Monetary Policy in 1980 and 1981

By J. A. Cacy

In conducting the nation's monetary policy in 1980, the Federal Reserve System has focused on achieving its objectives for growth in the supply of money and credit. The System has been establishing monetary growth objectives for a number of years and, in October 1979, adopted new procedures designed to improve its control over the money supply. This article discusses these procedures, which may be referred to as the money supply-reserve aggregate approach to conducting monetary policy. The article also reviews the conduct of policy in 1980 and discusses the policy outlook for 1981.

THE FEDERAL RESERVE'S PROCEDURES

The money supply-reserve aggregate approach to conducting monetary policy consists of three steps. The first step is to establish objectives for the growth rate of the money supply. These objectives, which are established by the Federal Open Market Committee (FOMC), are stated as yearly growth rate ranges for the various money supply definitions. These ranges indicate the Federal Reserve's view of the appropriate pace of monetary growth. In conducting monetary policy, therefore, the Federal Reserve takes actions intended to cause the money supply measures to grow at rates within their established ranges.

In addition to establishing yearly growth ranges, the FOMC adopts paths for the money supply measures for shorter periods within the year. These shorter run paths, which are generally consistent with the yearly growth rate ranges, are stated as specific growth rates for various money supply definitions during the shorter periods designated. For example, at the February 1980 meeting, the FOMC established paths for selected money supply measures for the first quarter of the year. These paths meant that the Federal Reserve planned to take actions intended to cause the money supply measures to grow at the specified rates over the first three months of the year.

The second step in the money supply-reserve aggregate approach is to determine paths for total reserves and nonborrowed reserves. The path for total reserves is that level or growth rate of total reserves that is determined to be consistent with the desired shorter run paths for the money supply. Given the money supply paths, the path for total reserves depends on the relationship between total reserves and the money supply, which may be summarized as

$$M = Rm$$

where M represents the money supply, R represents total reserves, and m represents a "money multiplier."

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The equation indicates that the money supply is related to reserves and a money multiplier. Specifically, the level of the money supply is equal to the level of reserves multiplied by a money multiplier. In terms of growth rates, the growth rate of the money supply is equal approximately to the growth rate of reserves plus the growth rate of a multiplier. That is,

$$\dot{M} = \dot{R} + \dot{m}$$

where the dots over the variables indicate growth rates.

Deriving a path for total reserves is equivalent to estimating the expected level or growth rate of the money multiplier.[1] Thus, the path for total reserves is

$$R^* = M^*/m^e$$

or, in terms of growth rates,

$$\dot{R}^* = \dot{M}^* - \dot{m}^e$$

where R^* is the path for total reserves, M^* is the path for the money supply, and m^e is the expected level of the multiplier.

The path for nonborrowed reserves is derived by subtracting from the total reserves path an allowance for reserves that will be supplied through the discount window. This allowance is referred to as the initial borrowing assumption, or the borrowing path. Thus, the path for nonborrowed reserves may be derived as follows:

$$NBR^* = R^* - BR^*$$

where NBR^* represents the path for nonborrowed reserves and BR^* represents the initial borrowing assumption, or the path for borrowing.

The borrowing path is significant because it has implications for short-term interest rates. Given the path for total reserves, a relatively high initial borrowing assumption implies by definition a relatively low path for nonborrowed reserves. A low path for nonborrowed reserves, given the demand for reserves, tends to be associated with relatively high short-term interest rates. This is because competition for a limited supply of reserves tends to keep their price at a high level. Similarly, a relatively low borrowing path and a relatively high nonborrowed reserves path tend to be associated with low interest rates. Thus, given the demand for reserves, the paths for borrowed and nonborrowed reserves imply a given level of interest rates.

Presumably, the level of interest rates implied by the path for nonborrowed reserves is consistent with the path for the money supply. For example, if the demand for money is strong relative to the path for money, a relatively high level of interest rates will be required to reduce monetary demand and maintain the monetary growth rate in line with the path. In this case, a relatively low nonborrowed path will be needed to produce the high interest rate.

The third step in the Federal Reserve's procedures is to use the paths to conduct monetary policy. On a day-to-day and week-to-week basis, the Federal Reserve undertakes open market operations—the buying and selling of U.S. government securities—designed to achieve the path for nonborrowed reserves. In the short run, total reserves cannot be controlled, due in part to lagged reserve accounting. Thus, instead of total reserves, nonborrowed reserves serve as a control variable and are kept on path. Due to fluctuations in the demand for reserves, total reserves may deviate from path.

[1] The multiplier, which arithmetically is simply a number that gives the amount of money balances that can be supported by $1 of reserves, need not be explicitly estimated. Instead, the reserve path may be derived by (1) determining the amount of required reserves needed to support the level of deposits implied by the money supply paths, (2) determining the amount of required reserves needed to support the level of reservable nonmonetary liabilities that are expected to prevail, (3) estimating the amount of excess reserves that banks will want to hold, and (4) summing the amounts derived in steps (1), (2), and (3). The multiplier, of course, is the ratio of the money supply path to the total reserves path.

In this case, since nonborrowed reserves are kept on path, borrowing will deviate from its path. At the same time, changes in the demand for reserves give rise to fluctuations in the Federal funds rate, as it plays its role of equilibrating the demand for and supply of reserves. These movements in interest rates, over a period of time, work to counter the deviations of total reserves away from path.

The actual conduct of monetary policy under the procedures may be clarified through an illustration. Suppose the money supply is increasing in line with path and that the behavior of the multiplier has been estimated accurately. In this case, total reserves will be increasing in line with the path for total reserves (since $\dot{R}^* = \dot{M}^* - \dot{m}^e$). Suppose further that the path for nonborrowed reserves is being achieved and that the Federal funds rate is at a level that equates the demand for and supply of reserves.

Now suppose that the demand for money increases, leading to an acceleration in the monetary growth rate above path. The greater monetary growth rate will lead to a step-up in the demand for total reserves. With the nonborrowed path being achieved, the increase in the demand for reserves will lead to a rise in the Federal funds rate, as banks bid for the limited supply of reserves. The higher Federal funds rate will result in a rise in borrowings, thereby providing the reserves needed to support the greater demand. At the same time, though, the rise in the Federal funds rate will encourage an increase in other short-term interest rates, which will work to bring the monetary growth rate back in line with path. Thus, the procedure tends to create forces that automatically counter deviations of the monetary growth rate from path.

Beyond the automatic feature, two additional steps can be taken to counter deviations. One is to alter the nonborrowed reserves path. For example, the path can be lowered, placing additional upward pressure on interest rates and increasing the tendency for an above-path monetary growth rate to return to path. The second step is a change in the discount rate. For example, an increase in this rate will place upward pressure on interest rates.[2]

MONETARY POLICY IN 1980

The Federal Reserve's 1980 growth rate range was 3-1/2 to 6 per cent for M1-A—the narrowly defined money supply, which consists of currency plus demand deposits at commercial banks. The range for M1-B—defined as M1-A plus ATS and NOW accounts and other transactions deposits—was 4 to 6-1/2 per cent. The ranges for M2 and M3, more broadly defined aggregates, were 6 to 9 per cent and 6-1/2 to 9-1/2 per cent, respectively.

Over the first 11 months of 1980, the Federal Reserve has been only partly successful in achieving the longer run monetary growth objectives. For example, from the fourth quarter of 1979 through November 1980, M1-A increased at an annual rate of 5.7 per cent, well within M1-A's range of 3-1/2 to 6 per cent. (See Table 1.) However, M1-B's growth rate of 7.7 per cent over the same period was moderately above M1-B's range of 4 to 6-1/2 per cent. Also, the growth rates of M2 and M3 have been above their ranges.

While the Federal Reserve has been partly successful in achieving its longer run monetary objectives in 1980, it has been less successful in achieving the shorter run paths established to guide policy during the year. In the first quar-

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2 For a more detailed description of the new operating procedures, see "Description of the New Operating Procedures for Controlling Money," Hearings on the conduct of monetary policy before the House of Representatives Committee on Banking, Finance, and Urban Affairs (February 29, 1980). Also, see Bryon Higgins, "Free Reserves and Monetary Policy," *Economic Review,* Federal Reserve Bank of Kansas City, July-August 1980, and Gordon H. Sellon, Jr., "The Role of the Discount Rate in Monetary Policy: A Theoretical Analysis," *Economic Review,* Federal Reserve Bank of Kansas City, June 1980.

Table 1
GROWTH RATES OF MONEY SUPPLY

	M1-A	M1-B	M2	M3
1979:IV	4.2	4.4	6.0	6.9
1980:I	3.7	5.0	7.2	8.0
II	- 1.9	- 0.3	8.4	7.4
III	13.3	16.4	13.9	12.2
1980:First 11 Months*	5.7	7.7	10.1	10.2
1980:Growth Rate Range	3-1/2 to 6	4 to 6-1/2	6 to 9	6-1/2 to 9-1/2
September	12.6	15.8	8.6	9.2
October	9.4	11.2	9.3	10.9
November	6.8	9.6	12.2	17.1

*From fourth quarter of 1979 through November 1980.

ter, though, monetary growth did not deviate much from established paths. For example, M1-A and M1-B first-quarter annual growth rates of 3.7 and 5.0 per cent, respectively, were about in line with the paths of 4.5 per cent for M1-A and 5.0 per cent for M1-B established for that quarter at the February FOMC meeting.

In the second quarter, however, the growth rates of the money supply dropped sharply, with M1-A declining at a rate of 1.9 per cent and M1-B decreasing at a rate of 0.3 per cent. These growth rates were significantly below the second-quarter paths of a positive 4.9 per cent for M1-A and 5.3 per cent for M1-B.[3] In the third quarter, the monetary growth rates rebounded sharply, as M1-A increased at a rate of 13.4 per cent, considerably above M1-A's path for the quarter of 6.75 per cent. M1-B's third-quarter growth rate was 16.4 per cent, compared with the path for this measure of 8.5 per cent.[4] The growth rates of M1-A and M1-B continued strong into the fourth quarter and will exceed paths for the quarter of 2.5 per cent for M1-A and 5 per cent for M1-B.[5]

The volatility of the monetary growth rates in 1980 was accompanied by considerable volatility in interest rates. In the first part of the year, interest rates rose sharply, with the Federal funds rate rising from around 14 per cent at the first of the year to about 19 per cent in the first week of April. (See Chart 1.) This rise in interest rates was due to an increase in the anticipated rate of inflation and to efforts on the part of the Federal Reserve to prevent the growth rates of the money supply from exceeding their paths. Reflecting these efforts, nonborrowed reserves dropped in the first quarter and the discount rate was increased

[3] A second-quarter path was not explicitly established. However, in April, the FOMC established a path for the first half of 1980. The second-quarter paths given in the text are the growth rates required in the second quarter to achieve the first-half paths, given the actual growth rates for the first quarter.

[4] The third-quarter paths given in the text were established at the August FOMC meeting. Third-quarter paths were established at the July FOMC meeting also, which were 7 per cent for M1-A and 8 per cent for M1-B.

[5] These fourth-quarter paths were established at the October FOMC meeting.

from 12 to 13 per cent in February. Also, on March 14, the Federal Reserve implemented a credit restraint program designed to supplement the System's general program of monetary restraint by encouraging a reduction in the use of credit. As part of the program, a surcharge of three percentage points on frequent borrowing by larger banks was introduced.

Despite the rise in the discount rate, discount window borrowing rose sharply in the first quarter, averaging $2.7 billion in March, compared with $1.5 billion in December. The increase in borrowing offset most of the decline in nonborrowed reserves, so total reserves declined only slightly. Nevertheless, M1-A and M1-B grew moderately, due to a rise in the money multipliers. (See Table 2.)

In the second quarter, interest rates dropped sharply, with the Federal funds rate declining from about 19 per cent at the beginning of the quarter to around 9 per cent at the end of June. The second-quarter decline in interest rates was due to some decline in the expected rate of inflation, a sharp decline in economic activity accompanied by a drop in the demand for money, and Federal Reserve efforts to keep the money supply growing in line with paths. Reflecting these efforts, nonborrowed reserves rose sharply in the second quarter. Also, the surcharge on borrowing was removed in early May, and the basic discount rate was reduced to 12 per cent in late May and to 11 per cent in June. Despite the decline in the discount rate, borrowing fell in the second quarter, offsetting the rise in nonborrowed reserves. Thus, total reserves declined slightly. Unlike the first quarter, when an increase in the money multipliers supported moderate growth in the money supply, the second quarter saw a decline in the money multipliers combine with a small decrease in total reserves to support the sharp second-quarter drop in the monetary growth rates.

In the third quarter, interest rates rose again, and the upward trend continued into October and November. By the first week of December, the Federal funds rate was around 18 per cent, compared with 9 per cent in late June. The increase in interest rates during the five-month June-November period was due to the rebound in economic activity, which was accompanied by a rebound in the demand for money. The rise in interest rates was also encouraged by Federal Reserve efforts to maintain the monetary growth rates in line with paths, as reflected by the slow growth of nonborrowed reserves in the June-November period. However, borrowings rose, so that the growth rate of total reserves accelerated. Reflecting this acceleration, M1-A and M1-B grew rapidly in the June-November period, despite a decline in the multipliers.

The Federal Reserve has been criticized for permitting the 1980 volatility in the growth rates of the money supply measures. The volatility, however, was due mainly to large and, to some extent, unexpected shifts in the demand for money relative to interest rate levels. Under these conditions, an attempt to maintain a smooth monetary growth rate would have been largely unsuccessful. Moreover, the attempt would have caused extremely wide fluctuations in interest rates, even beyond the unprecedented movements that actually occurred.

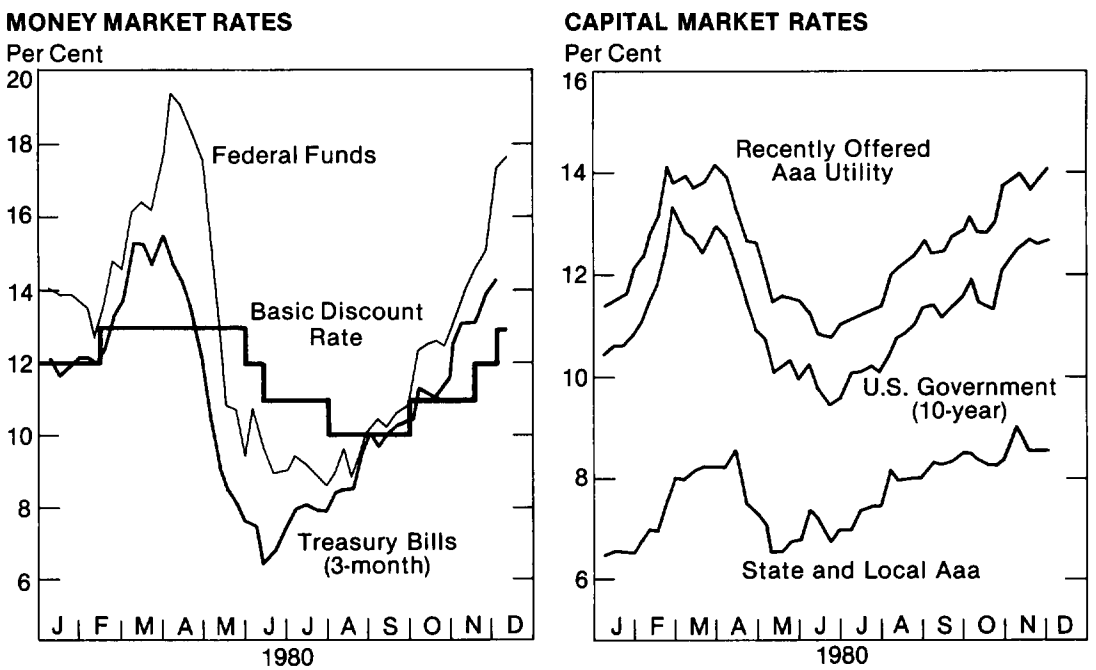
Had the Federal Reserve, for example, taken steps in the second quarter to increase nonborrowed reserves even more rapidly than the 30.3 per cent growth rate that occurred, interest rates would have declined even more than they actually did. Given the sharp drop in the demand for money, interest rates may have fallen to near zero. Even so, the money supply likely would not have increased much in the second quarter of 1980. Had nonborrowed reserves increased more rapidly, the growth of total reserves would have been somewhat greater. With very low interest rates, though, banks may have held much of the increase in total

Table 2
GROWTH RATES OF RESERVES AND MONEY SUPPLY

	Non-borrowed Reserves*	Total Reserves	Money Supply M1-A	Money Supply M1-B	Multipliers M1-A	Multipliers M1-B
1979:IV	12.4	13.4	4.2	4.4	-9.0	-8.7
1980:I	-14.2	- 0.3	3.7	5.0	4.0	5.3
II	30.3	- 0.2	- 1.9	- 0.3	-1.7	-0.1
III	1.5	13.7	13.4	16.4	-0.4	2.6
June-November	3.9	16.6	11.4	14.2	-4.9	-2.3

*Nonborrowed reserves growth rates are based on a series that includes special borrowings by one bank during the March-September 1980 period.

Chart 1
SELECTED INTEREST RATES



reserves in the form of excess reserves. Thus, the monetary growth rate likely would have remained sluggish because an increase in excess reserves is reflected as a decline in the multiplier rather than a rise in the money supply.

The decline in interest rates that did occur in the second quarter broke the economic slide and set the stage for business recovery, and a rebound in the demand for money and in interest rates in the third quarter. Had interest rates been pushed down further in the second quarter, the third-quarter rebound in the demand for money and in interest rates would have been even more pronounced. As it was, the increase in the demand for money in the third quarter was sufficiently strong to result in very rapid monetary growth, even though the Federal Reserve took steps to sharply slow the growth of nonborrowed reserves.

Thus, a Federal Reserve attempt to smooth monetary growth in 1980 would have produced even more volatility in interest rates than actually occurred. Moreover, the attempt would have been largely unsuccessful in actually smoothing the monetary growth rates.

MONETARY POLICY IN 1981

The Federal Reserve has established tentative growth rate ranges for the monetary aggregates for 1981. In general, these ranges are intended to be more restrictive than the 1980 ranges. However, the final establishment of 1981 ranges will be greatly complicated by the nationwide spread of NOW accounts that will occur beginning in January. The issuance of NOW accounts by banks and other depository institutions, allowed under the Monetary Control Act of 1980, will stimulate the growth of M1-B, which contains these accounts, because the public is likely to shift balances out of regular savings accounts into the NOW accounts. On the other hand, the growth rate of M1-A will be reduced, as the public shifts some balances out of demand deposits, which are in M1-A. Thus, in 1981, the demand for M1-B will increase more rapidly than under normal conditions, while the demand for M1-A will increase less rapidly. For this reason, the Federal Reserve's range for M1-A will be correspondingly lower, while M1-B's range will be correspondingly higher.

M1-A's 1981 range has been tentatively set at 0 to 2-1/2 per cent. This range is estimated to be comparable to a range of 3 to 5-1/2 per cent under normal conditions, which is somewhat lower than the 1980 range of 3-1/2 to 6 per cent. M1-B's 1981 range, which would be 3-1/2 to 6 per cent under normal conditions, is 5 to 7-1/2 per cent. As additional information about the growth of NOW accounts becomes available, the 1981 growth rate ranges for M1-A and M1-B may be further adjusted. The 1981 ranges for M2 and M3, which will not be affected by the spread of NOW accounts, have been tentatively set at 5-1/2 to 8-1/2 per cent and 6-1/2 to 9-1/2 per cent, respectively. These Federal Reserve monetary objectives are thought to be consistent with an expanding economy in 1981 and an eventual reduction in the rate of inflation. However, no significant decline in inflation is anticipated in 1981.

With the rate of inflation remaining high next year, and with some moderate growth taking place in the economy, the demand for money is likely to remain strong. This strength in the demand for money is likely to maintain interest rates at relatively high levels, although perhaps not as high as the levels reached in early December. While interest rates may fluctuate in response to changes in economic conditions, the future course of interest rates is likely to mainly reflect developments on the inflation front. In recent years, interest rates have increased when inflation has accelerated and have decreased when inflation has decelerated. As inflation and interest rates have moved together, real interest rates—that is, nominal rates minus the inflation rate—have fluctuated

within a relatively narrow range and have remained much lower than the nominal rates.

Real interest rates are unusually high at the present time, however. For example, with the Federal funds rate at around 18 per cent and the rate of inflation—as measured by the latest quarter's GNP deflator—at around 10 per cent, the so-called real Federal funds rate is 8 per cent. This compared with an average real Federal funds rate for the first three quarters of 1980 of about 3 per cent, and for the 1975-79 period of near zero per cent. Thus, unless there is an acceleration in the rate of inflation, which is not anticipated, and if past patterns prevail, the Federal funds rate, along with other short-term interest rates, may tend to decline somewhat in the period ahead. Nevertheless, the high rate of inflation that is expected to prevail will place a relatively high floor under the level of interest rates.