lack of fiscal restraint.

Once the economy began slowing in the fall of 1966, the Federal Reserve reversed policy direction. Open market operations pumped in bank reserves to revive housing and avoid a cumulative decline in economic activity. Interest rates fell, bank credit and the money supply rose, and in 1967, the economy resumed its advance.

The Administration called for a broad tax increase to blunt the inflationary thrust of rising Federal expenditures and to restore balanced economic growth. Congressional discussion of the tax proposal, however, dragged on while another boom gathered steam. Unemployment dropped to 3½ percent, wages and prices continued going up, and the foreign trade balance worsened. To make matters worse, the international monetary system experienced a severe crisis, sparked by the devaluation of sterling in the autumn of 1967.

The Federal Reserve once more moved against excess demand, and interest rates rose (Chart IV). By 1968, passage of a tax increase, coupled with a Federal spending cut, temporarily relieved fears of inflation at home and stilled talk that the dollar might have to be devalued.

Inflation gathers momentum

The inflationary momentum built up in three years proved difficult to check. Increased monetary stimulus on the heels of the 1968 tax increase proved to be a mistake, which added to upward pressures on prices. During 1969, monetary policy shifted progressively toward restraint. Interest rates moved to still higher levels, reflecting both a slowing in money supply and bank credit growth, and an "inflation premium" lenders needed to protect against the lower purchasing power expected when funds were repaid.

The Federal Reserve's braking action took hold in 1970 and industrial production slipped throughout the year (Chart V). As unemployment rose toward 6 percent, the Federal Reserve shifted once again to a policy of monetary stimulation. Prices, however, continued to rise as labor won wage settlements that more than made up for past increases in living costs. The recovery remained sluggish through mid-1971 but price inflation persisted.

In 1970 and 1971, the Federal Reserve pursued an expansive policy to promote recovery, and it continued to foster expansion in 1972 and 1973. It underestimated the strength of inflationary demands building up in the world economy. Fiscal policy also remained strongly stimulative. Federal Government outlays exceeded tax receipts by $38 billion in fiscal 1972 and 1973, when the economy was already moving ahead.

Monetary policy shifted increasingly toward restraint in 1973 and 1974. Surging credit demands, feeding what was now an inflationary boom, pushed interest rates higher and higher. The prime lending rate of commercial banks reached 12 percent in the summer of 1974.

Consumers reacted to soaring interest rates and a 12 percent rise in prices in 1974 by reducing their spending and adding to savings. The sharp rise in oil prices of November 1973 also cut into consumers' ability to spend on other products. Faltering consumer demand began to produce backlogs of unsold merchandise and unused raw materials. Businesses sharply reduced current output to work off these swollen inventories, producing the worst recession of the post-WW II period (Chart V). By spring 1975, the unemployment rate had soared to 9 percent. Abroad, the malaise of high unemployment and rising prices was spreading to most industrial countries, leading in some to social unrest and political turmoil.

The inflation of 1974 generated broad public support for policies of economic restraint. People appeared chastened by inflation's inroads on real

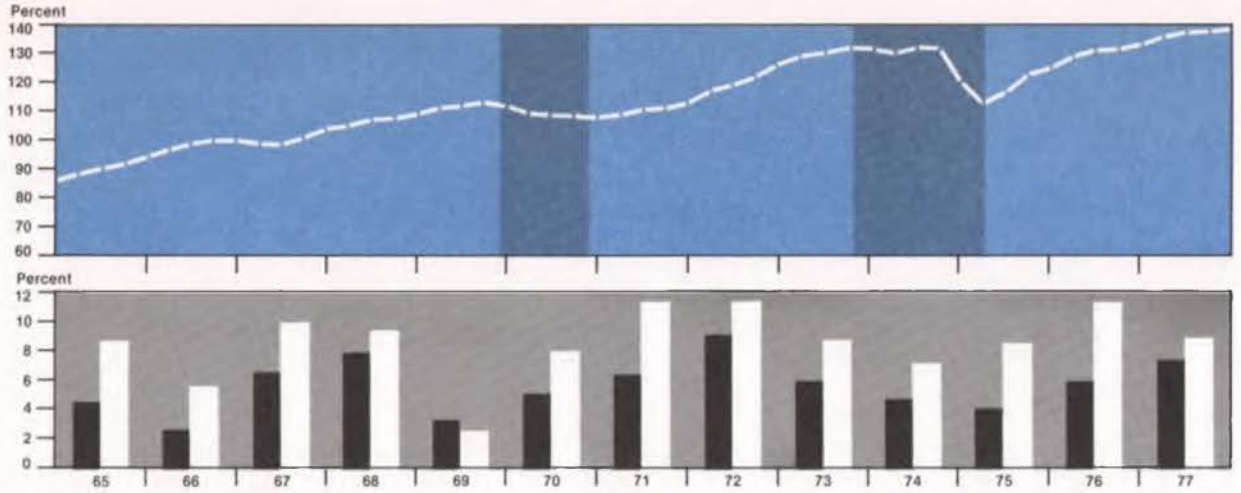


Chart V
Industrial Production, Money Supply and Time Deposits

Note: Dark areas in upper chart mark business cycle contractions

--Industrial production (1967 = 100)

■ Change in money supply (M_1)
□ Change in money supply plus time deposits (M_2)

THE INTERNATIONAL CONNECTION

The rumblings of international financial crisis began exerting a pervasive influence on the U.S. economy in the early 1970's.

The international monetary system that developed after World War II relied on U.S. dollars as the main source of world liquidity. Foreign governments built up dollar holdings in the 1950's and 1960's. Protected by this buffer, countries dismantled trade barriers and commerce flourished. But an important weakness became increasingly visible in the 1960's.

A key support was the United States pledge to redeem dollars held by foreign central banks and governments in gold at a fixed price of $35 an ounce. From the end of WWII, when the U.S. gold stock stood at $25 billion, to 1969, the U.S. paid out $13 billion of gold. The $12 billion remaining was no match for the $16 billion of dollar reserves in central banks and the $28 billion in private hands abroad. As early as 1960, rising dollar balances began undermining faith in the U.S. pledge. In the late 1960's, inflation weakened this country's competitive position, further eroding confidence.

The Federal Reserve pumped reserves into banks to stimulate the economy in 1970. As U.S. interest rates declined, private funds invested here returned to overseas markets. U.S. banks also expanded lending abroad. Central banks offered their currencies for dollars to keep their exchange rates from rising against the dollar. Official foreign dollar holdings rose by $8 billion during 1970, even though U.S. current commercial transactions with others were almost balanced.

As the U.S. economy recovered in 1971, demands for goods rose rapidly, boosting imports and expanding foreign dollar holdings. At the same time, American businesses began shifting funds to foreign operations, hedging against a possible dollar devaluation that would boost the dollar cost of foreign currencies. Foreign central bank dollar purchases rose sharply, and several banks began protectively tendering holdings for gold. Largely as a result, in August 1971, the U.S. stopped selling gold. International money markets entered a period of great uncertainty and widely fluctuating foreign exchange rates. The Smithsonian agreement in December 1971 allowed a 10 percent dollar devaluation against gold. But after further turbulence the dollar began floating against other currencies in March 1973.

Central banks were uncertain about how to operate in the new environment. If they didn't buy dollars with their own currency when the dollar was weak, the dollar's declining value would adversely affect their competitive positions. However, buying dollars would add reserves to domestic banking systems and risk overstimulating their economies.

In the end, central banks mainly continued buying dollars. The annual growth of world reserves, which averaged 2.7 percent from 1950 to 1969, averaged almost 30 percent annually in 1970 and 1971 and 17 percent from 1972 to 1974.* Not surprisingly, this excessive growth was followed, with a lag, by rapid growth in the money supplies of many countries, markedly higher prices for internationally traded goods, and a lagged effect on consumer prices in nearly every country.

World consumer prices, which rose about 4 percent annually on average from 1950 to 1969, rose 15 percent in 1974. The rise in prices resulted partly from adverse agricultural conditions and partly from the quadrupling of oil prices in late 1973. But that scramble for commodities can't be separated from the accelerated growth in world reserves or the expansive policies of many nations in prior years.

*H. Robert Heller, "International Reserves and World-Wide Inflation," *IMF Staff Papers*, Volume 23, pp. 61-87.

income and profits. There was increasing voter resistance to new or expanded spending programs. Policymakers were anxious to turn the economy around without monetary and fiscal overstimulation that might perpetuate double digit inflation.

Late in the summer of 1974, the Federal Reserve began shifting from restraint to moderate ease. Open market operations supplied reserves to the banking system to spur monetary growth. Continued strong Federal spending helped sustain consumer income and spending. But considerable public unease was evident over the $112 billion Federal deficit in fiscal 1975 and 1976 combined.

The economy turned around rapidly in early 1975 after business inventories had been worked down. But the recovery stretched out with businessmen spending cautiously. While employment rose strongly, unusually rapid growth in the labor force kept the unemployment rate from falling much below 7 percent during the first two and half years of the recovery. Inflation retreated to an annual range of 5 to 6 percent, but no lower, as labor bargained to protect real wages and businessmen sought to restore profit margins to pre-inflation levels. Still, the solidity of the economic advance raised hopes that with good management it could continue without prices spiraling upward again.

Abroad, the economic recovery in other industrial countries lagged behind that in the U.S. while growth in the developing and oil producing countries continued. Nearly everywhere there was recognition that inflation had to be kept under control if the world economy were to achieve sustained growth.

The economic experiences of the past dozen years have brought home two painful lessons. First, excessive monetary growth spills over into higher prices. Oil and agricultural price increases alone cannot explain the recent inflation. Second, restraining monetary growth is difficult when Federal spending consistently outstrips tax receipts by sizable margins.

The Federal Reserve has focused increasingly in the 1970's on setting forth growth rates in several monetary measures as its judgment of what is appropriate for the national economy. And it has begun lowering these growth rates to show its desire to reduce the inflation rate. How to move back toward fuller use of available manpower without setting off another inflationary burst is a problem likely to bedevil policymakers for some years. The validity of the System's approach—and the resolve of monetary and fiscal policymakers—remains to be tested whenever a strong surge in economic activity again calls for restraint.

FORMING MONETARY POLICY

The Board of Governors of the Federal Reserve System and the 12 Reserve Banks share in the formulation of the nation's monetary policy. The Board sets reserve requirements, that is, the proportion of deposits member banks must hold as reserves. Directors of the Reserve Banks initiate changes in the discount rate, subject to review and determination by the Board of Governors. The Reserve Banks administer lending operations—that is, pass on member bank applications for loans, which usually cannot exceed 15 days.

The Federal Open Market Committee, composed of seven Board members and five of the 12 Reserve Bank presidents, directs open market operations. The Federal Open Market Committee, or FOMC as it is known, meets once each month in Washington. FOMC meetings provide the focal point for Federal Reserve assessment of the economy's performance and decisions on what open market policy should be. There is often discussion as well of the use of reserve requirements and the discount rate, although the FOMC has no responsibility for these tools.

The FOMC organization

The FOMC developed from an informal investment committee set up by the Reserve Banks in the early 1920's and was given its present legal structure and powers in 1935. The President of the Federal Reserve Bank of New York by law serves as a continuing member of the FOMC while the presidents of four of the 11 other

Reserve Banks serve one-year terms in rotation. Traditionally, the FOMC has selected as its Chairman, the Chairman of the Board of Governors, and as its Vice Chairman, the President of the Federal Reserve Bank of New York. In practice, each Reserve Bank president, or alternate, attends every meeting of the Committee and participates fully in its discussions, even if he is not currently a voting member of the FOMC.

Under the FOMC's direction, the Federal Reserve Bank of New York buys and sells securities for the account of all Reserve Banks. The 12 Reserve Banks participate in the System Open Market Account, which held $102 billion in Government and Federal agency securities in early 1978. Annually, the FOMC customarily appoints a senior officer of the New York Reserve Bank as the Manager of the System Open Market Account. The Manager of the Account, currently an executive vice president of the New York Bank, oversees System operations in both the domestic securities and foreign exchange markets. He and the Deputy Manager of the Open Market Account, a senior vice president, attend each meeting of the FOMC, report on open market operations, and receive instructions. Under the direct supervision of the Deputy Manager, the securities department carries out System operations. It also executes securities transactions on behalf of the United States Treasury, foreign central banks and official institutions, and international organizations.

Between meetings of the FOMC, members of the Committee as well as nonvoting Reserve Bank presidents evaluate business, credit, and international developments, follow the impact of open market operations, and develop their views on the future course of monetary policy. Economists in the research departments of the Board and the Federal Reserve Banks provide a stream of reports on business and financial trends to their principals. The Federal Reserve Bank of New York reports daily and weekly on Federal Reserve operations and on the money, Government securities, and foreign exchange markets. Reserve Bank presidents also gain insights into business trends from meetings of each Bank's board of directors, which is composed of nine members drawn from banking, business, agriculture and other sectors of society. Before each meeting of the FOMC, each president and Board member customarily meets with staff aides to review the state of the economy and to discuss the most appropriate course for monetary policy to follow.

The FOMC meeting

By the time the members of the Committee assemble in Washington, they are well prepared to deliberate. Each has in hand reports from the Board's staff on past and prospective economic and financial developments, both domestic and international. Also, each has studied drafts of alternative policy directives, which might be used to govern open market operations until the Committee next meets. Each alternative prepared by the Board's staff includes annual growth of the monetary aggregates believed consistent with FOMC economic objectives. It also includes ranges for M_1, M_2, and the Federal funds rate over the near term.

At the meeting, the Committee first hears reports on the foreign exchange market and takes action as necessary in connection with its foreign exchange operations. The Committee then considers the outlook for the domestic economy.

Once a quarter, senior members of the Board's staff present detailed projections of the likely behavior of the economy over the next year or so, assuming a continuation of growth in the monetary aggregates at the rate adopted in the previous quarter. The staff is also prepared to give its views on the impact that higher or lower monetary growth rates would have on economic growth, employment and prices. After a full discussion among FOMC members and other attending presidents, the FOMC adopts ranges of desired growth for various monetary measures over the year beginning in the quarter just past. In July 1977, for example, the Committee set ranges of 4 to 6½ percent growth for M_1 in the year ending in the second quarter of 1978 and 7 to 9½ percent for M_2. (The Chairman of the FOMC discusses these ranges and the economic outlook with the banking committees of the Congress in the quarterly

meetings they employ for oversight of monetary policy.)

At each monthly meeting, the Board's staff reports on economic and financial developments and their effect on the long-term outlook. The principals then discuss the situation. Thereafter, attention shifts to the practical problems of achieving the growth in money sought by the Committee. The Deputy Manager of the System Open Market Account reports on domestic open market operations and developments in the financial markets since the last meeting. A senior Board staff member comments on the monetary relationships associated with the alternative directives given the Committee.

Each of the principals attending gives his views on the proposed alternative directives and on the manner in which open market operations ought to be carried out. The Chairman sets forth the main thrust of the discussion and puts before the meeting for final discussion and vote the directive that best embodies the Committee's intent. The FOMC's directive provides the Manager of the System Account with the broad objectives of open market operations. In addition, it typically establishes the initial objective for the Federal funds rate and the range within which it is to vary between meetings. For example, if M_1 and M_2 growth turn out to be strong relative to their ranges for a two-month period, the Manager is instructed to hold back in providing reserves so that the Federal funds rate rises within its range. The increase in the Federal funds rate is expected to work to choke off an undesired growth in deposits.[1]

MANAGING THE ACCOUNT

After each FOMC meeting the Manager of the System Open Market Account returns to New York with the responsibility for managing operations until the next meeting. In carrying out the FOMC's instructions, he presides over an elaborate mechanism for assessing the pressures on bank reserves and the financial markets.

The Manager looks to the Federal funds market to gauge the general availability of nonborrowed reserves in the banking system in relation to member bank reserve requirements. The Federal funds rate typically comes under upward pressure whenever nonborrowed reserves fall significantly short of requirements, since some member banks will bid up the rate rather than borrow at the Federal Reserve discount window. The rate typically falls when reserves exceed requirements by sizable amounts. The Manager finds another clue in the daily conversations staff members have with nonbank dealers in Government securities concerning their success in financing holdings with short-term loans. These indicators help the Manager judge the extent to which member banks are likely to borrow from Reserve Banks and whether pressures seem likely to be greater, or less, than intended.

The Manager watches developments in the market for Treasury bills, commercial paper, bankers' acceptances, and CDs where investors may be exchanging cash for securities or securities for cash. The market for longer term securities is also of interest because the smooth flow of capital into investment uses is essential to the economy's growth. The orderly sale of securities from corporations and governmental units to investors depends on the reliable availability of short-term credit to investment bankers and other securities dealers on reasonably stable terms. Like the Government securities dealers, they depend on borrowed money to finance their inventories of salable securities.

The Manager must always be alert to the interaction between the short- and long-term credit markets since the effects of monetary policy typically fan out from the short-term market to the long-term market. He also keeps informed about the extent to which credit is being used in the market for corporate stocks, an activity subject to the Federal Reserve Board's margin regulations.

[1]See Alan R. Holmes, Peter D. Sternlight, John S. Hill, and Christopher J. McCurdy, "The Implementation of Monetary Policy in 1976," Federal Reserve Bank of New York, *Quarterly Review*, Spring 1977, pp. 37-49.

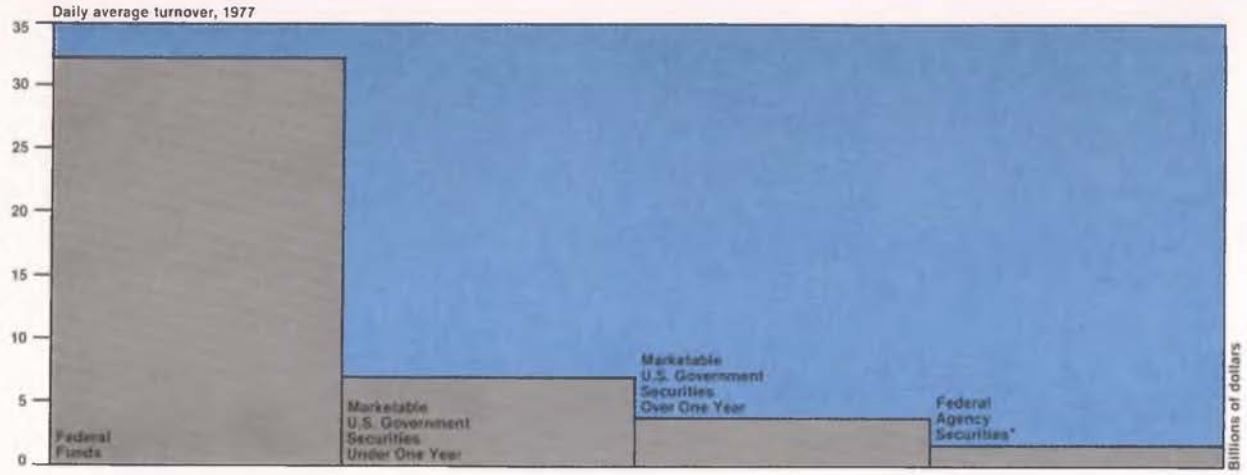


Chart VI
Profile and Selected Money and Capital Market Instruments

*Not guaranteed by the U.S. Government

THE ENVIRONMENT

The money market is the natural point of contact between the Federal Reserve and the economy's financial sectors. A national market for money and money substitutes, such as Treasury bills and other short-term obligations, provides our complex economy with a means of economizing its use of money (Charts VI & VII). Thousands of businesses, financial corporations and governmental units minimize their cash balances by relying on these short-term, interest-earning assets, which can readily be converted into cash with little risk of loss. Corporations, for example, find Treasury bills an attractive investment for funds not immediately required for tax payments, dividends or other uses. In part because of this, the Treasury can usually sell short-term obligations at a lower interest cost than a longer term issue would require. Banks, finance companies, and other businesses also find the market a convenient place to borrow.

Commercial banks are the heart of the money market. The balances on their books and the books of Reserve Banks are its lifeblood. Banks turn to the money market to borrow or lend funds overnight (purchase or sell Federal funds). They use it when they buy Treasury bills and bankers' acceptances as they struggle to keep fully invested. They use it differently when they sell their own CDs or other assets to meet new and pressing customer credit demands.

The large money market banks are as important to the money market as it is to them. They supply much of the credit that enables nonbank dealers in money market paper to buy and hold an inventory. When corporations and others who lend to dealers cut back on lending, the money market banks fill the credit gap. These banks' reserve positions and the money market are likely to bear the brunt of financial pressures elsewhere in the economy.

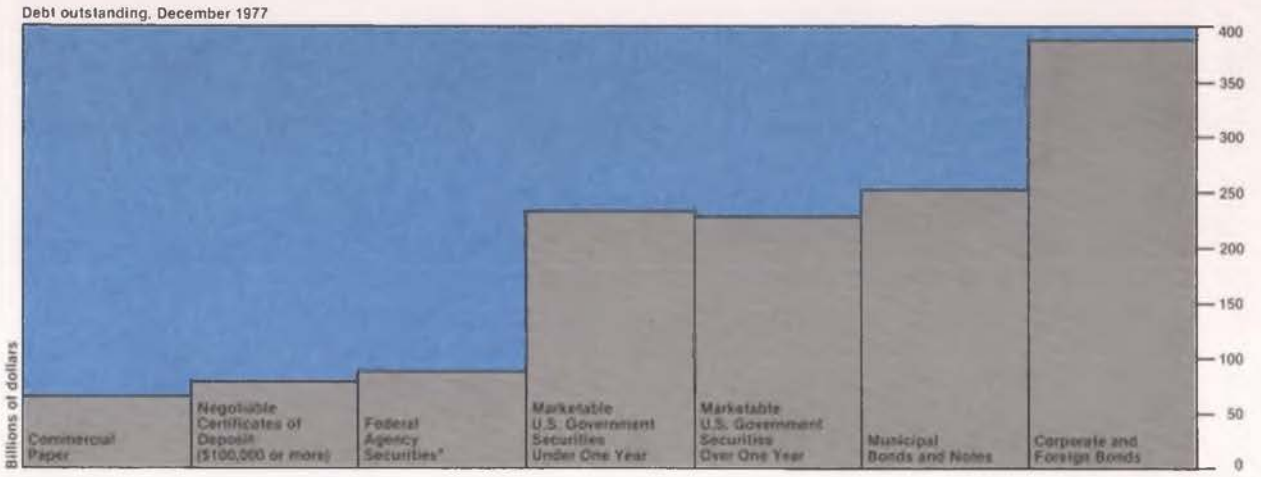
Open market operations center in the Government and Federal agency securities market. About $420 billion of marketable bills, notes, and bonds of the U.S. Government are the stock-in-trade of this market. They range in maturity from Treasury bills falling due every Thursday to the bonds maturing in 2007. The remaining $230 billion or so of the national debt consists of nonmarketable issues, such as savings bonds and special securities issued to governmental trust funds and foreign official accounts.

The volume of transactions in this "over-the-telephone market" is huge. In 1977, volume averaged about $11 billion daily at face value, about 18 times the daily dollar volume of trading on the New York Stock Exchange. Government securities trading is heaviest in the $155 billion of Treasury bills that mature within one year, but trading is also very active in notes and in agency securities.

Primary dealers in government and agency securities are prepared to buy these securities from customers for inventory and sell from their own holdings. As noted earlier, nonbank dealers pledge these holdings as collateral for loans. Naturally, they try to borrow at a lower rate than that earned on their holdings. Dealers also derive income from the spread between purchase and sale prices. Spreads between bid and asked prices typically amount to $50 for $1 million of Treasury bills maturing in three months and more for longer maturities. Dealers also have trading profits or losses, which reflect their ability to anticipate market trends sufficiently to buy low and sell high. Competition is keen among the three dozen dealers in this market. Several hundred of their bank and other customers are active traders, but they do not deal on either side of the market in response to others as dealers do.

Chart VII
Profile and Selected Money and Capital Market Instruments

*Not guaranteed by the U.S. Government



Tools of the trade

The New York Fed's trading desk on the eighth floor closely follows developments in each of the interrelated money and capital markets. Two or three Federal Reserve traders continuously check prices and dealers' opinions of market trends. Others may execute buy and sell orders for foreign accounts. Constant monitoring assures that the quotations received are representative of the trading going on in the market.

The Bank's research department gives the Manager daily reports on the reserve positions of large member banks in New York City, in other financial centers and in the country at large. Other reports record the securities holdings and transactions of Government securities dealers. A special staff prepares daily statements of the past and projected behavior of all factors affecting member bank reserves—including currency in circulation, float, and Treasury operations.

When the Manager reaches a decision on what is to be done on a given day, he has several means of supplying or absorbing reserves. He may make an outright purchase or sale directly through the "go-around" of the market described in the opening pages. On infrequent occasions, he may accept competitively priced bids for, or offerings of, securities made by dealers on their initiative. A "cash" delivery transaction involves delivery and payment the same day. A "regular" delivery transaction involves delivery and payment on the following business day.

The Federal Reserve also supplies reserves by making repurchase agreements with dealers in United States Government and Federal agency securities or in bankers' acceptances. In a repurchase agreement, the Reserve Bank purchases securities from a dealer, who agrees to repurchase the same securities at the original price plus interest at a competitively determined rate within an agreed period of up to 15 days. Repurchase agreements are made only at the Fed's initiative. The contracts may either bind the parties for a specified time or allow either to terminate the agreement before maturity. In a repurchase agreement, the Fed pays out money, and supplies reserves, on the day of the purchase. When the dealer repurchases the securities, his payments are charged to his bank's reserve account, withdrawing reserves from the System.

Similarly, the Federal Reserve can absorb reserves temporarily through matched sale-purchase transactions. These transactions involve selling Treasury bills for cash, and simultaneously purchasing the same issue of bills for redelivery one or more days later at competitive rates. Both this technique and the repurchase agreement enable the Account Manager to affect reserves in large volume with little, if any, impact on Treasury bill rates.

The Federal Reserve has a special opportunity each week to withdraw reserves by allowing some portion of its holdings of maturing Treasury bills to run off at maturity. (As a matter of practice, the System doesn't bid for more bills at the weekly auction than it holds of maturing bills.) Each Monday, the Treasury offers to sell at auction a specified amount of three- and six-month Treasury bills, which must be paid for on the following Thursday; the amount of bills offered may be greater, or less, than the amount maturing. The Federal Reserve may roll over its holdings at the average price established in the competitive auction. However, if on Monday the Manager already foresees a need to withdraw reserves in the next week, he may submit a low bid on a part of the Fed's maturing holdings, thus intentionally "missing" the range of accepted bids. Other buyers then absorb the additional bills, causing a drop in bank reserves on Thursday, when buyers pay for the bills.

All part of a day's work

Each day presents a new challenge to the Manager and his colleagues. Yet each day has much in common with every other day. Let's go back to that Tuesday before Thanksgiving Day and follow the developments which led to the Fed's purchase of $523 million in Government securities.

On that day, as on all days, the Manager must bear in mind the directive adopted at the last

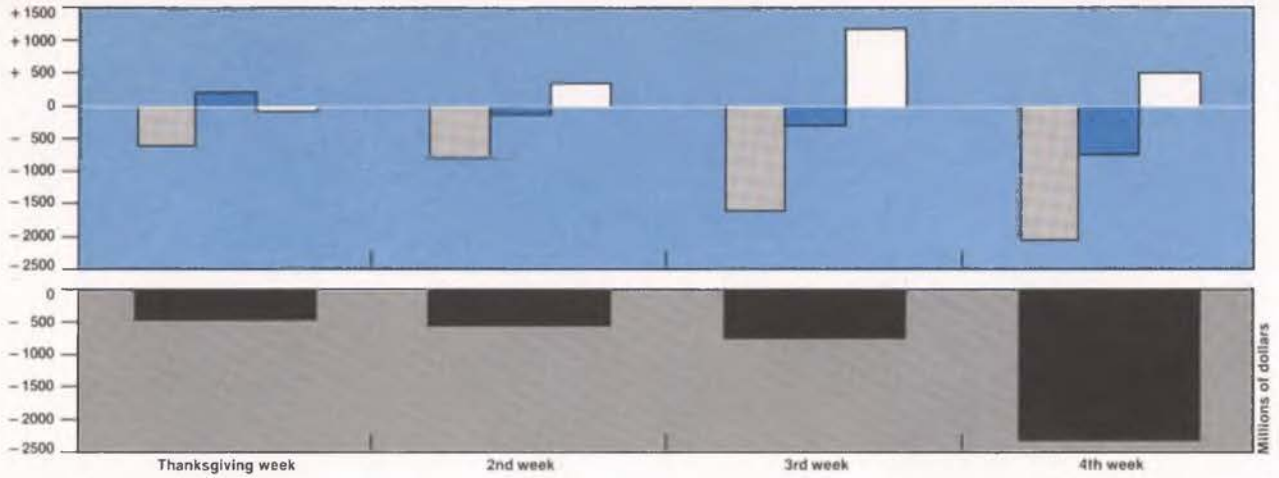


Chart VIII
Projected Cumulative Effect on Excess Reserves

- Currency in circulation
- Required reserves
- Other
- Total operating factors

FOMC meeting. Suppose the directive called for fostering growth in the money and credit aggregates conducive to sustainable economic expansion. Suppose further that the instructions called for keeping the Federal funds rate at the middle of the 5¼ to 6¼ percent range established.

The Manager could see the main outlines of his task early on Tuesday morning. He had before him Monday's projections of the behavior expected of nonborrowed reserves over the coming weeks (Chart VIII). Tuesday's projections would be available a bit later, at 10:45 a.m. The projections are based upon the behavior of reserve factors over the same calendar period during the past several years.

Monday's projections indicated that during the next week the decline in float at the month-end would combine with a seasonal rise in currency in circulation to absorb a large volume of nonborrowed reserves. Over the weeks ahead the Manager would have to add heavily to reserves to compensate for the continuing outflow of currency as the shopping season reached its peak and to provide for the seasonal rise in required reserves.

Useful as a rough yardstick, the projections cannot be a precise guide to operations. Each year, for all its similarities to the past, produces a pattern of financial flows that is all its own. The Manager and his experienced officers must look to the Federal funds market itself for signals of the timing and magnitude of the reserve pressures actually at work on this particular day.

Open for business

The trading room's business day begins a few minutes after 9 a.m. News tickers are pounding out the overnight accumulation of financial news. Securities traders reorient themselves by scanning yesterday's closing quotations on the board facing the open end of the trading desk. A check of a television screen shows whether any changes are taking place that morning.

Dealer conference

At 9:00 a.m. on that Tuesday before Thanksgiving, two officers of the securities department hurry to a tenth floor conference room for separate meetings with representatives of three dealer firms. Fed officers directly responsible for open market operations meet with the dealers on a rotating basis every business day. The dealers comment on market developments as well as matters of particular interest to their firms. The Fed officers listen and ask questions. The meetings, brief and to the point, are conducted in market jargon.

At the first meeting, a senior partner of a dealer firm comments on the market's inactivity during the last few days. He says he is a bit disappointed by the recent lack of demand for Treasury notes and bonds. Insurance companies and pension funds, he believes, are delaying bond purchases until the XYZ Corporation's $200 million bond issue hits the market on Wednesday. Turning abruptly to the Treasury's financing needs, the dealer says he would advise the Treasury to sell a five-year issue in December. Such an offering would generate good bank interest and stimulate trading activity in Government securities. After answering several questions asked by the desk officers, the dealer departs at 9:15.

Two representatives of a second dealer firm enter the conference room. Although domestic demand has been quiet, their firm has sold issues maturing in two to five years to a foreign central bank in the last few days. They feel that many institutional investors are sitting on large cash positions until yields become more attractive. One dealer says he also feels the money market was a little tight on the previous afternoon even though the System had pumped in reserves. To obtain financing for the firm's position, the dealer had to pay a relatively high interest rate on repurchase agreements with out-of-town corporations.

The second firm's representatives leave at 9:30. The vice president in charge of dealer operations for a New York bank covers much the same ground and departs at 9:45. The Fed officers return to their offices to prepare for the daily Treasury call.

The Treasury call

Shortly after 10:15 each day, the Fiscal Assistant

Secretary of the Treasury and the Deputy Account Manager use a direct telephone line to compare notes on the immediate outlook for the Treasury's balances held at Reserve Banks. Their objective is to coordinate changes in Treasury balances with the System's management of bank reserves. They compare notes on the amount of Treasury checks they expect to be presented for payment at Reserve Banks that day and on the next two days.

Today, the Assistant Secretary tells the Deputy Manager that his projections of daily Government receipts and expenditures indicate $500 million must be transferred today from its balances at commercial banks to the Treasury's Reserve Bank balance. The funds will come from tax and loan accounts at 275 large commercial banks across the country (the Class C banks), and will be in addition to calls previously scheduled on tax and loan accounts at other commercial banks. The Fed's projections indicate a drain of $600 million from the Treasury's account. After discussion, the Assistant Secretary decides to call 100 percent of the previous night's Treasury balances at the "C" banks—about $550 million.

The conversation over, the Deputy Manager informs another officer in the Bank that the Treasury has decided to make a special call today on the "C" banks. By 11 a.m., large banks everywhere will have been instructed to transfer 100 percent of the Treasury's deposits with them at Monday's close to their district Reserve Banks.

These transfers will drain member bank reserves. In this case, the transfer will only offset most of the increase in member bank reserves expected from today's payment of Treasury checks presented during the day to the Reserve Banks. These checks are often deposited widely over the country. Big city banks may find themselves net losers when they transfer Treasury deposits to the Reserve Banks. In that case, these banks would need to step up their overnight borrowing in the Federal funds market.

Getting the "feel" of the market

Well before 10:00 a.m., the Government securities market has usually become active. By then several traders around the Fed's desk are trying to learn from dealers whether any trend is developing. Other traders are getting a rundown from the Bank's foreign department about orders to be executed for foreign accounts. Reports have arrived on dealer positions, and on reserve positions and Federal funds transactions the day before at major banks in New York and other cities. On hand is a report giving the distribution of reserves among money market banks, other reserve city banks, and country banks.

Shortly after 10 o'clock, two clerks update the quotation board with the latest "runs" of prices and yields obtained by telephone from dealers. The Fed's traders already know from their conversations with dealers what the board shows: prices are steady. They also know that there has been little trading except among dealers who are testing each other's markets by "hitting a bid"—that is, selling securities at the price bid by another dealer. Fed funds are quoted 5 7/8 percent bid, 6 percent offered, which is a shade higher than yesterday's average rate of 5¾ percent and well above the Fed's 5½ percent discount rate.

One staff member calls the nonbank dealers to find out how much new money will be needed to replace loans maturing today or to finance securities being delivered today. A few minutes before 11 a.m., his tabulation shows that the dealers need loans of about $4.5 billion to finance their present securities holdings. Money was available at the close yesterday at 5¾ percent, but several dealers think money may be more expensive and harder to get today.

The desk officer, who has just been joined by the Deputy Account Manager and another officer, summarizes developments for them. Together, they review the newest projection of factors affecting bank reserves over the next six weeks, a research report received only moments before. The projection indicates that float on Monday was $500 million less than expected. Revised projections suggest the Fed must inject more

reserves in the current week to hold the Fed funds rate around 5¾ percent. The officers begin to formulate the day's plan of action; the Deputy Manager checks with the Manager by phone and writes out the day's program. A last-minute contact with the traders indicates that banks and others are beginning to sell Treasury bills to dealers in greater volume than buyers are taking from them. Dealers are raising the rates they are bidding for Treasury bills, that is, prices are beginning to decline.

Meanwhile, a staff call is made to the Board of Governors in Washington and to the office of one of the Reserve Bank presidents currently on the FOMC. The New York staff provides information on the full range of data available on bank reserves and the money and Government securities markets. Thus, the Reserve Bank President will have before him the data on which the desk's plan of action is based. The officers hurry to an adjoining office to participate in the key telephone conversation that formalizes the day's strategy—the 11:15 conference call.

The conference call

"Washington and San Francisco are standing by," announces the telephone operator, completing the three-way telephone hookup that enables the Account Manager to review developments with the staff of the Board and the Reserve Bank president on the call. Sitting in on the conversation at the New York end today are the President of the Bank, the Manager and Deputy Manager of the System Account, and the officers of the securities department. Seated directly behind a telephone microphone, one of the officers speaks:

"Conditions have changed somewhat since we spoke yesterday. The Government securities market opened this morning with very few changes in prices and rates, and with little activity. But Treasury bill rates now seem to be rising. There are some indications that long-term investors are holding off to see how the market will take the $200 million bond issue of the XYZ Corporation tomorrow. Fed funds opened at 5 7/8 percent bid, 1/8 percentage point above yesterday's closing rate, and funds are well bid at that rate. Dealer financing needs this morning opened at about $4.5 billion. The banks have raised their call loan rates on dealer loans from 6 to 6¼ percent.

"Yesterday, we had a shortfall in reserves that more than offset what we put in. We look for a sharp decline in reserves today and tomorrow as currency in circulation increases and float drops. Banks here and in Chicago seem under special pressure and have been very heavy buyers of Federal funds on each of the last three business days. Banks in several other major cities show reserve deficiencies. Today's $550 million call on the "C" banks will add to pressure on the money market banks."

The officer then reads the Manager's proposed plan for the day:

"In view of the expected stringency in reserves, the Account plans to purchase securities for cash. If the market continues to tighten, we may buy as much as $500 million of Treasury bills. We can use repurchase agreements to supply additional reserves if needed."

The conversation is, of course, more detailed and laced with the verbal shortcuts familar to people operating in the money market. Prospective developments in the next couple of weeks are discussed. The Board participants may report about possible M_1 and M_2 revisions. The San Francisco Reserve Bank president will express his view on the proposed action.

The call is usually completed by 11:30. A staff member at the Board promptly summarizes the call in a memorandum sent to each Board member and a telegram is sent to each Reserve Bank president.

The decision

Shortly before noon, conditions begin to jell rapidly and indicate a sharp increase in reserve pressures. Fed funds are heavily bid for at 5 15/16 percent. New York City banks and other participants in the funds market report that funds are hard to find. Dealers report little progress in meeting their financing needs by borrowing on a

secured basis from their out-of-town sources, even at 5 7/8 percent.

The Manager reviews the evidence and gives the final go ahead: "The market has really started tightening up. We'd better move in right away in size to prevent this from getting out of hand. Let's go in and buy about $500 million in Treasury bills for cash today." As we have seen, within thirty minutes the Fed's traders purchase $523 million in Treasury bills for cash in a market "go-around."

Fed officers continue to watch the situation after the "go-around" is completed at around 12:30 p.m. The Fed funds rate eases back to 5 7/8 percent bid for a time, but then the brokers report that bids appear to be building while the supply available remains limited. Given the persistent tightness, the Manager approves the desk officer's recommendation that the System purchase about $1 billion of Treasury and Federal agency securities under overnight repurchase agreements. Perhaps $100 million of bankers' acceptances will be bought under similar contracts.

By 1:00, the additional injection of reserves has been made, bringing the day's total to over $1.5 billion. Better balance returns to the Federal funds market, but the officers will not know until the next day whether the shortage of reserves reflected a sharper-than-expected drop in float or something else. A daily telegram to the Board and

Reserve Banks will summarize the day's developments.

Private market traders will debate whether the Fed's action that day sought simply to head off the developing strain in the market or whether it had broad policy significance. Analysts may conclude that the Federal Reserve's double-barreled entry suggests that 5¾ percent is still the desk's objective. On another occasion, if analysts were worried at the strength in the M_1 and M_2 data published in recent weeks, they might quickly conclude that the Federal funds rate objective was being raised—were the desk to appear slow in supplying reserves. But today the reserve strains that threatened to become acute have disappeared.

Tomorrow is another day . . .